INEOS QUATTRO HOLDINGS LIMITED

2022 ANNUAL REPORT

TABLE OF CONTENTS

CERTAIN DEFINITIONS	3
FORWARD-LOOKING STATEMENTS	8
TRADEMARKS AND TRADE NAMES	10
HISTORICAL AND CURRENT MARKET AND INDUSTRY DATA	10
FINANCIAL INFORMATION INCLUDED IN THIS ANNUAL REPORT	10
RISK FACTORS	11
OPERATING AND FINANCIAL REVIEW AND PROSPECTS	44
BUSINESS	62
SUSTAINABILITY	111
MANAGEMENT	117
PRINCIPAL SHAREHOLDERS	120
CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS	121
DESCRIPTION OF CERTAIN INDEBTEDNESS	124
GLOSSARY OF SELECTED TERMS	G-1
INDEX TO THE EXTRACTED CONSOLIDATED FINANCIAL STATEMENTS	F-1

CERTAIN DEFINITIONS

Unless indicated otherwise in this annual report or the context requires otherwise:

- "**2026 Senior Notes**" refers to the €500,000,000 $3\frac{3}{4}$% Senior Notes due 2026 issued by INEOS Quattro Finance 1 Plc on January 29, 2021;

- "**2026 Senior Notes Indenture**" refers to the indenture dated as of January 29, 2021 among, *inter alios*, INEOS Quattro Finance 1 Plc, as the issuer, the Guarantors, as guarantors, and HSBC Corporate Trustee Company (UK) Limited, as trustee, pursuant to which the 2026 Senior Notes were issued;

- "**2026 Senior Secured Notes**" refers to the €800,000,000 $2\frac{1}{2}$% Senior Secured Notes due 2026 and the $500,000,000 $3\frac{3}{8}$% Senior Secured Notes due 2026 issued by INEOS Quattro Finance 2 Plc on January 29, 2021;

- "**2026 Senior Secured Notes Indenture**" refers to the indenture dated as of January 29, 2021 among, *inter alios*, INEOS Quattro Finance 2 Plc, as the issuer, the Guarantors, as guarantors, and HSBC Corporate Trustee Company (UK) Limited, as trustee, pursuant to which the 2026 Senior Secured Notes were issued;

- "**2027 Dollar Term Loan B Facility**" refers to the $201 million term loan facility made available to INEOS Styrolution US Holding LLC pursuant to the 2014 Term Loan Facilities Agreement;

- "**2027 Euro Term Loan B Facility**" refers to the €450 million term loan facility made available to the INEOS Styrolution Group GmbH pursuant to the 2014 Term Loan Facilities Agreement;

- "**2027 Senior Secured Notes**" refers to the €600,000,000 $2\frac{1}{4}$% Senior Secured Notes due 2027 issued by INEOS Styrolution Group GmbH on January 31, 2020;

- "**2027 Senior Secured Notes Indenture**" refers to the indenture dated as of January 31, 2020 among, inter alios, INEOS Styrolution Group GmbH, as the issuer, the Guarantors, as guarantors, and The Bank of New York Mellon, London Branch, as trustee, pursuant to which the 2027 Senior Secured Notes were issued;

- "**2027 Term Loan B Facilities**" refers to the 2027 Dollar Term Loan B Facility and the 2027 Euro Term Loan B Facility;

- "**AAGR**" refers to average annual growth rate, expressed as a percentage;

- "**Acquisitions**" refers to the BP Acquisition and the INOVYN Contribution;

- "**Acquisitions Closing Date**" refers to the date on which the Acquisitions were consummated, which was December 31, 2020;

- "**BASF**" refers to BASF SE and its consolidated subsidiaries;

- "**BP**" refers to bp p.l.c. and its consolidated subsidiaries;

- "**BP Acquisition**" refers to the purchase by the Group of BP's global Aromatics and Acetyls Businesses pursuant to the BP Acquisition Agreement and the entry into the other agreements;

- "**BP Acquisition Agreement**" refers to the acquisition agreement dated June 29, 2020 among, *inter alios*, BP and the Company, as amended on July 3, 2020, October 12, 2020 and December 29, 2020, and as further amended from time to time;

- "**BP Petrochemicals**" and the "**Aromatics and Acetyls Businesses**" each refer to BP's global Aromatics and Acetyls businesses acquired by the Group pursuant to the BP Acquisition Agreement;

- "**Bridge Facility**" refers to the $2,450 million and €870 million senior secured bridge facility made available to INEOS Quattro Holdings UK Limited (formerly INEOS 226 Limited) and INEOS US Petrochem LLC pursuant to the Bridge Facility Agreement; the Bridge Facility was repaid and terminated on January 29, 2021;

- “**Bridge Facility Agreement**” refers to the bridge credit agreement dated as of July 31, 2020, as amended and restated from time to time, among, *inter alios*, INEOS Quattro Holdings UK Limited (formerly INEOS 226 Limited) and INEOS US Petrochem LLC, as borrowers and guarantors, the other guarantors from time to time party thereto, J.P. Morgan AG as Administrative Agent and Barclays Bank PLC as Security Agent;

- “**Clearstream**” refers to Clearstream Banking, *société anonyme*;

- “**CLP Regulation**” refers to the Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended;

- “**Collateral**” refers to the collateral securing the Senior Secured Notes and the loans under the Credit Facility Agreements (the “**Senior Secured Collateral**”) and the Senior Notes Collateral (as defined under “*Description of Certain Indebtedness—Senior Notes due 2026—Security*”), collectively;

- “**Company**” refers to INEOS Quattro Financing Limited, a direct subsidiary of the Parent;

- “**Credit Facility Agreements**” refers to the 2017 Term Loan B Credit Facilities Agreement and the 2020 Term Loan Facilities Agreement, collectively;

- “**Deloitte**” refers to Deloitte LLP, a member of the Institute of Chartered Accountants in England and Wales;

- “**Dollar Term Loan A Facilities**” refers to the $350 million 2023 Dollar Term Loan and 2025 Dollar Term Loan facilities made available to INEOS Quattro Holdings UK Limited (formerly INEOS 226 Limited) pursuant to the 2020 Term Loan Facilities Agreement, which facilities were repaid on May 31, 2022;

- “**Dow Jones Chemical Market Analytics**” refers to **Chemical Market Analytics, by OPIS, A Dow Jones Company** and its affiliates;

- “**DTC**” refers to the Depository Trust Company;

- “**ECHA**” refers to the European Chemicals Agency;

- “**EEA**” refers to the European Economic Area;

- “**Equity Bridge Contribution**” refers to the $1.0 billion contributed to the Group by the Parent’s immediate shareholder (funded by the Vendor Loan Notes) and used to bridge the financing of the BP Acquisition; the Equity Bridge Contribution was repaid in the form of a dividend to the Company’s shareholder using part of the proceeds of the 2026 Senior Secured Notes, the 2026 Senior Notes and the 2026 Term Loans (as defined under the caption “*Description of Certain Indebtedness—2020 Term Loan Facilities Agreement—Overview*”);

- “**EU**” refers to the European Union;

- “**EU ETS**” refers to European Union Emissions Trading Scheme;

- “**Euro Term Loan A Facilities**” refers to the €300 million 2023 Euro Term Loan and 2025 Euro Term Loan facilities made available to INEOS Quattro Financing Limited pursuant to the 2020 Term Loan Facilities Agreement; the 2025 Euro Term Loan facility was repaid on January 29, 2021 and the 2023 Euro Term Loan facility was repaid on May 31, 2022;

- “**Euroclear**” refers to Euroclear Bank SA/NV;

- “**GHG**” refers to greenhouse gas;

- “**Group**”, “**we**”, “**us**” or “**our**” refers to the Parent and its consolidated subsidiaries;

- “**Guarantor**” or “**Guarantors**” refers to the guarantors under the Indentures and the Credit Facility Agreements, including the Parent and certain of its subsidiaries;

- “**HSSE**” refers to health, safety, security and environmental;

- "**IFRS**" refers to International Financial Reporting Standards as adopted by the European Union;
- "**IHS Markit**" refers to IHS Markit Limited and its affiliates;
- "**Indentures**" refers to the 2026 Senior Notes Indenture, the 2026 Senior Secured Notes Indenture and the 2027 Senior Secured Notes Indenture, collectively;
- "**INEOS**" or "**INEOS Group**" refers to INEOS Limited and its consolidated subsidiaries;
- "**INEOS Industries**" refers to INEOS Industries Holdings Limited and not to any of its subsidiaries;
- "**INOVYN**" or "**INOVYN Business**" refers to INEOS INOVYN Limited and its consolidated subsidiaries;
- "**INOVYN Contribution**" refers to the contribution, which has been recorded in the Parent's financial statements at the historical carrying values of INOVYN's financial statements, to the Group of 94.9% of the shares of INOVYN Limited pursuant to the INOVYN Contribution Agreement; prior to the INOVYN Contribution, INOVYN was under common control with the Parent so in accordance with IFRS it has been treated as a transaction under common control and thus has been accounted for by recognizing the net assets of INOVYN Limited received at their historical carrying values;
- "**INOVYN Contribution Agreement**" refers to the contribution agreement dated July 24, 2020 among, *inter alios*, INEOS Group Investments Limited, INEOS Industries Limited, INEOS Industries Holdings Limited, INEOS Quattro Holdings Limited (formerly INEOS Styrolution Holding Limited) and INEOS Quattro Financing Limited (formerly INEOS Styrolution Financing Limited);
- "**INOVYN Securitization Program**" has the meaning given to such term under the caption "*Description of Certain Indebtedness—The INOVYN Securitization Program"*;
- "**INOVYN Senior Secured Term Loan B Facility**" means the €1,064.3 million term loan facility made available to INOVYN Finance plc pursuant to the INOVYN Senior Secured Term Loan B Facility Agreement, which was repaid in full and canceled on January 29, 2021;
- "**INOVYN Senior Secured Term Loan B Facility Agreement**" means the credit agreement dated as of May 13, 2016, among, *inter alios*, INOVYN Finance plc, as borrower, JP Morgan AG, as administrative agent and The Bank of New York Mellon, London Branch, as security agent, as amended and restated on November 10, 2016, May 10, 2017, November 14, 2017, November 9, 2018 and March 9, 2020;
- "**Intercreditor Agreement**" refers to the intercreditor agreement dated November 7, 2014, as amended and restated on September 30, 2016 and as further amended and restated on January 31, 2020 among, *inter alios*, the Parent, the Company, the administrative agent under each of the 2014 Term Loan Facilities Agreement and the 2020 Term Loan Facilities Agreement, the trustees under the Indentures and the Security Agent;
- "**Loans**" refers to the loans under the Credit Facility Agreements;
- "**LTBP**", "**Lotte**" or "**Lotte BP**" refers to Lotte BP Chemical Co.;
- "**Mexican Subsidiary**" refers to INEOS Styrolution Mexicana, S.A. de C.V.;
- "**mn MT**" refers to million metric ton;
- "**NexantECA**" refers to Nexant Ltd.;
- "**Notes**" refers to the Senior Secured Notes and the 2026 Senior Notes, collectively;
- "**NTP**" refers to the U.S. National Toxicity Program;
- "**OEM**" refers to original equipment manufacturer;
- "**Parent**" refers to INEOS Quattro Holdings Limited (formerly known as INEOS Styrolution Holding Limited);

- "**Parent Intermediate Holdco**" refers to any direct or indirect subsidiary of the Parent of which the Company is or becomes a direct or indirect subsidiary;

- "**Purchase Price**" refers to the consideration paid in connection with the BP Acquisition;

- "**REACH Regulation**" refers to the EU Regulation (EC) No 1907/2006 concerning the registration, evaluation, authorisation and restriction of chemicals, as amended;

- "**Securitization Programs**" refers to the Styrolution Securitization Program and the INOVYN Securitization Program;

- "**Security Agent**" refers to the security agent under the 2020 Term Loan Facilities Agreement, the 2014 Term Loan Facilities Agreement and the Indentures; on April 29, 2021, HSBC Corporate Trust Company (UK) Limited succeeded Barclays Bank PLC as Security Agent;

- "**Senior Secured Notes**" refers to the 2026 Senior Secured Notes and the 2027 Senior Secured Notes, collectively;

- "**Seveso II Directive**" refers to the EU directive on the control of major accident hazards;

- "**Styrolution Securitization Program**" has the meaning given to such term under the caption "*Description of Certain Indebtedness—The Styrolution Securitization Program*";

- "**Styrolution**", "**Styrolution Group"** and the **"Styrolution Business**" refers to the Parent and its consolidated subsidiaries prior to the acquisition of (i) INOVYN and its subsidiaries and (ii) INEOS Quattro Holdings UK Limited (formerly INEOS 226 Limited) and its subsidiaries;

- "**TCIR**" refers to total case incident rate;

- "**Term Loan A Facilities**" refers to the Dollar Term Loan A Facilities and the Euro Term Loan A Facilities, collectively, which have all been repaid;

- "**2014 Term Loan Facilities Agreement**" refers to the credit agreement dated as of November 7, 2014 among, *inter alios*, INEOS Styrolution Group GmbH and INEOS Styrolution US Holding LLC as borrowers and guarantors, the other guarantors from time to time party thereto, the administrative agent named therein (currently J.P. Morgan SE) and the Security Agent, as amended and restated as of March 30, 2017 and as further amended and restated as of November 22, 2017 and January 31, 2020, as further amended on January 29, 2021 and April 3, 2023, and as further amended from time to time;

- "**2020 Term Loan Facilities Agreement**" refers to the credit agreement dated as of July 31, 2020, among, *inter alios*, INEOS Quattro Holdings UK Limited (formerly INEOS 226 Limited) and INEOS Quattro Financing Limited (formerly INEOS Styrolution Financing Limited), as borrowers, and the administrative agent named therein (currently J.P. Morgan SE), as amended on December 21, 2020, as further amended by an incremental facility agreement dated as of January 29, 2021, as further amended on February 8, 2021, as further amended by an incremental facility agreement dated as of March 14, 2023[, as further amended on April [●], 2023,] and as the same may be further amended from time to time;

- "**Transitional Services Agreement**" or "**TSA**" refers to the agreement dated as of December 31, 2020, among BP International Limited and BP Amoco Chemical Company, relating to the transitional services to be provided following the BP Acquisition;

- "**USEPA**" refers to the U.S. Environmental Protection Agency; and

Unless otherwise stated, references to capacities of our facilities refer to the actual capacities of such facilities, which may be more or less than the nameplate capacities due to the current operating conditions and asset configuration of each facility. References to capacities of other producers refer to nameplate capacities.

All references to "MT" are to metric tons.

We have provided definitions for some of the industry terms used in this annual report in the "*Glossary of Selected Terms*" beginning on page G-1 of this annual report.

Rounding

Certain numerical figures set out in this annual report, including financial information presented in millions or thousands and percentages, have been subject to rounding adjustments and, as a result, the totals of such numerical figures in this annual report may vary slightly from the actual arithmetic totals of such information.

In this annual report, unless otherwise indicated: all references to the "**EU**" are to the European Union; all references to "**euro**" or "**€**" are to the lawful currency of the European Union; all references to the "**U.K.**" are to the United Kingdom; all references to the "**United States**" or the "**U.S.**" are to the United States of America; all references to "**U.S.$**," "**U.S. dollars**," "**dollars**" or "**$**" are to the lawful currency of the United States.

FORWARD-LOOKING STATEMENTS

This annual report includes "forward-looking statements," within the meaning of the U.S. Private Securities Litigation Reform Act of 1995 and the securities laws of certain other jurisdictions, based on our current expectations and projections about future events, including:

- raw material availability and costs, as well as energy and supply arrangements, including arrangements with principal feedstock suppliers, and our ability to pass increases in raw material prices and other expenses on to our customers;
- operational and other industry risks, including the risk of environmental contamination;
- the substitutability of other products for our products and regulatory initiatives that may create incentives for the use of substitute products;
- the outbreak of COVID-19 or other pandemics or epidemics and the response (or lack of response) of governments thereto;
- the Russian invasion of Ukraine;
- the highly competitive nature of our principal industries;
- the cyclical nature of our industries and their sensitivity to changes in capacity, demand and global economic factors;
- business interruption risks resulting from the actions of third parties;
- demand levels in emerging markets and the ability of regional producers to satisfy such demand;
- our and our customers' ability to borrow or raise capital;
- our ability to maintain key customer relationships;
- political, economic and legal risks associated with doing business in emerging markets;
- current or future requirements imposed by HSSE laws, including those related to waste management and air emissions, and the related costs of maintaining compliance and addressing liabilities;
- government safety regulations and/or public perceptions regarding our products, including those that relate to the potential classification of styrene as a carcinogen;
- existing and proposed government regulations to address climate change by reducing greenhouse gas emissions;
- our ability to comply with anti-corruption laws, economic and trade sanctions or other similar regulations;
- the adequacy of our insurance coverage;
- currency fluctuations and economic downturns in the countries in which we operate;
- our ability to implement our business, cost control and growth strategies;
- our ability to keep up with technological innovation and the increasing trend toward digitalization of our industry;
- our ability to maintain an effective system of internal controls;
- risks related to the destruction, ineffectiveness or obsolescence of our information systems;
- risks related to cyber security;
- our ability to retain key personnel and to attract highly-skilled individuals;

- our ability to consummate future acquisitions, integrate acquired businesses or achieve expected synergies from consummated acquisitions;

- the enforceability and validity of our intellectual property rights and the confidentiality of our proprietary information and trade secrets;

- risks related to litigation and other proceedings, including product liability claims;

- changes in tax laws or their application or increases in tax authorities' scrutiny of transactions;

- our ability to make necessary contributions to pension plans;

- relationships with our workforce and service providers;

- our substantial indebtedness which may affect our ability to service our outstanding indebtedness and operate our business;

- our ability comply with the terms and conditions under our Securitization Programs;

- interest rate risks;

- changes or uncertainty in respect of interest rate benchmarks;

- the incurrence of additional indebtedness at terms that may be more or less favorable than the terms of the Group's existing indebtedness; and

- other factors as described in this annual report, including factors set forth under "*Risk Factors*."

All statements other than statements of historical facts included in this annual report including, without limitation, statements regarding our future financial position, risks and uncertainties related to our business, strategy, capital expenditures, projected costs and our plans and objectives for future operations, may be deemed to be forward-looking statements. These forward-looking statements are subject to a number of risks and uncertainties, including those identified under the "*Risk Factors*" section in this annual report. Words such as "anticipate," "assume," "believe," "estimate," "expect," "intend," "may," "plan," "risk," "should," "will" and similar expressions or the negatives of these expressions are intended to identify forward-looking statements. Forward-looking statements contained in this annual report include, in particular (but are not limited to), the following: statements regarding our financial results for the year ended December 31, 2022, statements regarding the estimated impact of the COVID-19 pandemic and the Russian invasion of Ukraine, statements regarding our future cash flows and liquidity needs, statements regarding potential expansion plans, statements regarding expected future capacity of our facilities, including the joint venture with Sinopec, statements regarding safety, statements regarding the expected future financial and operating impacts of consummated acquisitions (including the Acquisitions), statements regarding expected cost savings in connection with the BP Acquisition, statements regarding expectations of industry growth and ISO certification targets and pledges made regarding levels of future recyclable content and other sustainability targets. In addition, from time to time we or our representatives, acting in respect of information provided by us, have made or may make forward-looking statements orally or in writing and these forward-looking statements may be included in but are not limited to press releases (including on our website), reports to our security holders and other communications. Although we believe that the expectations reflected in such forward-looking statements are reasonable, we can give no assurance that such expectations will prove to be correct. Any forward-looking statement speaks only as of the date on which it is made and we undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. All subsequent written and oral forward-looking statements attributable to us or to persons acting on our behalf are expressly qualified in their entirety by the cautionary statements referred to above and contained elsewhere in this annual report, including those set forth under the section entitled "*Risk Factors*."

The risks described in the "*Risk Factors*" section in this annual report are not exhaustive. Other sections of this annual report describe additional factors that could adversely affect our business, financial condition or results of operations. Moreover, we operate in a very competitive and rapidly changing environment. New risk factors emerge from time to time and it is not possible for us to predict all such risk factors, nor can we assess the impact of all such risk factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. Given these risks and uncertainties, you should not place undue reliance on forward-looking statements as a prediction of actual results.

TRADEMARKS AND TRADE NAMES

We own or have rights to certain trademarks or trade names that we use in conjunction with the operation of our businesses. Each trademark, trade name or service mark of any other company appearing in this annual report is the property of its respective holder.

HISTORICAL AND CURRENT MARKET AND INDUSTRY DATA

Historical and current market and industry data used throughout this annual report were obtained from internal company analyses, consultants' reports and industry publications. In particular, information has been provided by industry consultants NexantECA Limited. ("**NexantECA**"), Dow Jones Chemical Market Analytics Limited and its affiliates ("**Dow Jones Chemical Market Analytics**"), IHS Markit Limited and its affiliates ("**IHS Markit**") and Wood Mackenzie Ltd. ("**Wood Mackenzie**") and their respective affiliates. Industry surveys and publications generally state that the information contained therein has been obtained from sources believed to be reliable, but the accuracy and completeness of information contained therein is not guaranteed. While we accept responsibility for the accurate extraction and reproduction of such market data, we have not independently verified such market data and cannot guarantee its accuracy or completeness. In addition, certain statements in this annual report regarding the petrochemical industry, our position in that industry and our market share are based on internal company estimates, our experience and investigations of market conditions and our review of industry positions. We cannot assure you that any of the assumptions underlying those statements are accurate or correctly reflect our position in the industries. Similarly, internal company analyses, while believed by us to be reliable, have not been verified by any independent sources, and neither we nor any of the initial purchasers make any representation as to the accuracy of such information. While we are not aware of any misstatements regarding any industry or similar data presented herein, such data involve risks and uncertainties and are subject to change based on various factors, including those discussed under the "*Risk Factors*" section in this annual report.

FINANCIAL INFORMATION INCLUDED IN THIS ANNUAL REPORT

We have included in this annual report an extract from the INEOS Quattro Holdings Limited audited financial statements for the year ended December 31, 2022, prepared in accordance with IFRS.

RISK FACTORS

Risks Relating to Our Business and Industry

Our business may be negatively affected by increases in raw material prices and other expenses that we are unable to pass on to our customers, volatility in raw material and energy prices, our inability to retain or replace our key suppliers and supply chain disruptions.

Our margins are largely a function of the relationship between the prices that we are able to charge for our products and the costs of the feedstocks and raw materials and energy we require to make these products. In our Styrolution Business, we require, among other materials, benzene and ethylene to produce styrene, and we require styrene to produce styrene derivatives. In our INOVYN Business, the key feedstocks and raw materials upon which we depend are energy, ethylene, naphtha and salt. In our Aromatics Business, we require, among other materials, mixed xylene isomers and paraxylene, and in our Acetyls Business, we require, among other materials, methane, carbon monoxide and methanol. As a result, our margins depend significantly on the price of these feedstocks and raw materials, which have historically been volatile and many of which, including benzene, ethylene, naphtha, xylenes and methanol, have, in turn, correlated closely to prices of crude oil further up in the production chain. After a brief rise in prices in the first half of 2015, the price of oil continued to decline in the second half of the year. Prices rose during 2016 and continued to rise during 2017 and most of 2018, before falling again towards the end of 2018. Prices again rose in 2019, but fell significantly in early 2020 on the back of global uncertainties due to the impact of COVID-19 and OPEC's failure to agree production cuts but have been rising since 2021. Prices increased further and have become more volatile as a result of sanctions against Russia imposed in early March 2022. After having reached a peak mid-2022, prices have slightly declined since but, at the date of this report remain significantly above 2021 levels.

Feedstock prices may also be affected by changes in energy prices. For example, anti-fracking sentiment relating to increased shale gas production in North America and public perception of the impact of oil and gas production on the environment could have an impact on the future availability of shale gas. As a result, increasing energy costs could partially or fully set off expected decreases in ethylene prices in the region. Depending on market conditions, we may or may not be able to pass energy and feedstock price increases on to our customers.

Climate change and regulations related to climate change may also result in higher raw material and energy costs, higher operating costs or supply chain disruptions, due to extreme weather events, extreme temperatures, increased demand for limited resources or renewable fuel mandates, which may also impact profitability and customer retention. See "—*Existing and proposed regulations to address climate change through reductions of greenhouse gas emissions and restrictions on other air emissions, may cause us to incur significant additional operating and capital expenses or adversely affect demand for our products.*"

Additionally, our margins are affected by our ability to negotiate prices that are favorable compared to market averages. They are also driven by our plant, utilities and logistics costs, including electricity costs. Across each of our businesses, we buy electricity under a number of long-term contracts with multiple suppliers, some of which will expire in the next few years. Many of these long-term contracts do not have fixed prices and will fluctuate over the term of the agreement. Changes in regulations and governmental policy may also drive certain fluctuations in the prices of our inputs. While we attempt to match raw material and energy price increases with corresponding product price increases, our ability to pass on increases in the cost of raw materials and energy to our customers is, to a large extent, dependent upon our contractual arrangements and market conditions. There may be periods of time in which we are not able to recover increases in the cost of raw materials and energy due to our contractual pricing arrangements or to weakness in demand for, or oversupply of, our products. Specifically, timing differences in pricing between raw material and energy prices, which may change daily, and product prices, which in many cases are negotiated only monthly or less often, sometimes with an additional lag in effective dates for increases, have had and may continue to have a negative effect on profitability. Even in periods during which raw material and energy prices decline, we may suffer decreasing profits if raw material and energy price reductions occur at a slower rate than decreases in the selling prices of our products.

Significant volatility in raw material and energy costs tends to place pressure on product margins and working capital needs as sales price increases could lag behind raw material cost increases. Conversely, when raw material and energy costs decrease, customers may seek relief in the form of lower sales prices. Even where we are able to pass on raw material and energy price increases to our customers, timing differences between when we purchase raw materials and energy and when we sell our products have had and may continue to have a negative effect on our results of operations. We do not currently use derivative instruments to reduce price volatility risks on feedstock commodities, however in our Aromatics Business, financial instruments will be used if customers specifically request atypical pricing that introduces financial risks, and any such arrangements in the future may not successfully reduce volatility risks. In addition, some of our customers, in particular, in our INOVYN and Aromatics Businesses, take advantage of fluctuating prices by building inventories when they expect product prices to increase and reducing inventories when they expect product prices to decrease. Further, volatility in costs and pricing can result in commercial disputes with customers and suppliers with respect

to interpretations of complex contractual arrangements. Significant adverse resolution of any such disputes could also reduce our profitability.

Recently, we have seen increasing pressure on our supply chain due to several factors, including labor availability, global logistics and increasing energy prices, that are in part due to the impact of the COVID-19 pandemic and the Russian invasion of Ukraine on the global economy (see also "*—Outbreaks of disease—The Group's operations and financial results have been negatively impacted by the outbreak of COVID-19, and the continued global COVID-19 pandemic, and the outbreak of other contagious diseases, may have a material adverse effect on our business, results of operations financial condition and cash flows.*" and "*—Invasion of Ukraine—The ongoing military action between Russia and Ukraine could adversely affect our business, financial condition and results of operations.*"). If our suppliers are negatively affected by events beyond our control, including unforeseen public health crises, terrorist attacks, wars and other political instabilities, they could become unable to provide products and services as agreed, leading to follow-on consequences for our relationships with our customers, subcontractors and other third parties. In addition, sanctions imposed on Russia in connection with its conflict with Ukraine, Nordstream pipeline explosions and limitations on LNG imports can put severe pressure on gas supply, which we rely on for our production. Russia provides a significant proportion of European gas supply and is one of the largest global producers, putting pressure on regional and global markets. While this has been mitigated so far by the warm winter, an increase of European LNG import capacity, high storage levels and increased usage of coal, we cannot rule out future disruptions as demand increases.

Furthermore, during periods of high raw material prices, feedstock unavailability due to third party *force majeure* events or otherwise, oversupply of a particular product and/or lack of demand for any product, we may reduce production, idle a line, or discontinue production of certain materials. This could cause us to incur expenses relating to the idling and the restart of these facilities in addition to any losses incurred as a result of low demand or feedstock unavailability. In any given period, reduced demand or feedstock unavailability, and the ensuing facility idling or reduced production, could prevent us from meeting minimum, or break-even, production rates, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Certain of our plants rely on one or a limited number of feedstock suppliers. In certain cases, such feedstock is delivered to our plants via pipeline with no possibility of switching to alternative delivery models (*e.g.* vessel or truck) or to another supplier by pipeline and therefore we rely on a sole supplier. For example, in our Styrolution Business, our Sarnia SM plant currently uses one supplier of ethylene, which is delivered via pipeline. We similarly rely on single suppliers for a number of materials used in the Specialties business unit of our Styrolution Business. For example, our Dormagen plant currently uses one supplier of acrylonitrile, which is delivered via pipeline, our Ludwigshafen plant uses one supplier of styrene, and our SBC plant in Yeosu, South Korea, relies on a pipeline connection for styrene and butadiene with one supplier for each raw material. In our Aromatics Business, our Texas City site is integrated with the Marathon Oil refinery and currently sources a substantial portion of its feedstocks and utilities from Marathon.

In our Acetyls Business, we now procure all the methanol for our Hull site and Eastman's Texas City plant, which produces acetic acid sold under our profit sharing agreement, having previously been supplied by BP under a transitional basis. All of our joint ventures in Asia are co-located on partner sites and are dependent upon the partner for the supply of utilities, feedstocks and other services which allow the plant to operate. We have been unable to identify potential alternative sources for the supply of these utilities, feedstocks and services in the event that the joint venture partner is unable to supply them, without having to undertake extensive investments, which may not be possible. The methanol joint venture in Trinidad and Tobago receives its gas supply from NGC, the national gas company of Trinidad and Tobago. The ability of this joint venture to maintain operations relies on continued supply and the ability to renew the terms of the contract on terms that are viable. In our Aromatics Business, feedstock for our Texas City PX plant is predominately supplied by pipeline from the Marathon Refinery (although non-pipeline supply options from other parties do exist) and the majority of PX feedstock for our Cooper River PTA plant is supplied by vessel from Texas City, although options exist to increase dependency on third party supply should it be required. In some cases, we have to date been unable to identify potential alternative sources for single-supplier materials. Without extensive own investments in import logistics facilities and own tanks we cannot solve this single-source situation.

If any of our suppliers is subject to a major production disruption or is unable or unwilling to meet its obligations under present supply agreements or decides to terminate any credit line that it has granted to us or is otherwise unable to meet our quality, quantity and cost requirements, we may face supply interruptions or be forced to pay higher prices to obtain the necessary raw materials, and we may not be able to increase the prices of our finished products. Moreover, our efforts to secure alternative sources for our feedstocks, raw materials and other products could fail, and we could incur significant costs and our results of operations could be adversely affected as a result. Therefore, increases in raw material prices or interruptions of credit or supply or our inability to negotiate supplier contract extensions on favorable terms could increase pressure on our margins and reduce our cash flows, which could adversely affect our business, financial condition and results of operations. In addition, we may be unable to fill our customers' orders on a timely and cost-effective basis or in the required quantities, which could result in order cancellations, decreased revenues or loss of market share and damage to our reputation.

We have not entered into formal written contractual or volume arrangements with certain suppliers. Accordingly, we have no contractual remedy if we suffer economic loss as a result of a cessation of supply or change in the terms of supply by such parties. These business relationships could therefore terminate at any time. In addition, most of our supplier contracts will be expiring in the next two to three years. In the Acetyls Business, example of these type of agreements are the methanol supply agreements in place for 2022, which were successfully transitioned during 2021 from the transition agreement with BP and are now bought direct. Additionally, in our Aromatics Business, a multi-year, multi-product feedstock purchase and byproduct sales agreement with the Marathon Refinery expired in January 2023. A new three year contract has been agreed between the parties that ensures the continuation of both parties beneficially sharing in the spread between chemical and gasoline value of raw materials for the manufacture of PX. If one of the suppliers with whom we source a large percentage of our materials decides not to continue to engage in business with us or increase the fees that they charge, we may suffer material disruptions to continuity of supply and our ability to meet demand.

Our facilities are subject to operational and other industry risks, including the risk of environmental contamination, which could have a material adverse effect on our operating results.

Our operations are subject to hazards inherent in chemicals and plastics manufacturing and the related generation, use, storage, transportation and disposal of feedstocks, products and wastes, including but not limited to:

- pipeline leaks and ruptures;
- fires and explosions;
- accidents;
- severe weather and natural disasters (including hurricanes and other high-wind events, floods, droughts or other adverse weather, which events could become more common as a result of climate change);
- mechanical and equipment failures (including due to inadequate maintenance);
- unplanned production or power outages (including blackouts) and unscheduled downtimes;
- transportation interruptions and accidents;
- unpermitted discharges or releases of toxic or hazardous substances or gases;
- other health, safety, security and environmental hazards; and
- sabotage or terrorist attacks (including due to access to facilities by unauthorized personnel due to insufficient security checks).

These hazards can cause, and have caused from time to time, personal injury and loss of life, catastrophic damage to, or destruction of, property and equipment and environmental contamination or other damages, and may result in a suspension of operations and the imposition of civil and criminal penalties, including penalties and damage awards.

We may incur significant costs to address any incidents or accidents, including to resolve claims or enforcement proceedings that are brought against us in connection with such an incident or accident, which can impact our operating results, even if most or all of the costs of such events are covered by insurance. For example, our Styrolution Business had to declare an event of *force majeure* relating to styrene, ABS, polystyrene and ASA produced at our sites in Texas City, Bayport, Altamira, Decatur and Channahon after winter storm Uri in February 2021, which led to a widespread power outage in the Houston area and our styrene facilities in Bayport and Texas City experienced an emergency shutdown. Bayport and Texas City facilities had to repair extensive damage and restarted in early April 2021. Styrene availability in the U.S. was severely reduced as other producers were also affected. Accordingly, polystyrene, ABS and ASA production at our facilities was curtailed. The *force majeures* were lifted on May 6, 2021 for styrene monomer, June 4, 2021 for polystyrene and December 17, 2021 for ABS and ASA.

In March 2021, our Aromatics Business's PTA plant in Geel suffered a bellows failure which caused an unplanned shutdown. On restart from the unplanned shutdown a failure of the reactor agitator shaft caused an extension to the unplanned outage with the plant restarting in mid May 2021. Due to these events *force majeure* was called with reduced volumes supplied to customers until the *force majeure* was lifted in May 2021. During the outage, the opportunity was taken to complete part of the planned turnaround ("TAR") activities scheduled for the third quarter of 2021. This allowed the full TAR outage to be deferred into 2022, providing the opportunity to catch up on some of the volume lost during the outage. More generally, the Aromatics Business operates plants in the U.S. Gulf Coast and in Zhuhai which can experience severe weather events that can limit operations either directly or because of the impact of such events on key suppliers of

raw materials and utilities. In February 2021, there was an adverse weather event resulting in a unseasonably extreme freeze in the Houston area which resulted in the full shutdown of our Texas City PX production facility. The plant was restarted once freeze related repairs had been completed and the units were fully on stream again by the end of March 2021. In December 2022, unusually low freezing temperatures affected both our Texas City site and the PTA plant at Cooper River. As a consequence of the adverse weather, the Cooper River site lost electrical power and had to shut down with a *force majeure* declared on PTA deliveries. Our ability to operate our site facilities in certain areas could also be impacted by increased extreme weather events relating to climate change. We may also face lost revenue or higher expenses related to climate change events (*e.g.* higher insurance costs, uninsured losses, diminished customer retention or new opportunities in areas subject to extreme weather or resource availability constraints).

Our Acetyls Business has declared a *force majeure* on a number of occasions in recent years due to issues at our own plants or those operated as joint ventures. During 2022, we declared a *force majeure* in the U.S. following issues with the third-party CO plant. This was declared on May 11, 2022 and remained in place until October 31, 2022. The issue on the plant related to a water leak in the Steinmueller boiler, that originally caused the plant to operate at lower rates and then required a complete shutdown to be repaired.

Unforeseen transportation interruptions can also impact our operating results. For example, on September 5, 2017, our Styrolution Business declared an event of *force majeure* with respect to PS and Terluran ABS deliveries to Italy and Switzerland after the rail tracks at Rastatt, Germany, were severely damaged due to tunnel construction work and rail traffic on such route was stopped. Almost all of our cargo shipments from our European production sites to customers located in Italy and Switzerland are shipped via rail on the route through Rastatt, Germany, and as a result our shipments of PS and Terluran ABS products to customers located in such countries were severely curtailed for approximately two months. In addition, we have faced inbound transportation interruptions due to low water on the river Rhine, lock outages in the U.S., most notably on the Ohio and Mississippi rivers, and fog/storms in shipping channels. The costs to address such operational risks or hazards, including the loss or shutdown over an extended period of operations at any of our major operating facilities could have a material adverse effect on our business, financial condition and results of operations.

The availability of substitute products and regulatory initiatives that may encourage the use of such substitute products may adversely affect demand for certain of our products and overall revenue and operations.

Substitutes may affect the sale of our commodity products and production advances for competing products or price changes in raw materials and products could result in declining demand for our products as our customers switch to substitute products.

In our Styrolution Business, our relevant commodity products include SM, PS and ABS Standard. For example, while we believe that the risk of substitution of SM as an input is low, SM demand is affected by the availability of substitutes for styrene based plastics and synthetic rubber products. Additionally, the PS market has come under pressure due to competition from alternative polymers, particularly PP and PET (including recycled PET), as well as other materials such as PLA and paper, which can be used in packaging applications as substitutes for PS. Switching costs are relatively low as modern conversion lines can generally be switched between polymers, though investment may be required to process PET, and in some cases, to process PP. According to NexantECA, PS prices are generally expected to remain higher than the prices of its substitutes due to high benzene prices, and demand for PS is expected to remain sensitive to the price differential between PS and PP. ABS faces substitution risks as well. Certain lower end applications can replace ABS with less expensive materials (such as PP or PS), and certain higher end applications can replace ABS with more technical and more expensive plastics such as PC. As a result, it is difficult to protect our market position for these products by product differentiation. Additionally, we risk undermining our competitive position and favoring substitution every time we are forced to increase the price of our commodity chemicals. Significant substitutions in our markets may have a material adverse effect on our business, financial condition and results of operations.

In the INOVYN Business, our main commodity products are general purpose PVC, ECH and caustic soda. PVC, has attracted significant attention from environmental advocacy groups and government regulators, and some EU member states and the European Parliament have sought to increasingly regulate its use, marketing, distribution, recycling and disposal. Because many regulations relating to PVC affect our operations and the type of PVC products we produce, restrictions on PVC manufacture, use or disposal could have a material adverse effect on our business, financial condition, results of operations and cash flows. Such regulations could also adversely affect perceptions of and demand for our products even if they do not impact the manufacture of our products directly. In addition, factors such as environmental and health concerns relating to the consumer use of PVC or chlorine-containing products have in the past caused, and could in the future cause, a shift in market demand toward alternative polymer-based products and certain natural products such as timber, metals and natural fibers. We may find that our competitors who specialize in such alternative products are in a more advantageous commercial position if further consumer substitutions should take place. Should substantial customer substitution occur, it could have a material adverse effect on our business, financial condition, results of operations and cash flows. In our Aromatics Business, in Europe in particular, the increase in the availability of recycled PET and new technologies to increase recycled content in packaging, driven in part by legislative mandates and in part by brand owner

commitments to customers that surpass regulatory requirements, has the potential to moderate growth or even reduce demand for virgin product. This is likely to slow growth rates in PTA versus historical numbers and in the extreme, reduce the absolute demand for PTA in the region. In addition, PET is susceptible to substitution. Although, historically, PET is the cheapest of the major polymers and is also the most recyclable, we have seen substitution from other polymers such as PE, PP and PS into PET in the past five years.

In addition, globally we are seeing a trend whereby various jurisdictions have adopted or proposed legislation or regulatory initiatives banning, taxing, or otherwise regulating plastics, including single-use plastics which has and will continue to affect the demand for our Styrenics commodity products, in particular PS, by requiring or encouraging our customers to use substitutes that are less affected by such laws and regulations. For example, Directive (EU) 2019/904 on the reduction of the impact of certain plastic products on the environment of the European Parliament (the "**EU Parliament**") and the Council of the European Union (the "**EU Council**") (the "**Single-Use Plastics Directive**") impacts the use of certain plastic products, including styrene-based plastics and synthetic rubber products produced by our customers using our products, in particular PS. The Single-Use Plastics Directive may cause our customers to become subject to restrictions on placing on the market of certain single-use plastic products, extended producer responsibility schemes requiring producers to cover the costs of collecting, transporting, treating and cleaning up single-use plastics, obligations to finance consumer awareness campaigns and product marking requirements, among other requirements. EU Member States were required to transpose the Single-Use Plastics Directive into national law by July 3, 2021, with the deadlines for implementing certain provisions phased in during 2023 and 2024. The scope of such implementing laws and regulations may generally be broader than the scope of the Single-Use Plastics Directive. As a result, the Single-Use Plastics Directive and national implementing laws and regulations may significantly increase the production costs and regulatory burden of our customers, decreasing demand for our commodity products used in plastics production. In India, the central government announced a nationwide ban on certain single-use plastics, which took effect from July 1, 2022. Furthermore, in Mexico, certain local governments have approved legislation that limits the use of single-use plastics in cities such as Mexico City, where such limitations have been in force and effect since January 2020. In the U.S., numerous states have also approved laws or restrictions on single-use plastics or foam products, and there has been a significant increase in such laws and regulations in recent years. We expect that more jurisdictions will continue to adopt such bans, taxes, and other laws and regulations over time, and that existing laws and regulations will become more stringent over time. If demand for our products were to decrease due to such regulatory measures and their impacts on our customers, our business, financial condition and results of operations could be materially adversely affected.

Outbreaks of disease—The Group's operations and financial results have been negatively impacted by the outbreak of COVID-19, and the continued global COVID-19 pandemic, or the outbreak of other contagious diseases, may have a material adverse effect on our business, results of operations financial condition and cash flows.

Around the world, governments have been taking measures since 2020 in response to the COVID-19 outbreak, including imposing quarantines, vaccine requirements and travel restrictions and closures of various institutions; additional measures may also be imposed in response to new variants of the SARS-CoV-2 virus that causes COVID-19. The effects of the COVID-19 pandemic, including such governmental actions, have resulted in significant disruptions and uncertainty in economic activity around the world. The duration of the COVID-19 pandemic and how much more extensive it may become is still unclear, including in light of the recent increase of cases in China. Despite the availability of vaccines, governments around the world have imposed and may continue to impose restrictions. In addition, the lifting of restrictions could make it more difficult to contain the SARS-CoV-2 virus if new variants emerge.

The adverse impacts the Group has or may experience due to COVID-19 or future contagious diseases or global health pandemics include, but are not limited to:

- infections and quarantining of the Group's employees in areas in which the Group operates;

- the Group's ability to satisfy the terms of its contracts with customers in a timely or appropriate manner;

- cancellations, delays or downsizing of projects by the Group's customers;

- our customers, service providers or suppliers experiencing financial distress, filing for bankruptcy protection or insolvency, going out of business, or suffering disruptions in their businesses;

- weaker demand in all regions for some of our core products;

- logistical complexities in, and disruptions to, personnel travel and equipment and supply delivery to certain locations;

- the need to introduce measures to reduce the Group's costs and capital expenditure including reduction of its global workforce, implementation of a hiring and salary freeze and executive pay cuts, a review and deferral of the timing of planned turnarounds and a reduction in non-essential capital expenditures;

- increased risk of impairments as a result of the effects of the COVID-19 pandemic on the Group's profitability;

- liquidity challenges, including the inability to refinance debt, obtain additional financing or sell assets on commercially reasonable terms, if at all, exhaustion of borrowing capacity and the need to implement liquidity preservation measures, as well as impacts related to delayed customer payments and payment defaults associated with customer liquidity issues and bankruptcies;

- structural shifts in the global economy and its demand for petrochemical products as a result of changes in the way people work, travel and interact, or in connection with a global recession or depression;

- the risk that the Group's insurance coverage is not likely to cover losses associated with pandemics like COVID-19 under its policies; and

- cyber security issues, as digital technologies may become more vulnerable and experience a higher rate of cyberattacks in the environment of remote connectivity due to stay-at-home orders.

Although we have experienced no significant impact from the COVID-19 pandemic in 2021 and 2022 and do not currently expect any impact in 2023 and beyond, the Group's operations and financial results were negatively impacted by the COVID-19 pandemic in 2020 and any worsening of the current situation or the occurrence of new disruptions could have an adverse effect on our business, liquidity, financial condition and results of operations.

The COVID-19 pandemic has had significant impacts on the financial markets. The associated principal risks to us as a result of this volatility in the financial markets include weaker currencies and the liquidity risk associated with potential increases in borrowing costs and the availability of debt financing. The economic impact of COVID-19 and of any future contagious diseases will depend on the continuing spread of the outbreak and the responses of the authorities and the global community. Although the Group has taken various measures as of the date of this annual report to address the impacts of COVID-19, we can give no assurance that these or other measures implemented in the future will be sufficient. The COVID-19 situation and any resurgence thereof is dynamic, and updates on travel restrictions, shutdowns of non-essential businesses and shelter-in-place/stay-at-home orders are continually evolving. The extent of the COVID-19 outbreak's continued effects and any future pandemic's impact on the Group's operational and financial performance will depend on future developments, including the duration, spread and intensity of the outbreak and other variants and the government measures implemented in response, or whether widespread shutdowns return, all of which are uncertain and difficult to predict considering the rapidly evolving landscape. To the extent the COVID-19 pandemic or any future pandemic adversely affects our business, prospects, financial condition and results of operations, it may also have the effect of heightening other risks described in this annual report.

Invasion of Ukraine—The ongoing military action between Russia and Ukraine could adversely affect our business, financial condition and results of operations.

On February 24, 2022, Russian military forces launched a military action against Ukraine, which has resulted in sustained conflict and disruption in the region. Although we do not have operations in Belarus, Russia or Ukraine, revenue generated in these countries is not material to the Group and, to date we have not experienced any material disruption to our operations, the length, impact and outcome of the ongoing military conflict in Ukraine is highly unpredictable, this conflict could lead to significant market and other disruptions, including significant volatility in energy and other commodity prices, financial markets, supply chain disruptions and changes in consumer or purchaser preferences, as well as increases in cyberattacks and espionage.

See "*—Our industries are cyclical, and global economic factors, including risks associated with economic recessions and our consumers' access to credit, as well as changing market capacity, demand and prices may negatively affect our products' prices, reduce our operating margins and impair our cash flows.*"

Russia's annexation of Crimea, recognition of two separatist republics in the Donetsk and Luhansk regions of Ukraine and subsequent military action against Ukraine have led to sanctions being levied by the United States, the European Union, the United Kingdom, Canada, Switzerland, Japan and other countries against Russia, Belarus, the Crimea, Zaporizhzhia and Kherson regions of Ukraine, the so-called Donetsk People's Republic and the so-called Luhansk People's Republic, including, among others, the removal of certain Russian financial institutions from the Society for Worldwide Interbank Financial Telecommunication (SWIFT) payment system, which can significantly hinder the ability to transfer funds in and out of Russia. The situation is rapidly evolving as a result of the conflict in Ukraine, and the United States,

the European Union, the United Kingdom and other countries or jurisdictions may implement additional sanctions, export controls or other measures against Russia or other countries, regions, officials, individuals or industries in the respective territories. Such sanctions and other measures, as well as any potential responses from Russia or other countries to such sanctions, tensions and military actions, could adversely affect the global economy and financial markets and could adversely affect our business, financial condition and results of operations. For further details on sanctions see "*—We are exposed to the risk of violations of anti-corruption laws, economic and trade sanctions or other similar regulations*."

While, to date, we have been able to manage the significant increase in energy prices caused by the conflict, by passing that on to customers through higher prices, we are actively monitoring the situation in Ukraine and assessing its impact on our business. We have no way to predict the progress or outcome of the conflict in Ukraine or its impacts in Ukraine, Russia or Belarus as the conflict, and any resulting government reactions, are rapidly developing and beyond our control. The extent and duration of the military action, sanctions and resulting market disruptions could be significant and could potentially have substantial impact on the global economy and our business for an unknown period of time. Any of the abovementioned factors could affect our business, financial condition and results of operations. Any such disruptions may also magnify the impact of other risks described in this annual report.

Significant competition in our principal industries may adversely affect our competitive position, revenue and overall operations.

The principal industries in which we operate are highly competitive.

For example, in our Styrolution Business, the demand for styrene and its derivatives is largely driven by the demand for plastics and synthetic rubber production, both of which are relatively mature markets. While we currently have significant market share with respect to our primary products, there are a number of global and regional producers that compete with us, including large competitors in North America, Europe and Asia. Due to the commodity nature of many of our products, competition in the styrenics industry is based primarily on price and, to a lesser extent, on product consistency, supply reliability and customer service. Customers who purchase commodity products have the ability to switch suppliers with relative ease, and customers who purchase specialty products may have the ability to choose among several approved suppliers; as a result, customers may be able to switch suppliers without much notice and without incurring significant costs. Although we believe we are a low-price producer with a variable cost base, other producers may have significantly greater financial and other resources than we have, which means they may be better able to withstand changes in market conditions.

For styrene and PS in our Styrolution Business, we also face increasing competition from Middle Eastern and Asian producers. Producers in the Middle East benefit from low-priced ethylene feedstock due to an abundant crude oil and natural gas supply and have taken steps to forward integrate their styrene businesses by establishing new derivatives capacity. More importantly, significant styrene and PS capacity is being added in China to meet growing demand, which is leading to a significant reduction in utilization rates in Asia for the coming years until demand has caught up with the additional capacity. This is increasing competition and exports from Asian producers to Europe and making styrene exports from the traditionally export oriented U.S. to Asia and Europe less attractive. Accordingly, these changes can suppress prices and adversely affect our business, financial condition, results of operations and cash flows. China is the largest PS market in the world and the only significant market next to India where demand is still growing.

For ABS in our Styrolution Business, Asian producers are some of the world's largest and are able to exploit significant economies of scale. The Asian share of global capacity is more than 80%. We expect capacity to continue to increase mainly in China where new world scale facilities have been announced or are coming on stream (*e.g.*, Chimei, LG Petrochina as well as our 600 kiloton facility currently being built in Ningbo (the latter being part of our newly established joint venture arrangement with Sinopec)). Asian (in particular South Korean and Taiwanese) ABS producers have achieved a foothold in the Americas and the EMEA region through structural import flows. For example, the European Commission signed a free trade agreement with South Korea in 2010 designed to eliminate or phase out most tariffs, including in particular those on ABS imports into Europe. In addition, duties for South Korean ABS to the U.S. are being reduced in a stepwise process. Subsequent to the conclusion of such free trade agreement, an increased amount of ABS imports came to Europe and North America from South Korea and Taiwan. This arbitragae applies pressure from large Asian producers on ABS Standard margins in all regions. As ABS markets have grown in all regions and supply chains were disrupted, Western European and U.S. producers have been able to enjoy high utilization rates in 2021. After the stabilization of the supply chains in 2022, the respective price gaps between the regions closed. In 2022, Asia accounted for more than 80% of global ABS capacity. We expect limited ABS capacity growth in Western Europe or North America and only through converserion of production lines or debottlenecking of existing plants. As an example, we have converted one of our polystyrene lines at the Wingles, France, site to manufacture ABS. The pressure on our margins and our potential loss of market share resulting from this and other instances of trade liberalization—and from intense and increasing competition generally—could adversely affect our business, financial condition, results of operations and cash flows. See "*Business—Competition*".

In our INOVYN Business, the markets for PVC, caustic soda and chlorine derivatives such as ECH and chloromethanes are mature in Europe and there are several manufacturers that compete with us. Some of our competitors are subsidiaries or divisions of large chemical companies, including Dow Inc.; Blue Cube (Olin Corp.); Kem One Holdings SAS; Nobian; Westlake Chemical Corp (Westlake Vinnolit GmbH & Co. KG and former Hexion Epoxy business); BorsodChem Zrt (Wanhua Chemical Group); Vestolit GmbH (Orbia Advance Corp.); Shin-Etsu Chemical Co., Ltd; VYNOVA; Hexion; Spolchemie; Anwil SA; Covestro AG and Ercros SA. Competition for PVC, caustic soda and ECH sales is based mainly on price. Although we are a low-cost producer with a track record of generating cash flow through cyclical downturns, other manufacturers may have significantly greater financial and other resources than we do and may be able to better withstand changes in market conditions. Moreover, we may not have sufficient financial resources compared to our competitors to continue making investments in our manufacturing facilities, or for product development.

Producers of VCM and PVC in North America and the Middle East benefit from low-priced ethylene feedstock (due to abundant crude oil and gas supply) and lower energy costs. Since 2013, PVC imports into the European Union have increased significantly from North America (U.S. and Mexico), Egypt and South Korea. North American producers have also increased their presence in the European market following recent acquisitions in Europe. Chinese producers, which currently produce VCM and PVC principally to meet internal consumption demands, are some of the world's largest producers and are able to exploit very significant economies of scale although they lack advantaged raw materials and are not as competitive as North American or Middle Eastern producers. Although the Middle East currently lacks PVC capacity and is a net importer, if significant new PVC capacities were to be developed based on competitive raw materials, such as U.S. shale gas, and these PVC producers sought to compete directly against us in our European and target export markets, the resulting pressure on our margins would adversely affect our business, financial condition, results of operations and cash flows. Imports of caustic soda from the U.S., Egypt and the Middle East have also increased in recent years.

In Aromatics Business, no region enjoys a material structural cost advantage as raw materials and energy prices are closely linked to the underlying value of crude oil and transportation fuels. However, a significant number of new world scale PX and PTA facilities, primarily in China, which enjoy economies of scale, are being commissioned. This will reduce the price of PX relative to its underlying gasoline value putting pressure on facilities in the western hemisphere and North America in particular that extract value from the Aromatics supply chain by upgrading gasoline components such as mixed xylenes into PX for use as feedstock in the production of PTA. Although the Aromatics Business's facility in Zhuhai China is a merchant buyer of PX and could potentially benefit from the trend, our European and North American operations, which operate mixed xylene upgrading facilities, risk experiencing downward pressure on margins.

Similarly, in our Acetyls Business we face growing competition in each region, driven by increasing regional trade flows and both U.S. and Asia producers seeking to sell out their plants as local market demand changes. Competitors in the U.S., the Middle East and China may from time to time enjoy advantaged feedstock positions in coal and natural gas, and others are integrated into methanol and synthesis gas. While the Acetyls Business has a strong technology position, the feedstock advantages can off-set this. Our European business has seen specific competitive pressures due to the high gas price in the United Kingdom in 2021 and 2022, which has disadvantaged our plant in the United Kingdom relative to other regions. Further, competitors may also benefit from economies of scale and downstream integration. Global utilization rates will change as new acetic acid capacity is built primarily in the U.S. on the back of low cost gas and in China where acetic acid economics rely on low coal prices which are unique for the country. India, a large import market for acetic acid, has no significant domestic production but were this to change, then imports into India would fall, putting pressure on the available supply in the Asian and European market.

While we aim to operate as a low-cost producer in our industries and are focused on reducing our fixed and variable cost base across our production chain, there may be improvements in the cost competitiveness of other manufacturers relative to us or in the performance properties of substitutable products, which could adversely affect the demand for, and prices of, our products, as well as our profitability. Similarly, as discussed below, we operate in a regulated industry, and certain of our competitors may be better positioned with respect to applicable requirements, or able to respond to changes in regulation more quickly or effectively than we are. For instance, the EU Emissions Trading System ("**EU ETS**") regulations governing greenhouse gas ("**GHG**") emissions have been implemented at the national level in several EU member states, and the EU member states in which we operate may require us to purchase more emissions allowances than our competitors located in other EU member states, thereby driving up our costs or putting us at a competitive disadvantage. The UK Emissions Trading Scheme, which replaced the EU ETS in the United Kingdom, operates on a similar basis and is relevant for our UK operations.

Moreover, certain of our products compete with other materials in the marketplace, some of which may follow different economic cycles and become more competitive. Our businesses could be adversely affected by regulations applicable to our products, negative public perceptions of our products or the substitution of our products.

In addition to future trade agreements entered into by the U.S. or the European Union, tariffs on imports from the jurisdictions in which we manufacture our products could also lead to increased competition from imports and lower domestic prices. For example, since 2018 and 2019, the U.S. has imposed 25% tariffs on a variety of imports from China

and subsequently implemented tariffs on additional goods from China. Such tariffs could, in particular, negatively affect demand for our customers' products that are produced in China and sales from China on the re-export market of our own ABS and PS products in our Styrolution Business and our joint ventures' acetic acid products in our Acetyls Business. In the Acetyls Business, acetic acid is generally consumed within the Chinese and other Asian markets, however the products downstream of the Acetyls Business may be exported outside of these markets and therefore, any tariffs imposed on downstream businesses could potentially negatively impact our business. Further, in response to the U.S. tariffs, China imposed a tariff on imports of PVC into China which impacted U.S. producers. These tariffs and related trade tensions have resulted in uncertainty in the global economy, reducing confidence and growth. Future actions of the U.S. administration and that of other governments, including China, with respect to tariffs or international trade agreements and policies remain unclear. The escalation of a trade war, tariffs, retaliatory tariffs or other trade restrictions on products and materials imported by us into China may significantly hinder our ability to provide our products to customers in China or other affected locations. Such developments may result in a decrease in demand for our products as well as delays in payments from our customers. If any such tariffs or trade restrictions were to disproportionately affect our products as compared to those of our competitors, our business, financial condition, results of operations and cash flows could be materially adversely affected. See "*—As a result of our international operations, we are exposed to currency fluctuation risks as well as to regulatory and local business risks in several different countries that could adversely affect our profitability*."

Our industries are cyclical, and global economic factors, including risks associated with a recession and our consumers' access to credit, as well as changing market capacity, demand and prices may negatively affect our products' prices, reduce our operating margins and impair our cash flows.

Our revenue is primarily attributable to the sale of SM, PS, ABS Standard and Specialties in our Styrolution Business, PVC, caustic soda and chlorine derivatives in our INOVYN Business, PTA in the Aromatics Business and acetic acid and acetic anhydride in our Acetyls Business. Certain of our products, including SM, certain grades of PS and ABS Standard, PVC, ECH, caustic soda, PTA, acetic acid and acetic anhydride, are commodity chemicals. The prices and margins of these commodity chemicals have historically been cyclical and sensitive to relative changes in, among other factors, global and regional capacity, supply and demand levels, the availability and price of raw materials and feedstocks and general economic conditions. Across these industries, cycles are generally characterized by periods of high demand or decreased supply, leading to high operating rates and margins, followed by periods of oversupply resulting primarily from either significant capacity additions or lower demand, leading in turn to reduced operating rates and lower margins.

Historically, prices of many of our raw materials have fluctuated significantly as a result of factors such as general global economic prospects, fluctuations in oil prices and production constraints on the part of our suppliers. While we attempt to match raw material price increases with corresponding product price increases, our ability to pass on increases in the cost of raw materials to our customers is, to a large extent, dependent upon market conditions. There may be periods in which we are not able to recover increases in the cost of raw materials immediately due to our contractual arrangements or to weaknesses in demand for, or oversupply of, our products. Under unfavorable market conditions, it may take a number of months to recover the raw material cost increases.

In our Styrolution Business, supply and demand in the styrenics industry is driven by product prices, the availability and price of substitute products, as well as general economic conditions, including GDP growth and growth of core industries that consume styrenics. Demand is also impacted by changes in consumer spending and confidence because many of our products are used as inputs in the manufacturing of consumer end products in the electronics, healthcare, household, automotive, construction and packaging sectors. Adverse economic conditions can affect consumer and business spending generally, which would result in decreased demand for goods that incorporate our products and have an adverse effect on our results of operations. As a result, our financial results are substantially dependent upon the overall economic conditions in the U.S., the European Union, China and the rest of Asia. An extended recession in any of these locations or globally—or public perceptions that result in declining economic conditions—could substantially decrease the demand for our products and adversely affect our business. Furthermore, the packaging industry has experienced significant decline in recent years, particularly in Europe and North America, as recycling and sustainability concerns have risen and led to single use plastic restrictions in multiple jurisdictions. See "*—The availability of substitute products and regulatory initiatives that may encourage the use of substitute products may adversely affect demand for certain of our products and overall revenue and operations.*" Our results could be materially adversely affected if we are unable to adapt to changes in consumer preferences and increase our presence in other end user sectors. See "*—We may be unable to implement our business, cost control and growth strategies*."

In our INOVYN Business, supply and demand in the PVC and caustic soda industries is driven by product prices, global and regional capacity, the availability and price of substitute products, as well as general economic conditions, including GDP growth and growth of core industries that consume those products. Following the global economic crisis of 2008, European S-PVC demand dropped approximately 25% from the peak levels of 2007 and the size of the market has not fully recovered to this day. European S-PVC demand was stable between 2014 and 2019, but PVC spreads over ethylene and operating rates were higher than in the preceding period, also due to various plant closures that had taken place in the

industry between 2008 and 2014. As a result of the COVID-19 pandemic, demand was severely impacted in the second quarter of 2020 but experienced a swift recovery thereafter in the second half of 2020, 2021 and the first half of 2022, accompanied by record margins. The war between Russia and Urkaine and the ensuing energy crisis in Europe resulted in very weak European S-PVC demand in the second half of 2022, however, with plant operating rates falling to levels last seen during the global economic crisis in 2008. In the ChlorVinyls industry, an economic downturn typically causes PVC demand to fall. As a result, less chlorine is produced for PVC production, and therefore less caustic soda is available as a by-product. As a result of the decreased supply of caustic soda, the price of caustic soda tends to rise. Typically, six to nine months after an economic slowdown begins, and once the effects of the economic slowdown move beyond the construction sector and reach general industrial production levels, caustic soda demand falls along with prices. Typically, during periods of economic recovery, the reverse process occurs with the anticipated economic recovery spurring construction activity, which is then subsequently followed by increased production levels. In addition, during periods of low demand for our products in the markets that we target, we may be required to export our products to other markets more than we would otherwise, such as Asia and in particular India and Turkey. Our margins on such exports may be significantly lower than our margins on sales in our target markets. The major factor reducing the margins is the high transportation costs associated with exporting the product. Additionally, the prices that customers outside of Europe pay tend to be lower than those charged in Europe, because the consumers of exports are usually buying the product as the marginal tranche of their overall requirements and will generally buy at the lowest prevailing price available. The markets for some of our other INOVYN products, including chloromethanes, allylics, ECH and chlorinated paraffins, have also experienced alternating periods of tight supply, causing prices and margins to increase, followed by periods of weak demand, resulting in oversupply and declining prices and margins.

Global demand for PTA had grown by approximately 5% per year for the last five years prior to the year 2020 which was affected by the COVID-19 pandemic. This trend inevitably triggered a strong but uneven supply response that led and will continue to lead to periods of structural over-supply, which may be quite significant. We believe that our Aromatics plants are typically low-cost operators, but during times of over-supply our plants are likely to experience margin pressure while less competitive assets may be forced to close. The Aromatics Business is currently facing increasing competition from mainly Asian producers, primarily in China. China is likely to become a greater exporter of PTA, competing with traditional exporters like South Korea and Taiwan in both regional and global markets. Demand for PTA is also impacted by changes in consumer spending and confidence because many of our products are used as inputs in the manufacturing of consumer end products such as textiles, apparel, household, automotive, construction and packaging products.

In our Acetyls Business, the markets for acetic acid and anhydride are cyclical and exposed to external factors. The markets have experienced periods of tight supply followed by capacity expansions resulting in pressure on margins. Products are global and move between regions, creating arbitrage opportunities and putting pressure on margins due to exposure between regions with differing feedstock environments or competitive positions. New capacity is forecast to be built in the U.S. and China on the back of advantaged feedstock positions and perceived growing market opportunities. However, as acetic acid and its derivatives are highly traded between regions, any investment which is not matched with a corresponding increase in consumption will lead to a surplus in supply in one region and subsequent export into other regions, impacting the business's profitability.

Other economic downturns and crises may occur in the future, with similar adverse effects on the economies of the countries in which we do business and on our end user sectors, resulting in knock-on impacts on industry volumes and margins. Such downturns have been and may be caused or exacerbated by, among other things, bank crises, cyber incidents, global health crises, political tensions, war, strikes, riots, civil commotion, violent weather conditions or other natural disasters. Actual events involving limited liquidity, defaults, non-performance or other adverse developments in the financial services industry, or concerns or rumors about any events of these kinds or other similar risks, have in the past and may in the future lead to market-wide liquidity problems. For example, on March 10, 2023, Silicon Valley Bank ("**SVB**") was closed by the California Department of Financial Protection and Innovation, which appointed the Federal Deposit Insurance Corporation as receiver, and on March 13, 2023, the sale of Silicon Valley Bank UK Limited, the UK subsidiary of SVB, to HSBC was announced. Furthermore, on March 15, 2023, Credit Suisse's share price dropped nearly 25 percent and investors and customers withdrew money out of Credit Suisse, with outflows topping 10 billion Swiss francs. As a result, on March 19, 2023, the Swiss National Bank and the Swiss government announced the fast-track acquisition of Credit Suisse by UBS.

An inability to anticipate industry cycles with proper forecast systems (including reliable IT resources), to allocate market research and R&D resources strategically in response thereto or to manage our inventory adequately could lead us to fail to meet high customer demand in up-cycles, incur significant overstock costs in down-cycles, lose our competitive advantage and erode our market share. Industry cyclicality and volatility may affect prices across our businesses and may negatively impact our ability to forecast cash requirements, which could result in liquidity shortages and poorer operating margins and cash flows. This, in turn, may adversely affect our overall business, financial condition and results of operations.

Our business and operations are subject to business interruption risks due to the actions of third parties, which could have a material adverse effect on our business, reputation, financial condition and results of operations.

Due to the nature of our business, we are at risk of business interruption due to the actions of third parties. Our operations depend upon timely deliveries of adequate supplies of raw materials and are therefore vulnerable to disruptions in the supply or transportation of feedstocks, including benzene, ethylene, acrylonitrile, butadiene, energy, naphtha, salt, mixed xylene isomers and paraxylene, methane and methanol. Any delays may affect our ability to maintain our operations at anticipated production levels. For example, many of our vendors and subcontractors have operations that are also subject to HSSE risks associated with the use, storage and transport of hazardous materials. Any future HSSE-related incidents affecting our vendors and subcontractors may result in significant regulatory actions, fines and other penalties, including restrictions, prohibitions or sanctions on their operations which could impair their ability to perform their contracts with us or could otherwise subject us to claims or liability, all of which could have a material adverse effect on our business, reputation, financial condition and results of operations. In addition, if any facilities experience damage or temporary closures due to any number of incidents, events or hazards caused by third parties, including protests, or if we suffer product quality issues due to contaminated feedstock received from our suppliers, our reputation, business, financial condition and results of operations may be adversely affected.

Our operations also depend upon our access to essential utilities, services and rights, such as electricity, waste water services, cooling water supply, drinking water supply, raw, treated and polished water supplies, steam supply, feedstock supply tanks, land use rights, abstraction rights, discharge rights, pipeline easements, other modes of product and raw materials transportation and natural gas, nitrogen, oxygen, carbon monoxide, synthesis gas, instrument air supply, and processing of by-products and waste as gases, liquids or solids. Any interruptions to the provision of such utilities to our plants may likewise affect our ability to maintain our operations at anticipated production levels or force us to halt production at the affected plant. A prolonged outage of a critical utility may also result in a controlled shutdown of the affected plant or parts of such plant and associated loss of production. In particular, severe damage to a dedicated power station generating steam for plant consumption could have a significant impact on our operations, as damage to steam boilers can take significant time and cost to fix and temporary back-up solutions are not easily available. For example, loss of operations in particular by the steam supplier at our Styrolution Sarnia plant would result in stoppage of our plant production until steam was re-supplied, given that this plant is dependent on a sole supplier for steam and alternative supply arrangements are limited. Some of our operations are dependent on other industrial operators, such that a prolonged interruption in their operations could have an impact on our operations. For example, the INOVYN operations at Tavaux, France have co-dependency for steam with the Solvay operations at Tavaux.

In the Acetyls Business, across our sites and joint ventures, utilities and raw materials are often supplied by third parties. For example, for our Hull site, this includes steam, electricity and oxygen, while in two of our joint ventures (Nanjing and Malaysia) and in the profit sharing agreement with Eastman (Texas City), the required synthesis gas or carbon monoxide is purchased from a third party. In all cases, given the nature of the sites, the ability to change suppliers is limited and an interruption could have adverse consequences on the business, as was illustrated at the Texas City site in April 2018, when problems on the restart of the reformer operated by a third party, resulted in the business declaring *force majeure* for approximately three months and more recently after storm Uri from February to October 2021.

At our Styrolution Business, delays or interruptions in the third-party supply of raw materials or utilities could affect, in particular, our production of SM, which is the main input into our other products. Material SM supply shortages of a significant duration could force us to stop production of the rest of our product range, which could lead to losses of sales, reputational harm and production facility idleness. This could have a material adverse effect on our business. For example, in 2021 we had to declare an event of *force majeure* on styrene monomer and derivatives ABS, polystyrene and ASA produced in Altamira, Channahon and Decatur after winter storm Uri as both our U.S. Gulf Coast styrene plants in Texas City and Bayport sustained damages following an emergency shutdown due to extreme cold and power outages in the region. In our Acetyls Business, interruption in feedstocks or raw materials of a significant duration could force us to stop production, which could lead to losses of sales, reputational harm and production facility idleness. See "—*Our facilities are subject to operational and other industry risks, including the risk of environmental contamination, which could have a material adverse effect on our operating results*."

In addition, low water levels on major transport waterways, such as the Rhine River, or service interruptions due to flooding or freezing of waterways located near our or our suppliers' facilities could adversely affect certain of our operations. In our Aromatics Business, the supply of mixed xylenes from Gelsenkirchen and mixed xylene and paraxylene from Shell Rhineland refineries are affected by both low and high water on the Rhine which can limit the ullage and ability for barges to sail. For the Acetyls Business, a number of raw materials or products are shipped by water. For example, methanol is supplied in bulk by ships to our facility in Hull, United Kingdom and a portion of the acetic acid produced is exported by ship. Any significant shortages in the supply of raw materials, including due to transportation services interruptions or amendments to laws and regulations affecting such supply or services could disrupt our operations and increase our costs, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Where we lack the equipment or infrastructure to support our own logistical requirements, we are also dependent on the availability of adequate third-party carriers to deliver our products to our customers. Potential shortages or unavailability of trusted transportation providers, missed deliveries or disruption of trucking, railroad or sea shipping services due to weather-related problems, mechanical difficulties, strikes, lockouts and other events could temporarily impair our ability to deliver our products to our customers at competitive rates or at all, which could cause reputational damage and inflate transportation costs. For example, on September 5, 2017, our Styrolution Business declared an event of *force majeure* with respect to PS and Terluran ABS deliveries to Italy and Switzerland due to the closure of a major rail link, which lasted approximately two months. See "—*Our facilities are subject to operational and other industry risks, including the risk of environmental contamination, which could have a material adverse effect on our operating results*." Our INOVYN Business experienced production restrictions in the first quarter of 2019 due to a declaration of *force majeure* at INOVYN's Martorell, Spain facility, which was the result of the closure of a waste water site operated by a regional public body. Our INOVYN Business was also impacted by temporary strikes in recent years by SNCF (railroad workers) in France and by Antwerp harbor employees as well as a general strike in France which blocked haulers, forcing a slowdown of production at Tavaux and strikes at Spanish and Swedish ports which blocked shipping out of the Martorell and Stenungsund facilities for several days to export destinations. We are also subject to the risk of theft of, tampering with or use of our shipments for smuggling purposes by third parties, for example during transit in railcars, which could lead to loss or delay of such shipments or reputational harm to our business or subject us to liability. In certain cases, this could lead to breaches of supply agreements and loss of customer business, which may have a material adverse effect on our results of operations and cash flows.

Similarly, in the Aromatics Business, delays or interruptions in the third-party supply of raw materials or utilities could affect production of PX and PTA. For example, a number of coincident *force majeure* declarations from several suppliers of acetic acid in the U.S. in the third quarter of 2018 reduced production of PTA at Cooper River South Carolina, by around 20 kilotons. In our Acetyls business, failure in third party supplies of carbon monoxide resulted in the declaration of *force majeure* by the U.S. business in both 2018, 2021 and 2022.

Our growth strategy at our businesses depends in part on the ability of our businesses to take advantage of growing demand for our products in emerging markets. We may be unable to execute this strategy if emerging markets do not grow as expected or if regional producers in such markets are able to satisfy the increased demand.

In our Styrolution Business, Asia is expected to continue to support global styrenics demand due to manufacture of a wide range of products consuming styrene derivatives (including mainly EPS, polystyrene and ABS). North-East Asia is the largest market for our products. For ABS, we estimate more than two-thirds of global demand and for polystyrene close to half of global demand to be in that region, with China clearly being the biggest market. Therefore, a significant component of our growth strategy generally, and our Asian operations specifically, relies on our ability to expand our presence in the growing Asian market. Our newly established joint venture arrangement with Sinopec including our under-construction ABS facility in Ningbo, China, will give us the opportunity to participate in the expected growth of the Chinese ABS market. According to NexantECA, future styrene capacity additions will be focused in China as part of new steam cracker complexes, which provide both ethylene and benzene feedstock. In the short term, projected Asian capacity additions will likely outpace demand. As a result, imports into China are expected to decline significantly, increasing available styrene volumes elsewhere. These factors could materially reduce our expected future revenue and could have a material adverse effect on our business, financial condition and results of operations.

Within the INOVYN Business, we are targeting emerging economies where the demand for PVC is high and PVC capacities are not always available locally, such as India and Turkey. If these markets do not grow as expected it could affect our long term development plan.

Our Aromatics Business has well established operations in China, Taiwan and Indonesia and low cost options to expand production and exploit market growth within the region, a key strategic pillar of the business. If these markets do not grow as expected, it could affect our expected future revenue and growth plan.

The Acetyls Business has a significant production presence in Asia through its joint ventures, and continued access to these markets underpins the performance of the business. While these markets are expected to grow, they also represent regions of capacity additions where new plants will take advantage of advantaged feedstock positions. Thus, the business could be adversely affected by advantaged new entrants into these markets and any decline in the economic performance of the Asian market which would depress growth in the demand for acetic acid, and in turn place further stress on the business's plants as compared to incumbents and new entrants.

Even if the economies of emerging markets continue to grow as we expect, we may be unable to penetrate these markets. If regional producers are able to meet the growing demand and/or compete directly against us on the basis of our core competitive strengths described elsewhere in this annual report, the resulting pressure on our margins would adversely affect our business, financial condition and results of operations.

Adverse conditions in the credit and capital markets, or other business-related factors, may limit or prevent our and our customers' ability to borrow or raise capital.

While we believe we have facilities in place that will allow us to borrow or otherwise raise funds as needed, adverse conditions in the credit and financial markets could prevent us from obtaining financing in the future. Worsening credit and financial markets may also affect one or more of our major suppliers, which may terminate a credit line granted to us. Furthermore, even if financial markets are stable, we may be unable to obtain access to credit on attractive terms or at all if we suffer a rating downgrade, if we are too highly leveraged or if lenders believe that our business model is too dependent on volatile commodities or any other source of uncertainty.

Our ability to invest in our businesses and refinance debt obligations could require access to the credit and capital markets and sufficient bank credit lines to support cash requirements. If we are unable to access the credit and capital markets, including to acquire receivables financing in countries that have suffered credit ratings downgrades, this could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Moreover, many of our customers also rely on access to credit to adequately fund their operations. If such customers are unable to access the credit and capital markets due to general economic, country-specific or idiosyncratic factors such as those described above, they may be forced to reduce their production levels or capital expenditures and purchasing volumes or otherwise curtail their operations. Any such effects on our customers' operations may in turn adversely affect our business by reducing our sales, increasing our exposure to accounts receivable bad debts and reducing our profitability.

We may be adversely affected by the loss of key customers for certain of our products or the loss resulting from nonpayment and/or nonperformance by our customers.

Our credit procedures and policies may not be adequate to effectively manage the customer credit risk to which we are exposed. Our customers may experience financial difficulties, including bankruptcies, restructurings and liquidations. These and other financial problems that may be experienced by our customers, as well as potential financial weaknesses in our industry, may increase our risk in extending trade credit to customers. A significant adverse change in a customer relationship or in a customer's financial position could cause us to limit or discontinue business with that customer, require us to assume more credit risk relating to that customer's receivables or limit our ability to collect accounts receivable from that customer, all of which could have a material adverse effect on our business, financial condition, results of operations and cash flows. Our insurance may not compensate us for all or any of such negative effects.

Certain of our and our joint ventures' contracts with customers and suppliers will expire (or may terminate) in the short term. There can be no assurance that we will be able to renegotiate these contracts on similar terms upon their expiration. The unanticipated costs of less favorable terms or loss of custom may materially affect our profitability.

We have not entered into formal written contractual arrangements with certain customers. Accordingly, we have no contractual remedy if we suffer economic loss as a result of such customers ceasing or reducing their purchases from us. These business relationships could therefore terminate at any time. Exercise of these rights to termination by our customers could have a material adverse effect on our business, financial condition and results of operations.

There are substantial risks associated with doing business in emerging markets, including risks related to political, economic and legal uncertainty and lack of business insurance.

We produce, distribute and/or market our products in numerous emerging markets, including, in our Styrolution Business, Brazil, China, South Korea, Thailand, Turkey and Vietnam, in our INOVYN Business, India, Turkey and South East Asia, in our Aromatics Business, China, Indonesia, India and Turkey, and in our Acetyls Businesses (including through our joint ventures), China, Malaysia, South Korea and Taiwan. These regions may have less developed legal systems and financial markets, and are generally recognized to present greater political, economic and operational risks than the U.S. and Western Europe. Some of the risks associated with conducting business in emerging markets include: slower payment of invoices; nationalization; social, political and economic instability; and currency repatriation restrictions. In addition, commercial laws in some emerging markets can be vague, inconsistently administered and retroactively applied. If we are deemed not to be in compliance with applicable laws in the emerging markets where we conduct business, our prospects and business in those countries could be harmed. To the extent that we suffer a loss of a type which would normally be covered by insurance in the U.S. or Western Europe, such as product liability and general liability insurance, we would incur significant expenses in both defending any action and in paying any claims that result from a settlement or judgment. Furthermore, our limited experience in large-scale investment project development in the complex environments of certain emerging markets may impact our ability to accurately predict the reasonable costs, timelines and other requirements of establishing a presence in those regions, and our lack of pre-existing ties may result in inadequate access to local highly-skilled specialists. These and other factors could have a material adverse impact on our business, financial condition and results of operations.

We are highly regulated and may incur significant costs to maintain compliance with, and may have substantial obligations and liabilities arising from, HSSE laws, regulations and permits applicable to our operations.

We are subject to a wide range of HSSE laws and regulations in all of the jurisdictions in which we operate. These requirements govern our facilities and operations and address, among other things, wastewater discharges, releases of hazardous materials into the environment, human exposure to hazardous materials, the classification and registration of certain chemical products and raw materials, the manufacture, storage, handling, treatment, transportation and disposal of hazardous substances and wastes, air emissions (including GHG emissions), noise emissions, operation and closure of landfills, the clean-up of contamination and contaminated sites, process safety, risk management and accident prevention and the maintenance of safe conditions in the workplace. In some jurisdictions, HSSE laws and regulations impose restrictions on the manufacturing, use, import, export or sale of certain substances, raw materials and/or products. Recently enacted or pending regulations or governmental orders limiting emissions of benzene, Cobalt, Diacetate (PTA catalyst), mercury, sulphur dioxide, nitrogen oxide, EDC, VCM and hydrofluorocarbons and other air pollutants could require us to incur significant costs for additional pollution control or air monitoring equipment or result in operational changes. Please see "*Business—Safety, Health and Environment.*" Many of our facilities require permits, approvals and pollution controls to operate and many of our operations require permits and controls to monitor or prevent pollution, and these permits are subject to modification, renewal and revocation by issuing authorities. We have incurred, and will continue to incur, substantial ongoing capital and operating expenditures to maintain compliance with current and future HSSE laws, permits and regulations applicable to our operations, or the more stringent enforcement of such requirements.

We expect that our operations will be subject in the future to new and increasingly stringent HSSE laws, regulations and permits and that substantial costs will be incurred by us to ensure continued compliance. Under the framework of the Industrial Emissions Directive ("**IED**"), the European Union has issued Best Available Techniques ("**BAT**") Reference Documents ("**BREFs**"), the purpose of which is to define technology and to provide limits for substances emitted to the environment. In particular, significant capital expenditures have been incurred by our INOVYN Business in recent years in relation to the BREF Document for the Production of Chlor-Alkali. This BREF mandated all European mercury-based Chlor-Alkali production facilities to cease operations by December 11, 2017. Since the creation of our INOVYN Business, it has closed four mercury cellrooms in Runcorn, United Kingdom; Zandvliet, Belgium; Martorell, Spain and Stenungsund, Sweden. The Zandvliet output was replaced by a new membrane cellroom in Lillo, Belgium with production starting in October 2016, whilst a conversion project at Stenungsund was successfully completed in January 2019. The mercury cellroom at Martorell, Spain ceased production in December 2017 and the VCM/PVC complex at this site is being supplied EDC from external parties or from other INOVYN manufacturing locations.

The impact of other BREF documents resolved by the European Commission such as Common Waste Water and Waste Gas Treatment in the Chemicals sector ("**CWW**") and Production of Large Volume Organic chemicals ("**LVOC**") have been assessed, and gap assessments will be carried out for certain of our facilities once the Waste Gas in Chemicals sector ("**WGC**") BREF has been published by the Integrated Pollution Prevention and Control ("**IPCC**") bureau. For example, at our Geel facility, the relevant regulatory authority has indicated that higher standards of wastewater treatment will be required in the future. A gap analysis against current practice has been carried out by the site and a program of approximately five to six years has been developed in order to meet the new standards suggested by the relevant regulatory authority for the renewal of permits. See "*Business—Safety, Health and Environmental Matters—Industrial Emissions Directive*" for further information.

In addition, it is possible that further of our feedstocks, products or by-products in the future may be classified as hazardous or harmful and thus could require significant compliance or remediation costs not currently anticipated. To the extent new restrictions or classifications result in significant additional costs or impact our ability to produce or market, or the consumer demand for, our products, our business could be materially and adversely affected.

Given the nature of our business, violations of HSSE requirements, whether currently alleged or arising in the future, may result in substantial fines or penalties, the imposition of other civil or criminal sanctions, clean-up costs, claims for personal injury or property damages, the installation of costly pollution control equipment, or restrictions on, or the suspension of, our operating permits or activities. Our facilities are subject to periodic inspections by regulatory authorities to assess compliance with applicable HSSE laws and regulations. If we do not predict accurately the amount or timing of costs of any future compliance, remediation requirements or private claims, our environmental provisions may be inadequate and the related impact on our business, financial condition or results of operations in any period in which such costs need to be incurred could be material.

At certain sites where we operate, regulators have alleged, or we have otherwise identified potential or actual non-compliance with HSSE laws and/or the permits which authorize operations at these sites. Some of these allegations or instances of non-compliance are ongoing, and substantial amounts may need to be spent to attain and/or maintain compliance. In addition, we have in the past paid, and in the future may pay, penalties to resolve such matters. Our businesses and facilities have experienced, and in certain cases, are in the process of investigating or remediating, hazardous materials in the soil, groundwater or surface water bodies at locations where we operate and/or adjacent properties and/or

natural resources at public and private lands not owned by us that result from current or historical operations. In addition, we operate hazardous waste landfills at our INOVYN sites at Runcorn; Tavaux, France; and Jemeppe, Belgium. Those landfills expose us to significant risks arising from the storage and disposal of hazardous materials and wastes. For instance, accidental discharges may occur in the future, future action may be taken in connection with past discharges, governmental agencies may assess damages or penalties or impose other sanctions against us in connection with any past or future releases or contamination, third parties may assert claims against us for damages allegedly arising out of any past or future releases or contamination and the closure and post-closure monitoring of such landfills may require us to incur significant costs.

Many of our sites have an extended history of industrial chemical processing, storage and related activities, and may currently be subject to engineering or institutional controls or restrictions or may become subject to such controls or restrictions in the future. We are currently, and from time to time have been or may be, required to investigate, manage and remediate releases of hazardous materials or contamination at or migrating from certain of these sites as well as at properties we formerly owned, leased or operated and/or at closed sites that we still own and occupy. This includes certain of our Chlor-Alkali facilities, where we are managing the phase-out of mercury. We also are, and in the future may be, responsible for investigating and cleaning up mercury or other contamination at off-site locations where we or our predecessors disposed of or treated or arranged for the disposal or treatment of hazardous wastes. Under some environmental laws, liability can be imposed retroactively, without regard to fault or knowledge, and on a joint and several basis. In connection with contaminated properties, as well as our operations generally, we also could be subject to claims by government authorities, individuals and other third parties seeking damages for alleged personal injury or property or natural resource damages resulting from environmental contamination or hazardous exposure caused by our operations, facilities or products. The discovery of previously unknown contamination, the imposition of new obligations to investigate or remediate contamination at, or migrating from, our facilities or other locations or restrictions on the use of our facilities, could result in substantial unanticipated costs. Our insurance coverage may not be adequate to cover all the risks we may face or may not be sufficient to fully cover such claims, even if insured; see also "*—Our insurance coverage may not be adequate to cover all the risks we may face, and if we were no longer covered by our existing insurance, it may be difficult to obtain replacement insurance on acceptable terms or at all.*"

We could be required to establish or substantially increase our operational budget and/or financial reserves for such obligations or liabilities and, if we fail to accurately predict the amount or timing of such costs, the related impact on our business, financial condition or results of operations in any period in which such costs need to be incurred could be material. In addition, HSSE laws and regulations can impose various financial responsibility requirements on us, and pursuant to these requirements we may be required to post bonds, create trust funds or provide other assurances that we will be able to address contamination at our sites and comply with our decommissioning obligations once our facilities reach the end of their useful lives.

Our operations involve the intensive use of hazardous materials and we have been from time to time subject to claims made for damage to property or injury, including adverse health effects, to employees and other persons, resulting from our operations. Claims made in the future could have a material adverse effect on our reputation, business, financial condition or results of operations.

Our INOVYN Business's operations involve significant water usage. Changes to relevant environmental regulations and other factors, such as water shortages as a result of climate change, could increase the cost and/or limit the availability of water, which would in turn impact our operating and production costs.

Our financial results may be adversely affected if environmental liability arises for which we are not adequately indemnified, or from a disposal of assets or businesses for which we provided a seller's indemnification in respect thereof. Our financial results may still be adversely affected to the extent that:

- the sellers do not fulfill their respective indemnification obligations;
- we breach our obligations not to undertake certain activities that may aggravate existing conditions or to mitigate associated losses;
- we incur indemnification obligations for other environmental liabilities owed as part of certain disposals of assets or businesses; or
- we incur significant costs for pre-acquisition conditions that are not covered by the indemnities.

Our businesses could be adversely affected by chemical safety regulations applicable to our products and raw materials or negative public perceptions of our products.

Our products and our raw materials are subject to extensive HSSE and industrial hygiene regulations that require the registration and safety analysis of, and in some cases impose restrictions on, certain of the substances contained in them. For example, in connection with the EU Regulation (EC) No 1907/2006 concerning the registration, evaluation, authorization and restriction of chemicals (as amended, the "**REACH Regulation**"), or the Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (as amended, the "**CLP Regulation**"), any key raw material, chemical or substance, including our products, could be classified as having a toxicological, health-related or otherwise adverse or relevant effect, including impacts on the environment, on users of our products or on workers handling those products. In the event of such a classification, those key raw materials, chemicals, substances and/or products could be banned or restricted for certain uses. For example, methylmethacrylate, which is used as a monomer in one of our production processes, has recently been recommended for a category 1 sensitizer classification which could have adverse consequences for the handling of this material or even the processing of the subsequent products produced. Similarly, maleic anhydride has recently been classified as a sensitizer and this could also have adverse consequences for its handling in our processes or for use in final products. The European Commission aims to propose a revision of the REACH Regulation in 2023. At this time we cannot predict the impact of any such revision. Our UK operations are now subject to an equivalent UK version of the REACH regulation.

We manufacture, process, or use a number of substances classified as substances of very high concern ("**SVHC**") under the REACH Regulation in each of our businesses, and the continued use of these substances may require authorization from the European Chemicals Agency ("**ECHA**"). In addition, styrene has been classified by ECHA as a substance "suspected of damaging the unborn child" and, under the National Toxicity Program ("**NTP**") of the U.S. Department of Health and Human Services, as "reasonably anticipated" to be a human carcinogen. In Europe, the Netherlands had recently filed an intention for a proposal to classify styrene as a suspected carcinogen. The review process, which will be carried out by the ECHA, will take several years. Further regulation or a reclassification of styrene could result in additional restrictions in the future on our manufacturing operations, including stricter air and water emissions limits, more burdensome requirements for additional ventilation or personal protective equipment at our facilities, or on our sale or distribution of styrene, including relevant warnings on material safety data sheets or on the packaging for our products and restrictions on use in certain types of products, as well as legal action relating to product and other liabilities.

In Ontario, Canada, the Toxics Reduction Act (which was repealed on December 31, 2021) required a review of the use of toxic substances including certain raw materials from which our products are synthesized. Among other things, this statute required tracking, preparation and publication of toxic substance reduction plans and government and public reporting. The Chemicals Management Plan, which was created in 2006 under the Canadian Environmental Protection Act, 1999, governs the assessment and management of risks associated with chemical substances to human health and the environment, including government and public reporting. Similar regulations requiring the review of the uses of toxic substances as well as related government and public reporting are in place, have recently been more stringent, or are being considered in other jurisdictions, including the U.S., which could result in additional requirements, including notification, testing, labelling and record keeping obligations, on our operations. For example, in June 2016, amendments to the U.S. Toxic Substances Control Act ("**TSCA**") became law, and the U.S. Environmental Protection Agency ("**USEPA**") published a list of ten chemical substances that are the subject of the USEPA's initial chemical risk evaluations, as required by TSCA. This list includes certain chemicals which we manufacture in the INOVYN Business, which are currently being evaluated by the USEPA pursuant to TSCA. Moreover, we are engaged in ongoing discussions with the USEPA regarding risk reduction measures in relation to the use of medium chain chlorinated paraffins and long chain chlorinated paraffins and have signed up to a testing program with other manufacturers to assess the risks and hazards associated with these substances. There is a possibility that the results of these tests may result in restrictions on uses for such products in the U.S. market, which could have an adverse effect on our business, financial condition or results of operations. It is possible that they could trigger risk screening by the USEPA of substances we produce or use, and this risk screening could lead to new or more stringent regulatory obligations and/or restrictions, including, potentially, prohibitions on manufacture and sale of certain substances we produce. Please see "*Business—Safety, Health and Environmental Matters—Toxic Substances Control Act ("TSCA").*"

The regulation or reclassification of any of our raw materials or products could result in a ban or restriction on its purchase or sale, adversely affect the availability of raw materials or the marketability of our products or require us to incur increased costs to comply with notification, labeling, handling, processing, distribution, sale and transport requirements, each of which could result in a material adverse effect on our business, financial condition and/or results of operations.

In addition, in order to obtain regulatory approval of certain new products and production processes, we are required, among other things, to demonstrate to the relevant authorities that the product is safe for its intended uses and that we are capable of manufacturing the product in accordance with applicable regulations. The process of seeking approvals can be time-consuming and subject to unanticipated and significant delays. Approvals may not be granted to us on a timely basis, or at all. Any delay in obtaining, or any failure to obtain or maintain, these approvals would adversely

affect our ability to introduce new products, to continue distributing existing products and to generate revenue from those products, which could have a material adverse effect on our business and prospects. New laws and regulations may be introduced in the future that could result in additional compliance costs, confiscation, recall or monetary fines, any of which could prevent or inhibit the development, distribution and sale of our products.

Existing and proposed regulations to address climate change by limiting GHG emissions and restrictions on other air emissions, may cause us to incur significant additional operating and capital expenses or adversely affect demand for our products.

Our operations result in emissions of GHGs, such as carbon dioxide and methane. Growing concern about the sources and impacts of global climate change has led to a number of regional, national and supranational legislative and administrative measures, both proposed and enacted, to monitor, regulate and limit carbon dioxide and other GHG emissions. As a result, our operations, as well as those of our customers, are subject to stringent regulations relating to carbon dioxide and other GHG emissions. Compliance with these requirements may require us to install additional pollution control equipment, purchase additional emissions allowances or credits or implement other operational changes, such as alternative fuels, which could increase our production or compliance costs or, to the extent incurred by our customers, negatively affect our profitability or demand for our products.

At the international level, many nations have agreed to limit emissions of GHGs pursuant to the United Nations Framework Convention on Climate Change, also known as the "Kyoto Protocol". Methane, a primary component of natural gas, and carbon dioxide, a byproduct of the burning of oil, natural gas, and refined petroleum products, are two of the GHGs addressed by the Kyoto Protocol. Although the U.S. is not a party to the Kyoto Protocol at this time, all EU member states and the United Kingdom have ratified it. As a result of commitments made at the UN climate conference in Durban, South Africa in December 2011, certain members of the international community negotiated a treaty at the December 2015 Conference of Parties in Paris (the "**Paris Agreement**"). The Paris Agreement, which entered into force in November 2016, requires developed countries to set targets for emissions reductions once the Paris Agreement is adopted by those individual countries within their respective national or federal law. Additional measures requiring reductions in GHG emissions have been, or may be, implemented by countries in which we operate.

The European Union committed in December 2020 to reduce GHG emissions, in its member states to no more than 55% of 1990 levels by 2030, on the condition that other major economies undertake to do their part in the global attempt to reduce emissions and commit to taking steps to achieve net-zero GHG emissions in the EU by 2050. The European Climate Law, adopted by the European Union in July 2021, includes legally binding targets to achieve climate neutrality by 2050 and to reduce net GHG emissions by at least 55% by 2030. Such targets are binding on all EU member states.

In the European Union, our GHG emissions are currently regulated under the EU ETS, an EU-wide system that imposes emissions limits and permits trading of allowances for industrial GHG emissions. The EU ETS has become, and is expected to continue to become, progressively more stringent over time, including by reducing the total number of allowances to emit GHGs as well as those that EU member states will allocate without charge to industrial facilities and by introducing and/or increasing fees for allowances. Such measures could result in increased costs for us to (i) operate and maintain our facilities; (ii) install new emission controls; (iii) purchase or otherwise obtain allowances to emit GHGs; and (iv) administer and manage our GHG emissions program.

In line with the EU's goal of achieving carbon neutrality by 2050 and a 55% reduction in GHG by 2030, on July 14, 2021, the European Commission released a number of legislative proposals collectively called "Fit for 55". The proposals envision significant changes to current EU ETS functions and requirements, including: new national limits on GHG emissions, a new carbon border adjustment mechanism ("**CBAM**") to impose carbon pricing on imports into the EU of selected products, further reduction of free CO_2 allowances allocated to heavy industry and extending emissions trading requirements to additional industrial sectors. Specifically with respect to CBAM, under the proposal importers of certain goods (initially including cement, iron and steel, aluminium, fertilisers, hydrogen and electricity, as well as certain precursors) would have to report emissions embedded in their goods in a transitional phase starting in 2023. Once the definitive system is fully operational (expected in 2026), EU importers would also be required to surrender CBAM certificates purchased at prices that correspond to the carbon price that would have been paid if the goods had been produced in the EU (less any carbon price actually paid by the non-EU producer of the goods). Although the initial list of goods covered by CBAM is limited, at this time it is not clear whether and when such list may be expanded to include other imported goods, the process for obtaining carbon emissions information from non-EU producers or the cost and availability of future allowances or CBAM certificates. The Council and the European Parliament reached a provisional political agreement on certain points of the "Fit for 55" package in December 2022. The proposals are subject to the EU legislative process, including adoption or implementation by individual member states, and at this time we cannot predict the terms of any regulations that may be enacted in the future or the impact of any such regulations on our business, operations or financial condition.

The United Kingdom withdrew from the European Union on January 31, 2020 pursuant to Article 50 of the Treaty on European Union ("**Brexit**"). Accordingly, the UK government is no longer subject to the EU legislation that commits the EU member states to reducing carbon emissions, increasing energy efficiency and increasing renewable energy production, including in respect of the European Climate Law adopted by the European Commission. In addition, the United Kingdom is no longer a participant in the EU ETS. In January 2021, the United Kingdom implemented a UK Emissions Trading Scheme ("**UK ETS**"). Like the EU ETS, the UK ETS has industrial sites receiving or purchasing allowances to emit GHGs and surrendering one allowance for each ton of carbon dioxide emitted. Companies which emit less GHGs than their allowances cover are able to sell the excess allowances, whereas those which emit more must buy additional allowances through the UK ETS. At present, no agreement to link the carbon pricing systems in the EU and the United Kingdom has been formalized. In addition, as a result of the Paris Agreement, in June 2019, the UK government enacted legislation requiring reduction of GHG emissions to net zero by 2050, including a target to reduce GHG emissions by 68% of 1990 levels by 2030, and more recently committed to a target to reduce GHG emissions by 78% of 1990 levels by 2035. In connection with Brexit, the UK government also introduced legislation designed to transfer responsibility for the Industrial Emissions Directive ("**IED**"), which takes an integrated approach to controlling pollution and sets strict industry standards for the most polluting industries, and the BAT Conclusion, which contain emissions limits associated with BAT, to competent authorities in the United Kingdom and to put in place a process for determining future UK BAT Conclusions for industrial emissions. The UK government's Clean Air Strategy for England sets out actions for determining future UK BAT for industrial emissions. Our operations in the United Kingdom will continue to operate under the legislative framework applied in the United Kingdom. The Environment Act 2021 received royal assent on November 9, 2021, introducing certain provisions regarding targets, plans and policies for improving the natural environment and certain other matters, including provisions relating to air quality. Commencement regulations to bring certain provisions in the Environment Act 2021 into force have yet to be made.

Furthermore, in Ontario, Canada, a Point of Impingement standard that significantly reduces the allowable emissions of benzene became effective in July 2016. We undertook measures in our capital investment plan to upgrade our Sarnia operations to reduce benzene emissions in accordance with the requirements set out under this standard and achieved the necessary capital improvements in the Styrolution Business's Sarnia site to ensure compliance in July 2016. Version 2.0 of the Point of Impingement standard regulating benzene emissions came into effect in Ontario in February 2018. Although the Sarnia site complies with the current standard, and we are subject to a governmental order requiring us to reduce benzene emissions and perform fenceline monitoring, so additional capital improvements are in progress to ensure continued compliance with tighter requirements for benzene emissions and we might also be required to perform a health risk study assessing the impacts of emissions on human health.

In the U.S., we are required to monitor and report to the USEPA annual GHG emissions from certain of our U.S. facilities. In addition, the USEPA has promulgated regulations under the Clean Air Act ("**CAA**") which subject the GHG emissions of certain newly constructed or modified facilities to pre-construction and operating permitting requirements. Pursuant to these requirements, newly constructed or modified facilities with the potential to emit certain quantities of GHGs are required to implement "best available control technology," which can include carbon efficiency standards, GHG emission concentration limits, specific technology requirements or other measures. Significant uncertainty exists as to how newer or stricter GHG regulations will in the future impact large stationary sources, such as our facilities in the U.S., and what costs or operational changes these regulations may require.

In addition, the U.S. Congress has from time to time considered adopting legislation to reduce emissions of GHGs and numerous U.S. states have already taken legal measures to reduce emissions of GHGs primarily through the planned development of GHG emission inventories and/or regional GHG cap and trade programs. Although the U.S. Congress has not adopted such legislation at this time, it, or additional U.S. states, may do so in the future, along with other countries (in addition to the EU), and we cannot yet predict the form such regulation will take (such as a cap and trade program, technology mandate, emissions tax or other regulatory mechanism) or, consequently, estimate any costs that we may be required to incur in respect of such requirements, for example, to install emissions control equipment, purchase emissions allowances, administer and manage our GHG emissions program, or address other regulatory obligations. Such requirements could also adversely affect our energy supply, or the costs (and types) of raw materials we use for fuel. U.S. President Biden has stated that climate change will be a central focus of his administration. In addition to re-entering the Paris Agreement, on January 27, 2021, U.S. President Biden issued a pair of executive orders and a presidential memorandum setting out several administrative priorities undertakings focused on climate change. In April 2021, the Biden administration announced a target for the country to achieve a 50-52% reduction in GHG emissions compared to 2005 levels by 2030 and a goal of achieving net-zero GHG emissions by 2050. We cannot yet predict the form regulations or other binding obligations adopted by the United States, the European Union or the United Kingdom to meet their commitments under the Paris Agreement will take (such as a cap-and-trade program, technology mandate, emissions tax, carbon floor price or other regulatory mechanism) or, consequently, estimate any costs that we may be required to incur in respect of such requirements, for example, to install emissions control equipment, purchase emissions allowances, administer and manage our GHG emissions program, or address other regulatory obligations. Such requirements could also adversely affect our energy supply, or the costs (and types) of raw materials we use for fuel. Requirements arising from

these, or different, regulations controlling or limiting GHG emissions could have a material adverse impact on our business, financial condition or results of operations, including by reducing demand for our products.

We are exposed to the risk of violations of anti-corruption laws, economic and trade sanctions or other similar regulations.

As a result of our international activities, we are subject to the laws and regulations of the various countries in which the Group operates. In particular, our international operations may be subject to anti-corruption laws and regulations such as the U.S. Foreign Corrupt Practices Act of 1977, the UK Bribery Act of 2010 and the local anticorruption laws of any jurisdiction applicable to us. In addition, our international operations may be affected by sanctions and economic restrictions imposed by the UK Office of Financial Sanctions Implementation, the U.S. Office of Foreign Assets Control, the European Union, the United Nations, or other law enforcement agencies or sanctions authorities. Countries or jurisdictions that are subject to economic sanctions and export controls currently imposed by the United States, the European Union or the United Kingdom include the Crimea, Zaporizhzhia and Kherson regions of Ukraine (in each case to the extent that such areas of Kherson or Zaporizhzhia are under control of Russia), the so-called Donetsk People's Republic, the so-called Luhansk People's Republic, Cuba, Iran, North Korea and Syria. Such list of countries or jurisdictions may change from time to time.

While we have developed policies, procedures and training designed to achieve and maintain compliance with applicable laws, the Group could be exposed to investigations, claims and other regulatory proceedings for alleged or actual violations of laws related to our operations, including anti-corruption and anti-bribery legislation, trade laws and sanctions laws. As there can be no assurance regarding EU, UK or U.S. enforcement policy with respect to economic sanctions, it is possible that the relevant authorities could take a different view regarding our sanctions compliance efforts, which could potentially lead to negative adverse effects on our results of operations, financial condition and prospects. If we are found to be subject to any laws or regulations which we considered were not applicable, our policies, procedures and actions may be in breach of such law or regulation and we may be subject to censure, prosecution, fines or other negative consequences. Furthermore, laws, regulations or licensing policies on economic sanctions or export controls could change and additional countries may introduce economic sanctions, export control or similar regimes.

Any alleged violation of current or future applicable laws or regulations, either erroneously or substantiated in the future, could result in civil or criminal liability for us, our employees, entities or partners, the imposition of fines, or other penalties, as well as negative publicity or reputational damage, and could materially and adversely affect our business, prospects, financial condition and results of operations.

Our insurance coverage may not be adequate to cover all the risks we may face, and if we were no longer covered by our existing insurance, it may be difficult to obtain replacement insurance on acceptable terms or at all.

Our plants, machinery, equipment, inventories and other assets at our wholly owned sites are insured on an all-risk basis under group-wide policies entered into by the INEOS Group and under which we are a named insured party for certain property damage, business interruption, public liability risks (*e.g.*, product liability and environmental risks), marine risks, construction risks and certain financial risks (*e.g.*, directors' and officers' liability insurance), while our joint ventures are covered by separate insurance arrangements. We pay insurance premiums on the policies that cover our operations and certain fees to insurance agents in connection with these policies. These property and liability insurance policies can only provide cover for entities that are controlled by INEOS or in which INEOS has at least a 50% interest. Our major construction projects, defined as those with a total investment cost above €100 million, are insured separately with bespoke project insurance policies. The Group also has separate local policies for employee liability and vehicle insurance. In addition, our joint ventures maintain their own insurance coverage. We believe these insurance policies are generally in accordance with customary industry practices, including deductibles and limits of coverage, but we cannot be fully insured against all potential hazards incident to our business, including losses resulting from the operational hazards described above under the heading "*—Our facilities are subject to operational and other industry risks, including the risk of environmental contamination, which could have a material adverse effect on our operating results*.", or all potential losses, including those related to product recalls or damage to our reputation. Such insurance policies are also subject to deductibles and limitations, including on the maximum amount of liability covered. We may incur losses beyond the limits, or outside the coverage, of our insurance policies, including liabilities for violations of environmental requirements and contamination, which are generally subject to significant limitations and exclusions. If we were to incur a significant liability for which we were not fully insured, it could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our global insurance policies are renewable on a yearly basis, commencing on June 1. As a result of market conditions, premiums and deductibles for certain insurance policies can increase substantially and, in some instances, certain insurances may become unavailable at a reasonable cost or available only for certain risks. Further, if INEOS were to cease to hold at least a 50% interest in our business, we may no longer be entitled to coverage under these policies. We

can provide no assurances that we will be able to renew, or obtain replacement insurance for, our insurance policies on acceptable terms or at all in the future.

As a result of our international operations, we are exposed to currency fluctuation risks as well as to regulatory and local business risks in several different countries that could adversely affect our profitability.

We currently operate facilities in 18 different countries. Our businesses are subject to risks normally associated with international operations, including currency fluctuation risks and local business risks. Our results of operations may be affected by both the transaction effects and the translation effects of foreign currency exchange rate fluctuations. We are exposed to currency fluctuations when we convert currencies that we receive for our products into currencies required to pay our debt, or into currencies in which we purchase raw materials, meet our fixed costs or pay for services, which could result in a gain or loss depending on fluctuations in exchange rates. In particular, a large proportion of our manufacturing costs, our selling, general and administrative expenses, and our debt servicing needs are incurred in currencies other than the euro, primarily the U.S. dollar, the pound sterling, the Norwegian krone and the Swedish krona as well as other currencies including the Chinese renminbi, the Korean won, the Japanese yen and Thai baht, reflecting the location of our production sites and the currency in which certain raw materials are traded. In addition, a large proportion of our outstanding debt instruments is denominated in currencies other than the euro, including the U.S. dollar. At the same time, many of our sales are invoiced in U.S. dollars or local currencies. In each case, income or expense is reported in local currency and translated into euro at the applicable currency exchange rate for inclusion in our financial statements. Therefore, our financial results in any given period may be materially affected by fluctuations in the value of the euro relative to the U.S. dollar, the pound sterling, the Norwegian krone and the Swedish krona, as well as other currencies including the Chinese renminbi, the Korean won and Thai baht. Significant changes in the value of the euro, the U.S. dollar and other currencies relative to each other could have a material adverse effect on our business, financial condition, results of operations and cash flows.

This could include the possibility of an increase in the amount of our U.S. dollar-denominated indebtedness when converted into euro, as was the case in 2021 and most of 2022 when the value of the U.S. dollar relative to the euro increased, before decreasing again at the end of 2022 and the beginning of 2023. We do not currently hedge our exposure to fluctuations in foreign exchange rates, though we may choose to do so in the future

We are also exposed to other risks of international operations, including trade barriers, international trade agreements and tariffs, exchange controls, national and regional labor strikes, social and political risks, general economic risks such as local economic downturns, required compliance with a variety of foreign laws, including tax laws, anti-corruption and bribery laws (*e.g.*, the U.S. Foreign Corrupt Practices Act of 1977, the UK Bribery Act 2010 and the Organisation for Economic Co-Operation and Development's Anti-Bribery Convention) and laws sanctioning trade with specified countries or individuals (see also "*—We are exposed to the risk of violations of anti-corruption laws, economic and trade sanctions or other similar regulations*"), and the difficulty of enforcing agreements and collecting receivables through foreign legal systems. Any changes in such laws and policies restricting international trade could have a material adverse effect on our business. For example, as a result of recent revisions in the U.S. administrative policy, there are, and there may be additional, changes to existing trade agreements, greater restrictions on free trade and significant increases in tariffs on goods imported into the U.S., in particular those manufactured in Mexico and Canada. Future actions of the U.S. administration and that of foreign governments, including China, with respect to tariffs or international trade agreements and policies remain unclear. The escalation of a trade war, tariffs, retaliatory tariffs or other trade restrictions on our products or those of our customers or suppliers, in particular on materials imported by us into China, may significantly hinder our ability to provide our products to customers in China or other affected locations.

Such developments may result in a decrease in demand for our products as well as delays in payments from our customers. Furthermore, other governmental action related to tariffs or international trade agreements, changes in social, political, regulatory and economic conditions, or in laws and policies governing foreign trade, manufacturing, development and investment in the territories and countries where our customers are located, could lead to a rebalancing of global export flows and an increase in global competition, which in turn could adversely affect our business, financial condition, results of operations and cash flows.

In addition, due to the nature of our industry, we are subject to national and international regulations governing the import and export of chemicals or goods containing chemicals. Specific regulation or prohibition of chemicals in our supply chain could result in a need to obtain special authorization for product movements, which could lead to increased costs and delays. In our INOVYN Business, EDC, carbon tetrachloride, chloroform and dichloropropene are covered by Prior Informed Consent ("**PIC**") regulations from the EU and the United Kingdom. which implement the Rotterdam Convention and require export licenses prior to shipment from the EU and the United Kingdom. We also file an annual report to the European Chemicals Agency and the UK Health and Safety Executive under a mirror PIC scheme following Brexit. The Acetyls Business is a manufacturer of both acetic acid and acetic anhydride. The export of acetic anhydride, which the Acetyls Business manufactures in Hull, United Kingdom, is subject to export licenses from the United Kingdom government and satisfactory end user declarations. Should these export licenses become more stringent or require increased

costs, whether through changes in legislation, the Acetyls Business could be exposed to increased costs or may be unable to make these sales. Additionally, in China, the sale of acetic acid is subject to a dangerous goods license. The maintenance of this license is required to support the business's on-going sales within China. Any failure to monitor regulatory developments in all jurisdictions in which we operate, or an infringement of these or other regulations governing international operations could result in investigations, loss of sales or customers, production delays and reputational damage, all of which could have a material adverse effect on our results of operations and financial prospects.

We may be unable to implement our business, cost control and growth strategies.

Our future financial performance and success largely depend on our ability to implement our business strategies successfully. We cannot assure you that we will successfully implement the business strategies described in this annual report or those to be developed by our management, or that implementing these strategies will sustain or improve and not harm our results of operations in the targeted sectors. In particular, we may not be able to lower our fixed costs, increase our manufacturing efficiency or asset utilization, enhance our current portfolio of products or achieve other fixed or variable cost savings in order to remain a low-cost producer of our products.

Our business strategies are based on assumptions about future demand for our current products and the new products and applications we are developing, as well as on our continuing ability to produce our products profitably. Our ability to implement our business strategies depends on, among other things, our ability to finance our operations and product development activities, maintain high quality and efficient manufacturing operations, respond to competitive and regulatory changes, access quality raw materials and utilities in a cost-effective and timely manner, respect local, regional or international anti-competition rules relating to horizontal or vertical integration in connection with our arrangements with customers and suppliers, retain and attract highly-skilled technical, managerial, marketing and finance personnel, and, in certain cases, re-arrange, relocate and close certain manufacturing facilities with minimal disruption to our operations, and divest businesses or discontinue product lines on favorable terms and with minimal disruptions.

Our results of operations are materially influenced by the degree to which we utilize our assets in order to achieve maximum production volumes. We cannot guarantee that we will be able to implement our cost leadership strategy, which will include maximizing the utilization of assets. For example, the number and length of turnarounds (scheduled outages of a unit in order to perform necessary inspections, tests to comply with industry regulations and any maintenance activities that may be necessary) and unplanned outages have had, and may in the future have, an impact on our operating results, even if such outages are covered by insurance. In 2021, unplanned outages caused by storm Uri caused supply disruptions for our derivatives plants. In 2022, proactive shtudowns of Styrene and derivative plants ahead of an arctic cold front impacted supply. In 2022, planned turnarounds in Bayport, U.S. (styrene monomer) lasted longer than scheduled and reduced available products to sell, causing *force majeure* declarations for downstream products. In our INOVYN Business, sales volumes of general purpose PVC, specialty PVC and caustic soda in the second quarter of 2022 were negatively impacted by key turnaround programs at our facilities in Rafnes, Norway and the Feyzin cracker in France, both of which experienced significant delays in start-up following the completion of planned maintenance activities. In our Acetyls Business, issues pertaining to the third-party supplier of carbon monoxide resulted in the U.S. business declaring a *force majeure* in 2018, 2021 and 2022. At the acetic acid plant in the United Kingdom, issues with commissioning new boilers and turbines led to the business declaring a *force majeure* in 2021. In 2018, our Aromatics Business also experienced a delay at one of its PTA plants during a scheduled turnaround due to adverse weather and the lengthy commissioning of a replacement crude TA drier. See also "—*Our facilities are subject to operational and other industry risks, including the risk of environmental contamination, which could have a material adverse effect on our operating results*." and "—*Our business and operations are subject to business interruption risks due to the actions of third parties, which could have a material adverse effect on our business, reputation, financial condition and results of operations*." In addition, we may be unable to implement on a timely basis our business strategies, including our cost reduction strategy, in accordance with our plans or at all. In the process of implementing our business strategies, we may experience severe business disruption and loss of key personnel. In addition, the costs involved in implementing our strategies may be significantly greater than we anticipate.

Furthermore, we may not achieve the results anticipated in connection with our growth strategies if, for example, we are unable to maintain or gain market share in key customer industries, secure additional footholds in emerging markets or develop new and unique Specialties products responsive to evolving client requirements. The costs involved in implementing our strategies may be significantly greater than we currently anticipate. Furthermore, our growth strategies rely on our ability to complete projects on time and to ramp up production at such facilities efficiently. We have made progress on our new ASA facility at our Bayport, Texas site, intended to be completed by mid-2023, and the construction of a world-scale ABS plant in Ningbo, China, planned to go on stream by the end of 2023 (the latter being part of our newly established joint venture arrangement with Sinopec). In our INOVYN Business, we have plans to further increase our specialty PVC production capacity at our existing plants in Germany, Norway, Belgium, Sweden and France, driven by evolving market demand, particularly for sustainable PVC in high-end applications across the automotive, energy, and building and construction sectors. The growth plan is intended to involve converting some general purpose PVC capacity to specialty PVC capacity. Any delays in the completion of such projects, including delays caused by failures to timely

obtain required permits or other approvals, shortages of construction workers or technical difficulties in the ramp-up of production, could adversely affect our ability to implement our business strategies as planned and increase our costs.

In our Aromatics Business, there are several business improvements projects whose successful execution relies on adequate supply of capital and resources. As the Aromatics Business is cyclical and reasonably capital intensive in nature, during a downturn the Aromatics Business may have to re-allocate resources that could impact the timing of delivery of such improvement projects. In addition, cost reduction initiatives required to keep the business competitive and free up resources to fund the improvement projects may be delayed or more expensive than envisaged.

For our Acetyls Business, a number of projects within the business and its associated joint ventures are intended to improve the cost position of our plants and enhance our competitive position, thus supporting the business growth agenda. For example, we are implementing a project to change the feedstock within our South Korean joint venture which is designed to improve the cost position of that plant. However, the implementation of strategies and cost reduction programs is inherently subject to risks, particularly if they include a reduction in manpower numbers. We are unable to guarantee that the implementation of the cost reduction targets will be achieved without any issues with labor unions in the U.S., the United Kingdom or other countries where we operate.

Any failure to develop, revise or implement our business strategies in a timely and effective manner may adversely affect our ability to service our debt and could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our profitability and cash flows could deteriorate materially if we fail to keep up with technological innovation and the increasing trend toward digitalization of our industry.

Our profitability depends on, among other things, our ability to make process improvements in the manufacturing of our products and our ability to introduce new products, product grades and applications that offer value for our customers. As we compete in a number of industries and with other products and technologies, we are required to be innovative to satisfy our customers' demands.

Our product innovation is focused on improving the technology and efficiency with which we produce our commodity products and the quality and properties of our specialty products. Some of our competitors may be more capable of advances in product and technology development and anticipating and responding to market trends and developments. Also, some of our competitors, especially global chemical companies operating in our core businesses, may have greater financial and other resources than we do and may increase their competitiveness relative to us by investing more in process improvements or in research and development activities with respect to our key products, which may negatively impact our business. In addition, since innovation is also fostered by the support of external partners such as universities and other independent institutions, competitors operating in markets with stronger or a larger number of clusters of such institutions and industry players may have an advantage over us.

In the Aromatics Business, product innovation is focused on improving the technology and efficiency with which we produce our commodity products, lowering the carbon footprint of our processes and the development of chemical recycling technology of PET (Infinia). Some of our competitors may be more capable of achieving advances in product and technology development and anticipating and responding to market trends and developments. Moreover, other participants in the downstream PET industry may be better placed to exploit development of new technologies, collaboration with large brand owners and retailers and integration with waste recovery companies, which could increase the content of recycled PET threatening the long-term volume demand of virgin PTA. The Aromatics Business is developing a program of carbon reduction initiatives across the business that will form part of the strategic plan going forward.

In addition, the industry in which we operate is characterized by increasing trends toward digitalization and connectivity, such as the so-called "Internet of Things" and "Industry 4.0." Such new technology trends look to increase productivity and cost efficiency by implementing new digitalized solutions that enable companies to carry out predictive maintenance, monitor plant efficiency, interface with customers seamlessly and increase the accuracy of forecasts, among other applications. We may lose a competitive advantage if new or existing competitors are able to develop or acquire capacities relating to innovative technologies, including IT technologies that we do not possess, or if they are able to implement such technologies earlier or more effectively than we are.

Product development and engineering require significant investment. We cannot assure you that our product development and engineering efforts, including our efforts to develop new digital technologies, will continue to deliver competitive products that will translate into sales to customers. In particular, there can be no assurance that there will be demand from our customers for the products that we develop as a result of such investment, and we may fail to predict customer preferences accurately or our competitors' products may adversely impact demand for our products. For example, in our Styrolution Business we have made significant investments in product lines that are currently in various stages of

market introduction and commercialization, such as our Styrenics ECO range of products containing recycled or bio-attributed contents. In our INOVYN Business, our product innovation is focused on the VCM and PVC production chains, including the development of new grades of Specialty PVC. In addition there has been increased focus on hydrogen and PVC recycling. There can be no assurance that future demand for such products will be at levels we currently expect or that such products will meet the sustainability needs and preferences of our customers. If we are not able to predict customer preferences accurately or compete with the new product developments of our competitors, we may not realize the sales we anticipate in respect of such investment. If we fail to keep pace with the evolving technological innovations in our markets or invest in products that generate strong future demand from customers, this may have a material adverse effect on our business, financial condition, results of operations and cash flows.

If we fail to maintain an effective system of internal controls over financial reporting, we may not be able to accurately report our financial results or prevent fraud.

We have designed and continue to design our internal control systems with the objective of providing reasonable assurance that (1) our transactions are properly authorized; (2) our assets are safeguarded against unauthorized or improper use; and (3) our transactions are properly recorded and reported, all to permit the preparation of our financial information in conformity with applicable accounting principles. We design our internal controls through the use of internal resources, external consultants and with the assistance of our affiliates to ensure the three lines of defense in our organization.

Any system of controls, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system are met. In addition, the design of any control system is based in part upon certain assumptions about the likelihood and expected impact of future events. Because of these and other inherent limitations of control systems, there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote they are. In addition, the fact that our operations span several jurisdictions compounds the complexity of our control systems. Any failure, even unintentional, to remedy internal control weaknesses in the future, to maintain adequate internal controls, to properly limit access to cash, to train staff adequately regarding company policies and procedures, to apply accounting and tax rules correctly or to produce accurate financial information on a timely basis could result in material misstatements of our financial results, asset loss or misappropriation, internal or third-party investigations, administrative fines and damaged customer relationships, all of which could increase our operating costs and materially impair our ability to operate our business.

Destruction, ineffectiveness or obsolescence of our information systems could lead to a disruption in our business.

Our operations rely to a significant extent, on business-critical applications and information technology ("**IT**") services, and therefore we are subject to the risk that our operations could be disrupted due to the unavailability of such systems. The partial or full physical destruction or unavailability of our information systems could generate a break in our data flow or lead to a system shut-down. Furthermore, our business continuity plan for the recovery of data and our back-up center containing the information required for employees affected by any such incidents to carry on with their activities may fail to preserve our data reliably or accurately. If we are unable to ensure that our business-critical applications and IT systems operate with sufficient reliability and availability, our operations could be disrupted, which could have a material adverse effect on our business and reputation.

Additionally, ineffective information systems management, including a failure to ensure that employees are given data access commensurate with their positions, to properly manage the identity of those persons who are given data access, to properly manage program changes, to track asset maintenance and licenses, to prevent or manage security or hacking incidents, to train employees regarding best IT practices and security policies, to harmonize third-party applications with internal platforms or to implement local and international requirements could have a material adverse effect on our business and reputation.

We are also subject to the risk that our information systems may become obsolete or require updates. For example, we currently employ information systems supported by SAP. SAP has informed us that it will no longer support certain of these information systems from 2027, and we may not be able to successfully copy the SAP system or transfer our current information system to a new platform or provider, or we may experience difficulties and disruptions to certain of our business operations in doing so. Any inability to update our information systems to keep pace with the information systems requirements of our applications landscape could have a material adverse effect on our business and reputation.

Within the Aromatics and Acetyls Businesses, we moved from the legacy BP SAP system to an internal system in the second half of 2021, which we are in charge of maintaining and supporting ourselves. While thus we are less dependent on third-party support providers, we cannot rule out that failures of our internal system will occur, which could result in potential liability for our business, higher insurance premiums, damage to assets, safety issues, operational downtime or delays, and revenue losses, adversely impacting our prospects, results of operations and financial condition.

We are subject to cyber security risks. A cyber incident could occur and result in information theft, data corruption, operational disruption and/or financial loss.

Our industry has become increasingly dependent on digital technologies to conduct certain processing activities, in particular in the context of trends such as "Industry 4.0" and the "Internet of Things." For example, we depend on digital technologies to perform many of our services and to process and record financial and operating data. At the same time, cyber incidents, including deliberate attacks, have increased. Our technologies, systems and networks, and those of our vendors, suppliers and other business partners, may become the target of cyberattacks or information security breaches, such as cyber-fraud, viruses, malware infections, or social engineering activities like phishing and employee impersonation, all of which could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of proprietary and other information, or other disruption of business operations. In recent years, cyberattacks have become more prevalent and much harder to detect and defend against. These threats may arise from a variety of sources, all ranging in sophistication from an individual hacker to alleged state-sponsored attacks. A cyberattack may be generic, or it may be custom-crafted to target the specific information technology used by us. If, as a result of such cyberattack, our IT systems were to fail and we were unable to recover in a timely way, we may be unable to fulfil critical business functions, which could damage our reputation and have a material adverse effect on our reputation, business, financial condition and results of operations.

Although our IT Governance, Risk management and Compliance programs provide availability, confidentiality and an overall security approach to all systems and business processes, including cyber security controls, like intrusion detection/ intrusion prevention, firewalls, mobile device management, malware and virus protection, notebook encryption, secure VPN access, network segmentation, industrial control system security monitoring, email and internet security, security information and event management, threat and vulnerability management, any failure of these programs could result in a cyber security incident. Increased reliance on technology carries with it an increased risk of cyber security issues, including phishing and end point vulnerability, which has been particularly heightened in light of the current environment of remote working in response to the COVID-19 pandemic.

In addition, certain cyber incidents, such as surveillance, may remain undetected for an extended period. Our systems for protecting against cyber security risks may not be sufficient. As cyber incidents continue to evolve, we will likely be required to expend additional resources to continue to modify or enhance our protective measures or to investigate and remediate any vulnerability to cyber incidents.

In addition, confidential information that we maintain may be subject to misappropriation, theft and deliberate or unintentional misuse by current or former employees, third-party contractors or other parties. Any such misappropriation and/or misuse of our information could result in our, among other things, being in breach of certain global data privacy, data protection, localization, security and consumer-protection laws and regulations. These laws and regulations are emerging and evolving in countries worldwide and the interpretation and application of these laws and regulations in Europe, the U.S. and elsewhere are often uncertain, contradictory and changing. For example, the General Data Protection Regulation (Regulation (EU) 2016/679) ("**GDPR**") came into effect in Europe in May 2018. The GDPR is a uniform framework setting out the principles for legitimate data processing. The introduction of the GDPR strengthens the rights of individuals (data subjects), imposes stricter controls over the processing of personal data by both controllers and processors of personal data and imposes stricter sanctions with substantial administrative fines and potential claims for damages from data subjects for breach of their rights. In particular, under the GDPR, breaches of data protection rules may result in maximum fines equal to the greater of €20 million and 4% of the annual global turnover of the sanctioned company. It is possible that the GDPR and other laws may be interpreted or applied in a manner that is adverse to us, unforeseen, or otherwise inconsistent with our practices or that we may not adequately adapt our internal policies and/or procedures to evolving regulations, any of which could result in litigation, regulatory investigations and potential legal liability, require us to change our practices in a manner adverse to our business or limit access to our products and services in certain countries. As a result, our reputation and brand may be harmed, we could incur substantial costs, and we could lose both customers and revenue. While our IT compliance programs contain certain procedures to cover GDPR by providing records of processing activities, performing assessments on technical and organizational security measures and stipulating contractual agreements with external service providers and business partners and our demand, change and project management procedures have been implemented which guarantee the involvement of the legal department and IT security team to assess new business applications and systems, identifying GDPR relevance and security vulnerabilities upfront, any failures of these programs could result in potential liability for our business, losses of confidential information, reputational consequences, financial damages, higher insurance premiums, damage to assets, safety issues, operational downtime or delays, and revenue losses, adversely impacting our prospects, results of operations and financial condition. The significance of any such event is difficult to quantify, but may in certain circumstances be material to the Group and could have adverse effects on our business, financial condition and results of operations.

Our success depends on the continued service of key personnel and our ability to attract highly-skilled individuals.

Our success depends in significant parts upon our ability to attract and retain qualified and committed employees, including in particular the continued service of directors and senior management, including the executive officers at each of our business units, who have experience in our industry and in operating a company of our size and complexity, and our ultimate shareholders James Ratcliffe, Andrew Currie and John Reece. There may be a limited number of persons with the requisite experience and skills to serve in such positions, and we may not be able to locate, employ or retain them on acceptable terms or at all.

In addition, our future growth and success also depend on our ability to attract, train, retain and motivate skilled managerial, sales, administrative, operating and technical personnel, including R&D and engineering specialists. We do not maintain any "key man" life insurance for any member of our senior management. In times of increased demand, producers may attempt to increase capacity, which can result in a competitive market for the limited supply of highly-skilled professionals. If we experience a shortage of adequately skilled candidates and are unable to hire or retain suitable employees, we may be unable to maintain our current operating levels or need to increase wages to remain competitive with other industry employers, which could increase our costs substantially. Additionally, the loss of one or more of our key management or operating personnel could result in a loss of institutional know-how. Such loss, or the failure to attract and retain additional key personnel, or such former personnel moving to one of our competitors, could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We may not be able to successfully consummate acquisitions or developments or integrate acquired businesses.

Our industries are highly fragmented and there may be opportunities for us to participate in further consolidation in our industry in the future. In addition, we may organically grow our business through the development of new facilities. However, the restrictions in the 2027 Senior Secured Notes Indenture, the 2026 Senior Secured Notes Indenture and the Senior Notes Indenture (the "**Indentures**") and the 2014 Term Loan Facilities Agreement and the 2020 Term Loan Facilities Agreement (the "**Credit Facility Agreements**") may limit or preclude our ability to make certain future acquisitions or capital expenditures and participate in industry consolidation. To finance future permitted acquisitions or capital expenditures, we may need to borrow money, which will increase our debt service requirements and could impact our ability to make payments on our indebtedness, and we may not be able to obtain acquisition finance on favorable terms or at all. In order to manage any acquisitions we successfully complete, we will need to expand and continue to improve our operational, financial and management information systems, and our increased leverage may limit our ability to do so. Our excess cash may be limited, and we may not be able to invest in the acquired company to achieve the desired synergies.

We may not succeed in identifying attractive acquisition candidates or securing financing on favorable terms. In addition, making acquisitions or integrating any acquired business or development projects may divert too much management attention from the operations or our core businesses, which could adversely affect our business, financial condition and results of operations. In cases where we do proceed with an acquisition, we could be subject to a number of risks, including:

- problems with effective integration of operations, in particular the effective integration of IT systems;
- problems with governance arrangements, in particular for joint ventures;
- the inability to maintain key pre-acquisition business relationships;
- increased operating or capital costs;
- difficulty obtaining regulatory approvals;
- costs related to achieving or maintaining compliance with additional laws, rules or regulations;
- the loss of key employees, including those of the acquired company;
- exposure to unanticipated liabilities; and
- difficulties in realizing projected efficiencies, synergies and cost savings.

For example, in July 2022, our Styrolution Business agreed to establish a new 50:50 joint venture with Sinopec with the intent to build production capacity of up to 1.2 million tonnes of ABS, to meet rapidly growing demand in China. The 600 kiloton ABS plant in Ningbo, which is currently under construction by our Styrolution Business and is planned to be operational by the end of 2023, will become part of the joint venture. If we are unable to successfully integrate these or other facilities, in particular their IT systems, into the operations of our Group for any of the above or any other reasons,

the implementation of our growth strategy could be impaired and our business, financial condition and results of operations could be materially adversely affected. Furthermore, we may not succeed in identifying attractive acquisition candidates or financing and completing potential acquisitions on favorable terms and development projects may experience delays and cost overruns. In addition, we may make investments in joint ventures or Unrestricted Subsidiaries for future acquisitions or development projects. In that case, such joint ventures or Unrestricted Subsidiaries will not be bound by the covenants in the Credit Facility Agreements and the Indentures (including with respect to limitations on indebtedness and restricted payments, including dividends).

Any acquisition process may also give rise to issues surrounding market consolidation, horizontal or vertical integration or appearances of price fixing, which may trigger anti-trust and competition reviews. Violations of such competition laws could lead to legal proceedings, compensatory fines and reputational damage, which may have a material adverse effect on our business, financial condition and results of operations.

The failure of our patents, trademarks and confidentiality agreements to protect our intellectual property could adversely affect our business.

Proprietary protection of our proprietary processes, apparatuses, products and other technologies is important to our business, including our manufacturing activities. Our actions to protect our proprietary rights may be insufficient to prevent others from developing similar products and processes to ours. In particular, we may be unable to secure adequate protection or management of intellectual property during capital investment projects, in particular in new countries and certain of the emerging-markets jurisdictions in which we operate, or when key personnel leave our company to join a competitor, which may weaken our intellectual property rights and undermine our competitive advantages. In addition, the laws of many foreign countries do not protect our intellectual property rights to the same extent as the laws of Germany, the U.S. and the United Kingdom. Furthermore, any pending patent application filed by us may not result in an issued patent, including as a result of objections raised by third parties, or if patents are issued to us, such patents may not provide meaningful protection against competitors or against competitive technologies. Oppositions or other actions initiated by third parties may also limit the scope of our patents and other intellectual property rights, thereby weakening our protection against competitors or against competitive technologies. You should be aware that the expiration of a patent or the failure of our patents to protect our formulations, processes, apparatuses, technology, trade secrets or proprietary know-how could result in intense competition with consequent erosion of profit margins. In addition, our competitors and any other third party may obtain patents that restrict or preclude our ability to lawfully produce, manufacture and market our products in a competitive manner, which could materially adversely affect our business, financial condition, results of operations and cash flows.

We also rely upon unpatented proprietary know-how, other trade secrets and continuing technological innovation to develop and maintain our competitive position. While it is our policy to enter into confidentiality agreements with our employees and third parties to protect our intellectual property, there can be no assurances that:

- our confidentiality agreements will not be breached;
- they will provide meaningful protection for our trade secrets or proprietary know-how; or
- adequate remedies will be available in the event of an unauthorized use or disclosure of these trade secrets and know-how.

In addition, there can be no assurances that others will not obtain knowledge of these trade secrets through independent development or other access by legal means.

In the past we have received communications asserting that our products or their applications infringe on a third party's proprietary rights. Currently, we are not aware of any material pending litigation against us regarding any intellectual property claim, but we cannot assure you that there will not be future claims. Such claims, with or without merit, could subject us to costly litigation and divert our technical and management personnel from their regular responsibilities. Furthermore, if such claims are adversely determined against us, we could be forced to suspend the production and manufacture of products that use the contested invention and our business, financial condition, results of operations and cash flows could be adversely affected.

We may be liable for damages based on product liability claims.

Our products have widespread end uses in a variety of consumer industries, including food packaging and medical applications, and we are at risk of claims arising out of the use of, or exposure to, our products or the chemicals in them. In particular, certain of our customers produce products with food contact applications or medical devices subject to good manufacturing process ("**GMP**") or other legislative requirements. GMP requirements and EU food contact legislation have become increasingly more extensive and complex, which could increase the costs and risk associated with compliance

with such requirements. As with all quality control systems, any failure or deterioration of our quality control systems could result in defects in our projects or products, which in turn may subject us to contractual, product liability and other claims. Any such claims, regardless of whether they are ultimately successful, could cause us to incur significant costs, harm our business reputation and result in significant disruption to our operations. Furthermore, if any such claims were ultimately successful, we could be required to pay substantial monetary damages or penalties, which could have a material adverse effect on our reputation, business, financial condition and results of operations. Regulatory requirements relating to food contact materials have also become increasingly more extensive and complex in recent years. Furthermore, because many of our products, including PVC, caustic soda, caustic potash and chlorine and its derivatives, including ECH, provide critical performance attributes to our customers' applications and products, the sale of their products involves a risk of product liability claims against us, including claims arising out of the use of, or exposure to, our products. Product liability may arise from out-of-specification products, inappropriate use, previously unidentified effects, manufacturing errors resulting in defective products, product contamination, altered product quality or inappropriate safety and health recommendations. While most of our products have some hazardous properties, some of them, such as VCM, require specialized handling procedures due to their acute and chronic toxicity.

In addition, our customers or distributors may not follow our policies and advice regarding the safe use and application of our products, including for food packaging and contact or medical device end uses, which may unknowingly expose us to third-party claims. A successful product liability claim or series of claims arising out of any of these various uses against us could expose us to liability for injury or damage as well as lead to a recall of our products; losses in excess of our insurance coverage for payments for which we are not indemnified or have not otherwise provided could have a material adverse effect on our business, financial condition, results of operations and cash flows. In particular, we could be required to increase our indebtedness or divert resources from other investments in our business in order to discharge any such claims. Additionally, new discoveries about the safety of our products may be made in the future and such discoveries may lead to a substantial decline of the sale of any affected products, both of which could materially affect the profitability of our operations.

We are subject to certain risks related to litigation or other proceedings filed by or against us, and adverse outcomes may harm our business.

We cannot predict with certainty the cost of prosecution, the cost of defense or the ultimate outcome of litigation and other proceedings filed by or against us, including remedies or damage awards, and adverse results in any litigation and other proceedings may materially harm our business. We have been, and in the future may be, involved in litigation and other proceedings relating to intellectual property, commercial arrangements, HSSE, joint venture agreements, mergers and acquisitions, labor and employment, anti-trust, anti-corruption regulations or tax laws and regulations or other harms, including claims resulting from the actions of individuals or entities outside of our control and in certain instances including claims that have resulted or could result in criminal proceedings. In the case of intellectual property litigation and proceedings, adverse outcomes could include the cancellation, invalidation or other loss of material intellectual property rights used in our business, injunctions prohibiting our use of business processes or technology that are subject to third-party patents or other third-party intellectual property rights or the imposition of license fees to be paid to the holders of any such third-party intellectual property rights. Litigation based on environmental contamination or exposure to hazardous substances in the workplace or from our products, could result in material liability and reputational harm for us. Litigation relating to trade sanctions or anti-corruption laws violations could undermine our status as a preferred economic operator (see also "*—We are exposed to the risk of violations of anti-corruption laws, economic and trade sanctions or other similar regulations*"). Litigation relating to competition regulation violations could lead to high-cost litigation and loss of credibility vis-à-vis customers and other third parties. A failure to adequately prepare responses to litigation, arbitration, administrative or other claims brought against us in any venue (including administrative tribunals and local or federal courts), an inability to communicate effectively either externally or internally in moments of crisis or adverse outcomes in any proceedings instituted by or against us could have a material adverse effect on our business.

On September 28, 2019, a cargo of styrene monomer produced by INEOS Styrolution America LLC in Pasadena, Texas and sold FOB Pasadena, Texas to Samsung C&T America Inc. allegedly polymerized while aboard the Stolt Groenland resulting in an explosion while moored in Ulsan, South Korea. On November 19, 2019, INEOS Styrolution America LLC received a notice from counsel to Samsung C&T America Inc. putting INEOS Styrolution America LLC on notice of a potential recourse claim by Samsung C&T America Inc. and their interested insurers against INEOS Styrolution America LLC. On July 28, 2020, INEOS Styrolution America LLC received an e-mail from WK Webster & Co. Ltd., who represents DOW and Olin, each of whom had cargoes on the Stolt Groenland. In its e-mail WK Webster & Co. Ltd. formally placed INEOS Styrolution America LLC on notice of its responsibility and liability for all losses. The Marine Accident Investigation Branch ("**MAIB**") which had investigated the incident also informed INEOS Styrolution America LLC that in mid-November 2019 a separate cargo of styrene monomer produced by INEOS Styrolution America LLC in Pasadena, Texas allegedly showed signs of temperature increases while aboard the Stolt Focus. On November 2, 2020, INEOS Styrolution America LLC received an additional e-mail from WK Webster & Co Ltd. acknowledging receipt of INEOS Styrolution America LLC's response and asking for assistance in gathering information for possible litigation against Stolt. On November 9, 2020, the MAIB held a conference call to review the results of its

investigation. On July 16, 2021, the MAIB issued their final report on these matters, which was consistent with the discussions held on the November 9, 2020 conference call. There has been no further activity on these matters since the issuance of the report, and by now, these matters are closed.

The Acetyls Business has also recently been the subject of a tax audit in Trinidad and Tobago relating to the years 2005-2013, which focused on various fixed price contracts used to mitigate risk resulting from the volatile prices of products produced at its Atlas site. A final hearing before the Trinidad and Tobago Tax Appeal Board was held on February 4, 2020. The decision of the Tax Appeal Board is appealable by the Acetyls Business and the Trinidad and Tobago Board of Inland Revenue. As of December 31, 2022, our Acetyls Business' share of exposure as a result of this tax audit is approximately $309 million. This tax exposure is covered by an indemnity from BP. See "Business—Legal Proceedings."

We may be affected by changes in tax laws or their application or interpretation or scrutiny of transactions by tax authorities, and could be subject to tax risks attributable to previous tax assessment periods.

Our tax burden is dependent on certain aspects of tax laws across several different jurisdictions and their application and interpretation. For the years ended December 31, 2020 and December 31, 2021, the enacted UK corporation tax rate applicable to the Group was 19%. It is currently expected that the UK corporation tax rate will increase to 25% from April 1, 2023. In addition, we are subject to routine tax audits in the jurisdictions in which we operate. Changes to our taxes as a result of these or other changes in tax laws or their application or interpretation or in the course of such audits may lead to an increased overall tax rate for our Group as a whole. If we were to be the subject of a tax audit, additional tax expenses could accrue at the level of the Parent or its subsidiaries in relation to previous tax assessment periods which have not yet been subject to a tax audit. The realization of any of these risks could have a material adverse effect on our business, financial condition and results of operations. In future tax audits, the tax laws and/or relevant facts could be interpreted by the tax authorities in a manner that deviates from our view. As a result, the tax authorities could revise original tax assessments and substantially increase the tax burden (including interest and penalty payments) of the affected entities of our Group. For example, the Styrolution Business has been the subject of a tax audit in Italy in 2019 relating to the years 2011 through 2017, which focused on whether certain of our German and Swiss subsidiaries entertained permanent establishments in Italy, which would have made them liable to pay certain taxes in Italy. Such audit also resulted in the initiation of a criminal investigation, with prosecutors alleging an unlawful failure to file tax returns in the relevant years. The Italian tax audit was concluded by settlement with the Italian tax authorities in December 2019, which included payment by the Styrolution Business of approximately €7.5 million in taxes, interest and penalties. The criminal proceedings were closed by court dismissal in 2021 without any adverse outcome, for Styrolution or any of its representatives. The Acetyls Business has been the subject of a tax audit in Trinidad and Tobago relating to the years 2005-2013, which focused on various fixed price contracts used to mitigate risk resulting from the volatile prices of products produced at our Atlas site. A final hearing before the Trinidad and Tobago Tax Appeal Board was held on February 4, 2020. The decision of the Tax Appeal Board is appealable by the Acetyls Business and the Trinidad and Tobago Board of Inland Revenue. As at December 31, 2022, our Acetyls Business' share of exposure as a result of this tax audit is approximately $309 million. This tax exposure is covered by an indemnity from BP. Within our INOVYN Business, our Norwegian subsidiaries were subject to a tax audit covering the period 2012 and 2013, focusing on the interest rate charged on the cash pooling arrangement between our Norwegian and UK entities. A reassessment decision by the tax office levied NOK 70 million in December 2017. The decision was subsequently appealed, but the ruling of the Norwegian Tax Appeals board in 2022 resulted in no change. Moreover, a tax audit of INOVYN's German subsidiaries covering 2016 and 2017 resulted in a reassessment decision of €1.0 million being levied in 2022 which was settled in full. Any future audits or investigations resulting in additional tax liabilities or penalties could adversely impact the tax position of the Group and have a material adverse effect on our financial position.

Furthermore, the Organisation for Economic Co-operation and Development ("**OECD**"), together with the G20 countries, has committed to reduce perceived abusive global tax avoidance, referred to as base erosion and profit shifting ("**BEPS**"). The OECD published its final reports in relation to its Action Plan on BEPS on October 5, 2015, which were endorsed at the G20 summit in November 2015, and the multilateral instrument to implement tax treaty related measures to prevent BEPS was published on November 24, 2016. As part of this commitment, an Action Plan has been developed to address BEPS with the aim of securing tax revenue by realigning taxation with economic activities and value creation by creating a single set of consensus based international tax rules. As part of the BEPS project, new rules dealing with the operation of double tax treaties, the definition of permanent establishments, interest deductibility and the taxation of hybrid instruments and hybrid entities have already been introduced and will continue to be introduced in relevant tax legislation of participating OECD countries. Depending on if and how these proposals are implemented, they may result in material changes to tax laws which can impact the tax treatment of income and gains arising at the level of the Parent or its subsidiaries, which may adversely impact how the returns to investors are taxed. Such implementation may also give rise to additional reporting and disclosure obligations for the Parent or its subsidiaries and investors.

In the context of national implementation of certain BEPS measures, the EU has adopted the Council Directive (EU) 2016/1164 of July 12, 2016 ("**ATAD 1**") that addresses some of the items of the BEPS project, including among others hybrid mismatch rules, interest deduction limitation, controlled foreign companies ("**CFC**") rules, as well as provisions which are not linked to the BEPS project, such as exit taxation and a general anti-avoidance rule. The ATAD 1 grants EU member states certain options in the implementation of the directive into their domestic laws.

The United Kingdom implemented ATAD 1 into its national law effective January 1, 2019. The U.K tax legislation was already broadly in compliance with the requirements under ATAD 1 and the United Kingdom implemented amendments to its tax legislation to make it fully compliant through the enactment of the Finance Act 2016 and the Finance Act 2019.

On May 21, 2021, the German legislator passed a draft bill to implement Articles 5, 7, 8, 9 and 9b of ATAD 1 and 2 (the "**ATAD Implementation Act**"). The German Federal Council passed the ATAD Implementation Act on June 25, 2021. Prior to the passing of the ATAD Implementation Act, German tax laws already included provisions dealing with many of the measures specified under ATAD 1, such as the interest deduction limitation rules or a general anti-abuse rule, and further measures have also been passed by the German parliament. The ATAD Implementation Act provides for significant changes to the German taxation of cross-border transactions, and in certain areas also includes further measures beyond those required under the ATAD.

The ATAD Implementation Act contains provisions addressing hybrid mismatch arrangements. Expenses on the use of capital, for instance, are not deductible if the corresponding profits are not subject to a tax that is comparable to German taxation. It applies to the deduction or non-inclusion of hybrid instruments like hybrid bonds or participation rights, where payments on hybrid instruments are deductible in the state of the payer (deduction) but the state of the recipient does not qualify the payments as taxable income (no inclusion) (D/NI scenario). In these cases, section 4k of the German Income Tax Code (*Einkommensteuergesetz*) shall deny the deduction at the level of the payer (primary measure by way of denial of deduction). The new law regarding hybrid mismatch arrangements shall apply retroactively from December 31, 2019 and shall in principle affect all expenses made after December 31, 2019. An exception only applies if the legal basis for such expenses has been established before December 31, 2019.

Furthermore, the ATAD Implementation Act also includes a new and quite far-reaching version of the German CFC rules. The new rules will have a wider scope. Not only the holders of shares but also the holders of certain other equity instruments will qualify as related parties for CFC purposes. Most notably, dividend income constitutes passive income if the payments are tax deductible at the level of the payer or if the taxpayer does not own at least 10 per cent of the shares in the payer. However, the threshold for low taxation still is at 25 per cent, *i.e.*, foreign passive income will be subject to the CFC rule if it is taxed at an effective tax rate below 25 per cent in the source country. The new regulations applied for the first time for the tax year 2022.

In addition, a new law on the modernization of withholding tax relief and certification of withholding tax (*Abzugsteuerentlastungsmodernisierungsgesetz*), which also contains changes with regard to transfer pricing rules, came into force in June 2021. The new law provides for changes to the German interpretation of the arm's length standard and German transfer pricing documentation rules. It aims to update the German transfer pricing rules with a view to reflect recent international developments (mainly the BEPS initiative). The new law also anchors the DEMPE (development, enhancement, maintenance, protection and exploitation of intangibles) concept in German law. Furthermore, there are new regulations regarding advance pricing agreements available. While the original draft of the new regulations also included provisions regarding intra-group financial transactions, the German legislature implemented the new regulations without the inclusion of the proposed changes regarding intra-group financial transactions.

On February 21, 2017, the Economic and Financial Affairs Council of the EU reached political agreement on amendments to ATAD 1 to neutralize hybrid mismatch structures involving non-EU countries (Council Directive (EU) 2017/952 of 29 May 2017, "**ATAD 2**"). While ATAD 1 contains rules combatting certain hybrid mismatches between EU Member States, ATAD 2 introduces more detailed rules to neutralize hybrid mismatches and extends the scope to (i) a variety of other mismatches between EU Member States and (ii) mismatches between EU Member States and third countries. The more extensive anti-hybrid rules in the ATAD 2 replace the initial rules to counter hybrid mismatch arrangements set out in the ATAD 1. ATAD 2 provisions were required to be implemented by EU Member States into domestic law by December 31, 2019, such that the rules apply no later than January 1, 2020.

Such initiatives on BEPS may create increased uncertainty as to the treatment of our Group sales, in particular in the area of transfer pricing and the appropriate share of Group profit to be attributed to sales-related activities in the local markets in which we operate. In particular, the definition of a Dependant Agency Permanent Establishment under the OECD BEPS initiative has been implemented in a heterogeneous manner by various EU jurisdictions and their respective tax authorities, which causes substantial uncertainty as to the tax treatment of business operations and could lead to future tax assessments, such as the assessment to which we were subject in Italy, as described above. If we are unable to predict accurately how relevant tax authorities will treat our transfer pricing models or we were deemed to have a permanent

establishment in certain countries where we make sales, this could adversely impact the tax position of the Group and have a material adverse effect on our financial position.

We also undertook to restructure the transfer pricing policies of our INOVYN Business in 2017 in order to comply with BEPS and have reorganized our transfer pricing model from a full manufacturer model, in which each of our subsidiaries assumes the full risks and rewards of its operations, to a toll manufacturer model, in which (subject to limited exceptions) each operating subsidiary manufactures on a 'cost plus' fee basis for a single principal entity, INOVYN Europe Limited (including its Belgian branch, which acts as entrepreneur on behalf of the INOVYN Business), which assumes all of the risk of our business activities. As a result of these changes, future taxable profits in each of our operating jurisdictions will change (in some cases moving from a higher tax jurisdiction to a lower one and vice versa) and such changes may be subject to review and challenge by the relevant tax authorities. If any such tax authority were to challenge our arrangements, including with respect to exit charges, we could face a higher tax burden and be subject to tax penalties or fines, which could have a material adverse impact on our business, financial condition, results of operations and cash flows. To date, only the Norwegian tax authority has challenged our trading model, specifically the exit charge compensation payable to the Norwegian tolling entity from INOVYN Europe Limited, with a reassessment notice being received in November 2022. We intend to respond to the reassessment notice with strong arguments in our favor and are prepared to pursue an appeal and legal routes if necessary.

The European Commission has also published a corporate reform package proposal on October 25, 2016 including three new proposals that aim at (i) re-launching the Common Consolidated Corporate Tax Base ("**CCCTB**") which is a single set of rules to compute companies' taxable profits in the EU, (ii) avoiding loopholes associated with profit-shifting for tax between EU countries and non-EU countries, and (iii) providing new dispute resolution rules to relieve problems with double taxation for businesses. The directive proposal on the CCCTB requires unanimity in the EU Council for its adoption following consultation of the European Parliament (special legislative procedure), which gave its favorable vote on March 15, 2018.

Such changes or proposed changes in tax laws could adversely impact the tax position of the Group and investors in the Group's securities and give rise to additional reporting and disclosure obligations, which could increase our costs and have a material adverse effect on our financial position.

We may be required to make further contributions to pension plans.

We provide defined benefit pension plans to certain eligible employees, and these plans are subject to legislative and regulatory requirements. Our pension expense and required contributions to our pension plans are directly affected by the funded status of our plans, the discount rate used to measure pension obligations, the level of plan assets available to fund those obligations at the measurement date, the expected rate of return on plan assets and the actuarial assumptions we use to measure our defined benefit pension plan obligations. Significant changes in investment performance or the expected rate of return on plan assets or in the portfolio mix of invested assets may result in corresponding changes in the funded status of our plans, the valuation of plan assets (particularly equity securities) or in a change of the expected rate of return on plan assets. Any decrease in interest rates will result in an increase of pension liabilities. Any change in key actuarial assumptions, such as the discount rate, would impact the valuation of pension obligations, affecting the reported funded status of our pension plans as well as the net periodic pension cost in the following fiscal years. Any declines in the fair values of the pension plans' assets could require additional payments by us in order to maintain required funding levels. Our funding policy for pension plans is to accumulate plan assets that, over the long run, will approximate the present value of projected benefit obligations. We cannot predict whether changing market or economic conditions, regulatory changes or other factors will further increase our pension expense or funding obligations, diverting funds we would otherwise apply to other uses.

We depend on good relations with our workforce, and any significant disruption could adversely affect us.

As of December 31, 2022, around the world, the Styrolution Business employed approximately 3,000 employees, the INOVYN Business employed approximately 4,200 employees, the Aromatics Business employed approximately 1,100 employees and the Acetyls Business employed approximately 345 employees (in each case, measured as full-time equivalents and excluding joint venture employees). Many of these employees are unionized, and most of our employees in Europe are represented by works councils which generally must agree to changes in conditions of employment, including salaries and benefits. See "*Business—Employee Matters—Trade unions*." A labor disturbance or work stoppage at any of our facilities as a result of any changes to our employment terms and conditions, inadequate communication between staff and management, employee dissatisfaction or for any other reason could have a material adverse effect on that facility's operations and, potentially, on our business, financial condition, results of operations and cash flows. During recent years, strikes have been the result of participation in national strikes, with the exception of one seven-day incident at our INOVYN facility in Tavaux, France in 2014. Additionally, any failure to observe relevant labor laws or apply human resources policies relating to discrimination, harassment, working hours regulations and other working conditions could result in reputational damage, administrative or civil claims or fines, any of which could have a material adverse effect on our

business, financial condition and/or results of operations.

We also use independent contractors to provide us with certain technical assistance and services. In certain cases, we may exercise limited control over the activities and business practices of these providers and any inability on our part to maintain satisfactory commercial relationships with them or their failure to provide quality services (including as a result of work stoppages or labor disturbances at such providers) could materially and adversely affect our business, prospects, financial condition and results of operations.

Risks Relating to Our Indebtedness and Our Capital Structure

Significant indebtedness—Our level of indebtedness could adversely affect our ability to react to changes in our business, and we may be limited in our ability to fulfill our debt obligations and use debt to fund future capital needs.

We are significantly indebted as of December 31, 2022, and have financial indebtedness of €6,391.7 million and lease liabilities of €289.3 million as compared to total equity of €4,648.6 million. In addition, as of December 31, 2022 we had €840 million available for future borrowings under the unused portions of the Securitization Programs. Our substantial indebtedness could have important consequences to holders of the 2026 Senior Secured Notes, the 2027 Senior Secured Notes and the Senior Notes (the "**Notes**") and lenders under the Credit Facility Agreements by adversely affecting our financial position, including, but not limited to:

- requiring us to dedicate all of our cash flow from operations (after the payment of operating expenses) to payments with respect to our indebtedness, thereby reducing the availability of our cash flow for working capital, capital expenditures, acquisitions, joint ventures, product research and development, and other general corporate expenditures;
- increasing our vulnerability to, and reducing our flexibility to respond to, adverse general economic or industry conditions;
- limiting our flexibility in planning for, or reacting to, competition or changes in our business or industry;
- limiting our ability to borrow additional funds and increasing the cost of any such borrowing;
- restricting us from making strategic acquisitions or exploring business opportunities; and
- placing us at a competitive disadvantage relative to competitors that have less debt or greater financial resources.

Any of these or other consequences or events could have a material adverse effect on our ability to satisfy our debt obligations, including with respect to the Notes and the loans under the Credit Facility Agreements (the "**Loans**"). Our ability to make payments on and refinance our indebtedness will depend on our ability to generate cash from our operations. Our ability to generate cash from operations is subject, in large part, to general economic, competitive, legislative and regulatory factors and other factors that are beyond our control. We may not be able to generate enough cash flow from operations nor obtain enough capital to service our debt or fund our planned capital expenditures.

In addition, we may be able to incur substantial additional debt in the future, including indebtedness in connection with any future acquisition and indebtedness in connection with any inventory financing or similar arrangement. The terms of the Indentures and the Credit Facility Agreements will permit our subsidiaries to do so, in each case, subject to certain limitations. If new debt is added to our current debt levels, the risks that we now face could intensify. Moreover, some of the debt we may incur in the future could be structurally senior to the 2026 Senior Secured Notes and the 2027 Senior Secured Notes (the "**Senior Secured Notes**") and the Loans or the Senior Notes and may be secured by collateral that does not secure the Notes or the Loans.

For further information regarding our substantial leverage and for more information about our outstanding indebtedness, see also "*Operating and Financial Review and Prospects*" and "*Description of Certain Indebtedness*."

Securitization Programs—We use the Securitization Programs to meet some of our liquidity requirements and are subject to various terms and conditions under the Securitization Programs, which, if we are unable to comply with them, could result in the acceleration of our debt.

The Styrolution Securitization Program and the INOVYN Securitization Program will both mature in June 2024. Along with cash generation from operating activities, we satisfy our short-term liquidity needs with amounts available under the Securitization Programs. Our ability to refinance the Securitization Programs could be affected by a number of factors, including volatility in the financial markets, contractions in the availability of credit, including in interbank lending,

and changes in investment markets, including changes in interest rates, exchange rates and returns from equity, property and other investments. Our liquidity will be adversely affected if we are unable to refinance the Securitization Programs on acceptable terms or at all, and we can provide no assurance that we will be able to do so.

The availability under the Securitization Programs varies depending on the underlying receivables. For a more detailed discussion, please see "*Description of Certain Indebtedness—The Styrolution Securitization Program*" and "*Description of Certain Indebtedness—The INOVYN Securitization Program*." In addition, the Securitization Programs contain various terms and conditions, and if we fail to comply with these terms and conditions, a default may occur under the Securitization Programs. If a default occurs under the Securitization Programs, we may need to fund our working capital requirements from other sources.

Ability to repay and service debt—To repay or refinance and service our debt, we will require a significant amount of cash.

Our ability to make principal or interest payments when due on our indebtedness, including the Notes and Loans, will depend upon our future performance and our ability to generate cash. Our ability to generate cash depends on many factors beyond our control. The ability of our subsidiaries to transfer monies upstream to us, as well as to pay operating expenses and to fund planned capital expenditures, any future acquisitions and research and development efforts, will depend on our businesses' ability to generate cash in the future, as well as limitations that may be imposed under applicable law. This, to an extent, is subject to general economic, financial, competitive, legislative, regulatory and other factors, including those factors discussed in this "*Risk Factors*" section or elsewhere in this annual report, many of which are beyond our and our subsidiaries' control. Please see "*Selected Combined Financial Information*" and "*Operating and Financial Review and Prospects*". If we sustain losses in the future, our ability to repay and service our debt may be materially impaired.

If we are unable to generate sufficient cash flow to meet our payment obligations, we may be forced to reduce or delay planned expansions or capital expenditures, sell significant assets, discontinue specified operations, obtain additional funding in the form of debt or equity capital or attempt to restructure or refinance all or a portion of our debt on or before maturity. We cannot assure you that we would be able to accomplish any of these alternatives on a timely basis or on commercially reasonable terms, if at all. In addition, the terms of our debt, including the 2026 Senior Secured Notes, the 2027 Senior Secured Notes, the 2014 Term Loan Facilities Agreement, the 2020 Term Loan Facilities Agreement and the Senior Notes will limit our ability to pursue any of these alternatives. If we are unsuccessful in any of these efforts, we may not have sufficient cash to meet our obligations.

Controlling shareholders—The interests of our principal shareholders may conflict with your interests.

Messrs. Ratcliffe, Currie and Reece own INEOS Limited, our ultimate parent holding company. Mr. Ratcliffe controls INEOS Limited. Our controlling shareholder has power to elect all of the directors of our companies, to change their management, to approve any changes to their organizational documents, and to approve any acquisitions or dispositions. As a result, his actions can affect our strategic decisions, including the payment of dividends the size of which may change or increase from time to time and may not necessarily be in line with past practice, our legal and capital structure and our day-to-day operations. In addition, our principal shareholders may have an interest in pursuing acquisitions, divestitures or other transactions, including repurchases of our debt, on the open market or otherwise, that, in their judgment, could enhance their equity investment, even though these transactions might involve risks to you. In the event of a conflict of interest between you and our principal shareholders, their actions could affect our ability to meet our payment obligations to you.

Interest rate risks—Certain of our borrowings bear interest at floating rates that could rise significantly, increasing our interest cost and reducing cash flow.

A substantial part of our indebtedness, including borrowings under the 2020 Term Loan Facilities Agreement and the 2014 Term Loan Facilities Agreement, bears interest at per annum rates depending on EURIBOR, SOFR and similar benchmarks, in each case adjusted periodically, plus a spread. Furthermore, we may incur additional indebtedness that bears interest at a floating rate. These interest rates could rise significantly in the future, thereby increasing our interest expenses associated with these obligations, reducing cash flow available for capital expenditures and hindering our ability to make payments on our indebtedness.

Changes or uncertainty in respect interest rate benchmarks may affect our sources of funding. *This risk factor and the preceding one have been updated to account for the SOFR-amendments to the Credit Agreements under the assumption that those will become effective prior to the publication of this annual report.*

Some of our sources of funding are linked to certain interest rate benchmarks, including SOFR and EURIBOR. See "*Description of Certain Indebtedness—2020 Term Loan Facilities Agreement*" and "*Description of Certain Indebtedness—2014 Term Loan Facilities Agreement*". Various interest rate benchmarks are the subject of recent national and international regulatory guidance and proposals for reform, including the EU Benchmarks Regulation (Regulation (EU) 2016/1011). The Bank of England has established now the Sterling Over Night Index Average rate (SONIA) as the primary sterling interest rate benchmark in replacement of sterling LIBOR, and the publication of the one-week and two-month LIBOR for US dollars ceased immediately after December 31, 2021. In addition, immediately after June 30, 2023, publication of the overnight and 12-month LIBOR for US dollars and the one-month, three-month and six-month LIBOR for US dollars is expected to be discontinued. As a result of these developments, the 2020 Term Loan Facilities Agreement and the 2014 Term Loan Facilities Agreement were amended in March and April 2023, respectively, to accommodate the phase-out of LIBOR for US dollars.

Any further significant change to the setting or existence of alternative interest rate benchmarks could affect the ability of amounts available to us to meet our obligations under our sources of funding and/or could have a material adverse effect on the value or liquidity of, and the amount payable under, our sources of funding, including our ability to make payments on the Notes and the Loans. The discontinuation of, or changes in the manner of administration of, interest rate benchmarks could result in adjustment to the conditions applicable to our sources of funding or other consequences as relevant to our sources of funding including, without limitation, early redemption, discretionary valuation, delisting or other consequences. No assurance can be provided that relevant changes will not be made to relevant benchmark rates and/or that such benchmarks will continue to exist. Furthermore, under the 2020 Term Loan Facilities Agreement and the 2014 Term Loan Facilities Agreement, the relevant administrative agent and borrowers are required to endeavor to establish an alternate rate of interest to SOFR or EURIBOR in certain circumstances such as when the administrative agent determines that SOFR or EURIBOR is not available or if the supervisor for the administrator of SOFR or EURIBOR or a governmental authority having jurisdiction over the administrative agent publicly announces a specific date after which SOFR or EURIBOR shall no longer be used for determining interest rates for loans denominated in the applicable currency.

The Group may incur additional indebtedness, which indebtedness could increase its leverage and may have terms that are more or less favorable than the terms of the Group's existing indebtedness.

The Group or its subsidiaries may incur substantial additional debt. Prior to the maturity of the Notes and the loans under the 2014 Term Loan Facilities Agreement, we will be required to refinance or repay certain other debt, including certain obligations under the 2020 Term Loan Facilities Agreement. In connection with the Group's financial strategy, the Group continually evaluates different financing alternatives, and the Group may decide to enter into new credit facilities, access the debt capital markets or incur other indebtedness from time to time. Any such offering or incurrence of debt will be made at the Group's election or the election of its relevant subsidiaries, and if such debt is in the form of securities, would be offered and sold pursuant to, and on the terms described in, an offering memorandum. The interest rate with respect to any such additional debt will be set at the time of the pricing or incurrence of such debt and may be less than or greater than the interest rate applicable to the Group's existing debt, including, in the case of a refinancing, the debt that is being refinanced, which would have a corresponding effect on the Group's cash interest expense on a pro forma basis. In addition, the maturity date of any such additional debt will be set at the time of pricing or incurrence of such debt and may be earlier or later than the maturity date of the Group's existing debt. The other terms of such additional debt would be as agreed with the relevant lenders or holders thereof and could be more or less favorable than the terms of the Group's existing indebtedness. There can be no assurance that the Group will elect to raise any such additional debt or that any effort to raise such debt will be successful, and there can be no assurance as to the timing of such offering or incurrence, the amount or terms of any such additional debt. If the Group incurs new debt in addition to its current debt, the related risks that the Group now faces, even in a refinancing transaction, as described above and elsewhere in these "*Risk Factors*", could intensify. If we are unable to obtain new debt financing as needed, we would have to consider other options, such as selling assets; restructuring all or a portion of our debt before maturity; obtaining additional equity capital; foregoing opportunities such as acquisitions; or reducing or delaying our business activities and capital investments.

OPERATING AND FINANCIAL REVIEW AND PROSPECTS

This summary highlights selected information contained elsewhere in this annual report. It is not complete and does not contain all the information that you should consider before investing in the notes. The following summary should be read in conjunction with and is qualified in its entirety by the more detailed information included elsewhere in this annual report. You should read the entire annual report, including the more detailed information in the financial information and the related notes included elsewhere in this annual report, before making an investment decision. See the section entitled "Risk Factors" for factors that you should consider before investing in the notes and the section entitled "Forward-Looking Statements" for information relating to the statements contained in this annual report that are not historical facts.

Overview

We are a leading global petrochemicals producer, marketer and merchant. Our business operates 45 manufacturing sites in 18 countries in the Americas, Europe and Asia. We have a strong global footprint and leading market positions with respect to our key products. Our business benefits from cost advantages as a result of operating large-scale, highly integrated facilities strategically located near major transportation routes and customer locations.

We operate our business through four business segments: the Styrolution Business, the INOVYN Business, the Aromatics Business and the Acetyls Business. The products we manufacture are derived from crude oil and natural gas and salt, and include styrene, vinyls, aromatic chemical compounds and organic compounds. Our products serve a broad and diverse range of end markets, including packaging, construction, automotive, electronics, household, textiles, agrochemicals and healthcare. We benefit from the cost advantages of operating large scale, well invested, highly integrated facilities strategically located near major transportation facilities and customer locations. We and our predecessors have invested significantly in our production facilities to ensure that they operate efficiently, resulting in integrated, and state of the art production units. We believe these investments allow us to operate at lower cost and higher utilization rates than most of our competitors, and enable us to maintain positive margins and cash flows even during downturns in industry cycles or customer demand. For the twelve-month period ended December 31, 2022, our revenue was €18,172.3 million and EBITDA before exceptional items was €2,572.4 million. Cost savings initiatives represent a core principle of our business model and our strategy to achieve those are outlined in detail in the Strategy section.

Over the past several years, we have implemented a range of strategic initiatives designed to lower our operating costs, increase our profitability and further enhance our market position. These include fixed asset investments to expand our capacity in higher value products, to enhance productivity at our existing facilities, and to reduce our fixed cost structure through headcount reductions, production line closures and system upgrades. In addition, we have shifted our product portfolio to focus on more differentiated products, exited low-margin businesses and implemented premium pricing strategies designed to improve our margins. We believe these initiatives provide us with a strong platform to drive growth, create significant operating leverage and position us to benefit from volume recovery in our end markets.

Key Factors Affecting Our Businesses

Our results from operations are driven by a combination of factors affecting the petrochemicals industry generally. The main factors are general economic conditions, prices of raw materials and energy, global supply and demand for our products and environmental legislation and initiatives. Our results from operations are also impacted by company-specific structural and operational factors. Set forth below is an overview of the key drivers that have affected the historical results of operations and are expected to affect our future results from operations.

Debt structure

As of December 31, 2022, we had €6,391.7 million of financial indebtedness and €289.3 million of lease liabilities, including €1,868.7 million under Senior Secured Notes, €500.0 million under Senior Notes, and €3,981.2 million under the Term Loan B Facilities. Our future results of operations, and in particular our net finance costs, will be affected by the amount of indebtedness we carry, including the interest we pay on our indebtedness. The servicing of this indebtedness will impact, among other things, our cash flows and our cash balance.

Supply and demand in the Petrochemicals Industry

Margins in the petrochemicals industry are strongly influenced by industry utilization rates. As demand for petrochemical products approaches available supply, utilization rates rise, and prices and margins typically increase. Historically, this relationship has been highly cyclical due to fluctuations in supply resulting from the timing of new investments in capacity and general economic conditions affecting the relative strength or weakness of demand. Generally, capacity is more likely to be added in periods when current or expected future demand is strong and margins are, or are expected to be, high. Investments in new capacity can result, and in the past frequently have resulted, in overcapacity,

which typically leads to a reduction of margins. This is currently the case with respect to PTA, especially in Asia. In response, marginal cost producers typically reduce production rates and new capacity additions reduce, eventually causing the market to be relatively undersupplied.

On the demand side, global macroeconomic uncertainties can cause material weakening and have a negative impact on demand and margins. After several years of higher mid-cycle and top of cycle trading conditions, the petrochemicals industry was adversely affected by the reduction in global economic growth in 2019, mainly as a result of U.S. trade regulation policies, weaker China growth and reduced demand from the automotive industry. In addition, in 2020, the petrochemicals industry was further adversely affected by the COVID-19 pandemic, including as a result, lower PVC and styrenics demand due to lower activity in the building, automotive and construction sectors and lower PTA demand from polyester applications, including, but not limited to, in the apparel, home furnishing, beverage and automotive sectors. The petrochemicals industry subsequently recovered to top-of-cycle conditions in the second half of 2020, 2021 and the first half of 2022 due to the re-opening of economies and global supply shortages. In the second half of 2022, the petrochemicals industry was negatively impacted by the effect of higher energy, commodity and borrowing costs resulting from the conflict in Ukraine, which are still in effect at the beginning of 2023. In addition to the global petrochemicals cycles, margins are also susceptible to potentially significant swings in the short term. This volatility for a particular product, which may be global or isolated in individual regions, can be caused by a number of factors, including fluctuations in utilization rates due to planned or unplanned facility outages or new capacity coming on-stream, political and economic conditions driving rapid changes in prices for key feedstocks, exchange rate fluctuations, supply chain interruptions, lockdowns and changes in inventory management policies by petrochemicals customers (such as inventory building or de-stocking in periods of expected price increases). By way of example, PX margins in North America and to a lesser extent in Europe came under pressure from the second quarter of 2020 onwards as government-imposed restrictions on mobility reduced demand for refinery products and the availability of feedstock for the manufacture of PX (now largely reversed). The supply constraint was exacerbated in the U.S. following a more active than normal hurricane season, which temporarily reduced output further in the U.S. Gulf. In the Acetyls Business, the strong performance of 2021 continued into 2022 but market conditions changed as the year progressed. A combination of on-going Covid restrictions, particularly in China, the conflict in the Ukraine, escalating energy costs particularly in Europe, and global inflation and recessionary pressures, all combined to lengthen supply and lower margins. Global markets are expected to return to normal during 2023.

Asset utilization

Our results of operations are materially influenced by the degree to which we utilize our assets in order to achieve maximum production volumes. As a low-cost producer, we aim to operate our facilities at full capacity. We believe this allows us to maintain positive margins and cash flows, even during downturns in industry cycles or customer demand, more readily than some of our competitors who have higher production costs. We intend to achieve growth in production volume by improving utilization rates within the defined availability of an asset, improving availability of an asset by minimizing planned and unplanned facility downtime and improving capacity of an asset through de-bottlenecking projects. For example, in the Aromatics Business, a low cost de-bottleneck project in Merak, which was completed in May 2021, provided the additional advantage of reducing PTA manufacturing cost across the entire output of the plant, as well as improving asset integrity. In addition, we believe opportunities exist to improve reliability of PTA assets in Cooper River and Geel.

The number and length of turnarounds (scheduled outages of a unit in order to perform necessary inspections and testing to comply with industry regulations and to permit us to carry out any maintenance activities that may be necessary) carried out in any given period can also impact operating results. When possible, we seek to schedule the timing of turnarounds to coincide with periods of relatively low demand for the products of the relevant units. In the Styrolution Business, our four SM facilities typically undergo major turnarounds every three to five years, with each turnaround lasting four to six weeks. In 2022, the planned turnaround of the Styrolution Business' largest styrene unit in Bayport, Texas was completed in early 2022, also the turnaround at the Styrolution Business's Sarnia, Canada facility. PS, ABS and Specialties facilities are subject to a somewhat shorter turnaround cycle, usually in annual or biannual cycles. In 2022, we performed planned turnarounds at our polymers production sites in Altamira, Mexico, Cologne, Germany, Channahon, Illinois and Decatur, Georgia. In 2023, our SM facility in Texas City, USA, will undergo its scheduled turnaround. There will be planned turnarounds at our polymers production Sites in Channahon, USA, Decatur, USA, Altamira, Mexico, Ludwigshafen, Germany, Ulsan, Korea, Yeosu, Korea, Map Tha Put, Thailand and Ningbo, China. In the INOVYN Business, VCM crackers typically undergo major turnarounds every two to four years, with each turnaround lasting six weeks. Similarly, cell rooms used in chlor-alkali production typically undergo major turnarounds lasting two to four weeks every one to three years. Chlorine derivative plants have turnarounds every two to three years lasting three to four weeks. Turnarounds for PVC plants are more frequent, typically every one to two years, but generally last only one to two weeks, with one exception which occurs every three years lasting three weeks. In the Acetyls Business, we have no planned turnarounds at our Hull site. The next planned turnaround will be in the second quarter of 2024. We currently expect these improvement projects to allow us to generate variable cost savings and increased capacity that could result in an annual run-rate uplift to EBITDA, assuming sufficient demand to absorb the additional capacity. In the Aromatics Business, PX

plant turnarounds are scheduled every five years with an aspiration to extend the period to six. PTA events occur every 24 to 30 months. Extending this period to 36 months is possible but would require further investment. In 2021, turnarounds were completed at the Cooper River PTA2 facility, Merak PTA facility and Zhuhai PTA3 facility. In 2022, a turnaround at the Geel PTA3 facility was executed in March and April, along with a turnaround at the Zhuhai PTA2 facility in the fourth quarter of 2022.

Likewise, unplanned outages or unforeseen transportation interruptions can impact our operating results, even if such outages or interruptions are covered by insurance. Similarly, planned or unplanned outages of our competitors can positively affect our operating results by decreasing the supply of product in the market. For example, in the second quarter of 2022, the financial performance of the INOVYN Business was negatively impacted by the delay in the re-start of its VCM and PVC operations at Rafnes, Norway following a key turnaround event. The turnaround event started at the end of April 2022 and was planned to come back online at the end of May, but due to unforeseen technical issues, production of general purpose PVC could not re-start until the end of June. In addition, our Styrolution Business had to declare an event of *force majeure* relating to styrene, ABS, polystyrene and ASA produced at our sites in Texas City, Bayport, Altamira, Decatur and Channahon after winter storm Uri in February 2021, which led to a widespread power outage in the Houston area and our Styrene facilities in Bayport and Texas City experienced an emergency shutdown. The Bayport and Texas City facilities had to repair extensive damage and restarted in early April 2021. Styrene availability in the U.S. was severely reduced as other producers were also affected. Accordingly, polystyrene, ABS and ASA production at our facilities was curtailed. The force majeures were lifted on May 6, 2021 for styrene monomer, June 4, 2021 for polystyrene and December 17, 2021 for ABS and ASA.

Unforeseen transportation interruptions can also impact the Group's operating results. For example, during the COVID-19 pandemic, we have experienced delayed shipments to customers due to logistics constraints, including container and driver shortages and, particularly in Asia, the closure of local borders. In addition, on September 5, 2017, the Styrolution Business declared an event of force majeure with respect to PS and Terluran ABS deliveries to Italy and Switzerland after the rail tracks at Rastatt, Germany, were severely damaged due to tunnel construction work, and rail traffic on such route was stopped. Almost all of the cargo shipments from the Styrolution Business's European production sites to customers located in Italy and Switzerland are shipped via rail on the route through Rastatt, Germany, and as a result the Styrolution Business's shipments of PS and Terluran ABS products to customers located in such countries were severely curtailed for approximately two months. Our INOVYN Business has also been impacted by temporary strikes in December 2019 by SNCF (railroad workers) in France and by Antwerp harbor employees as well as a general strike in France which blocked haulers, forcing a slowdown of production at Tavaux and strikes at Spanish and Swedish ports which blocked shipping out of the Martorell and Stenungsund facilities for several days to export destinations.

Implementation of cost reduction

We have historically focused on implementing our strategies of reducing costs by making rapid reductions in underlying fixed costs, shutting down inefficient assets, optimizing sourcing and in-sourcing functions, implementing efficient corporate and management structures and maximizing the utilization of our assets. We are aware that the previous owners of the Aromatics and Acetyls Businesses had embarked on a cost reduction program between 2016 and 2019; through lowering the variable costs per ton through better energy and catalyst efficiency, increasing the interval between turnaround outages, reducing the number of employees in the businesses and reducing other fixed costs through better procurement and focus on third party cost reductions. INEOS has applied its non-manpower and manpower cost reduction methodology throughout the course of 2021 to further reduce costs. The Acetyls program continued into 2022 with full roll-out of the cost reduction activities completed during the course of the year. The Aromatics program was completed by mid 2022 and has delivered sustained structural cost savings for the business. The Aromatics business remains cost focused and will continue to identify cost saving opportunities in future years that will allow us to maintain the cost base at an appropriate level for the business.

Fluctuations in the prices of raw materials and energy

Feedstock costs are a significant component of the operating costs of our petrochemical business. The costs of the feedstocks we require to make our petrochemical products (naphtha, ethane, butane and propane) are principally driven by the price of oil and natural gas. According to the U.S. Energy Administration, the spot price for Brent crude oil decreased from approximately \$92 per barrel in January 2008 to approximately \$81 per barrel in December 2022, while the natural gas Citygate price in Texas decreased from \$8.23 per thousand cubic feet in January 2008 to \$6.82 per thousand cubic feet in December 2022. During 2022 the crude oil price rapidly increased, reaching a high of approximately \$123 per barrel in June before finishing the year at approximately \$81 per barrel as compared to approximately \$74 per barrel at the end of 2021. The average price of crude oil, and thus the price of petrochemical products, increased to an average of approximately \$101 per barrel in 2022 as compared to an average of approximately \$71 per barrel for the year ended December 31, 2021.

Our ability to pass on price increases for feedstocks is limited due to the impact of time lags resulting from the repricing intervals of our contracts with suppliers and customers. While most of our feedstock contracts reprice daily or monthly, our contracts with customers generally reprice on a daily, monthly or quarterly basis. In our Aromatics Business, European and North America PTA typically price on a cost plus basis. In China, PTA sales formulae are based off a market reference price, but financial instruments are widely available to manage margin volatility.

In addition, for certain businesses, in particular for our INOVYN Business, we purchase significant amounts of electricity from external suppliers for use throughout our production chain. While we have agreements providing for the supply of electricity, the contractual prices for these vary with market conditions and may be highly volatile. As a consequence of the war in Ukraine, electricity and natural gas prices rose to unprecedented levels in 2022 significantly increasing production costs. We and other chemical producers typically seek to pass on changes in energy costs to customers in the price of finished products in order to preserve margins. The degree to which we and our competitors are successful in doing so depends on overall supply and demand balances at the time.

Many of our customers take advantage of fluctuating prices by building inventories when they expect product prices to increase and reducing inventories when they expect prices to decrease, limiting our ability to pass on price increases for feedstocks and energy costs. The effect of the time lags and our customers' inventory management policies on our ability to pass through feedstock and electricity price increases is magnified in periods of high volatility. In addition, changes in feedstock and energy costs have a direct impact on our working capital levels. In general, increases in feedstock and energy prices lead to an increase in our working capital and decreases in prices lead to a decrease in our working capital.

Foreign exchange rate fluctuations

Our results of operations may be affected by both the transaction effects and translation effects of foreign currency exchange rate fluctuations. A substantial portion of our revenue is generated in, or linked to, the U.S. dollar, the euro, pound sterling and Renminbi. In our European petrochemicals businesses, certain feedstock costs are denominated in U.S. dollars, while the transaction currency in most of these European entities is the euro. In the U.S. and non-European portion of our businesses, a substantial portion of our product prices, raw material costs and other costs are denominated in U.S. dollars. We generally do not enter into foreign currency exchange instruments to hedge our foreign currency exposure, although certain of our businesses have done so in the past and may do so in the future. We also believe that we benefit from natural hedging to the extent that we have been able to match the currencies of our cash flows and long term indebtedness.

Our reporting currency is the euro, and our results of operations will be impacted by the relative strength of the euro against other currencies, including the U.S. dollar, the British pound and Renminbi. In the first half of 2020, the value of the euro relative to the U.S. dollar decreased in the context of the COVID-19 outbreak before increasing again during the second half of 2020 and throughout the first half of 2021, before decreasing again during the second half of 2021 and most of 2022, until a slight recovery at the end of the year.

Health, safety, security and environmental considerations

Our results of operations are affected by HSSE laws and regulations and our efforts to mitigate related risks and/or achieve related goals generally. We have invested, and will continue to invest, a significant amount of financial and technical resources in order to achieve and maintain compliance with environmental requirements. From time to time, we also incur remediation and decommissioning costs in connection with our production facilities and other locations. Changes in legislation and regulations governing energy use, including renewable energy sources, could also increase our costs in absolute terms.

Environmental Considerations

Our results of operations are affected by environmental laws and regulations, including those relating to GHG and other air emissions, and environmental risks and goals generally. We have invested, and will continue to invest, a significant amount of financial and technical resources in order to achieve and maintain compliance with environmental requirements. From time to time, we also incur remediation and decommissioning costs at our current and former production facilities, as well as at other locations.

Environmental considerations can also impact the markets in which we operate, including our position with respect to our competitors.

Innovation

Innovation is key to maintaining our competitiveness in the petrochemicals industry. We own intellectual property and unpatented proprietary know-how and have a track record of developing and deploying world leading proprietary technologies. In addition, we conduct R&D activities that focus on process improvements as well as product and application development in line with major market trends and needs. We believe that a healthy innovation pipeline, comprising a number of process-, product- and customer-driven projects, will help us continue to generate positive cash flows in the future. or example, the Aromatics Business developed, operates and licenses its state-of-the-art double re-slurry crystallization technology for the production of PX from mixed aromatics. This technology offers lower variable cost, lower capex, increased reliability and lower environmental emissions than alternative technologies. In addition, the Aromatics Business has operated and continually improved its Purified Terephthalic Acid (PTA) Technology for over 50 years as an owner, operator and licensor, offering lower capex, lower operating costs and market leading environmental performance including lower greenhouse gas emissions compared with conventional PTA plants. Similarly, in acetic acid, the Acetyls Business's leading Cativa® technology has been continuously optimised and commercially operated in multiple plants since first being deployed 25 years ago. The latest development, the Cativa® XL process, offers advantaged capital efficiency through reduced process complexity and variable cost improvements through efficient heat integration leading to reduced steam consumption.

Product and geographical mix

Our margins are affected by the mix of products that we sell in a given period. The Styrolution Business and the INOVYN Business sell standard and specialty products, with the highest margins made in the specialties businesses. Specialty products are sold at a premium as their innovative characteristics generate more added value to our customers. Standard products are commonly available and therefor the supply/demand balance has a strong impact on the market margins. The Aromatics Business sells one grade of PTA, there is no real product differentiation within the global market. At the same time, the Aromatics Business does seek out and sell to customers covering a wide range of end uses including specialty products where producers pay a premium for security of supply and service. The Acetyls Business predominantly sells two products—acetic acid globally and anhydride within Europe. While displaying different product margins reflecting different markets and end uses and also regional pricing differences, both are globally traded chemicals, hence regional feedstock prices and regional and global supply and demand balances impact margins for each product.

Additionally, our results are affected by the countries in which we are able to produce and sell the largest proportion of our products. For example, the Styrolution Business benefits from its global footprint: Asian regional contribution to the overall profitability has increased as we increased our sales in China and Asian emerging markets, which generally experience higher growth rates than mature European and North American markets. Nevertheless, EMEA still contributes the largest share of profits. For the INOVYN Business, however, we generally obtain higher margins in European markets than export markets and, as a result, typically, at least 95% of the INOVYN Business's caustic soda production is sold in European markets and between 10- 30% of its PVC production is sold in export markets. Additionally, in the Aromatics Business, North American and European activities generate higher margins than Asian activities due to the supply-demand balance of the regions driving import parity-based pricing. This allows margins of at least at the cost of the freight difference between Asia and Europe and North America. In Asia, the Aromatics Business deploys our latest generation technology at Zhuhai providing world scale volumes at top-quartile levels of cash costs for the industry in China.

Capital expenditures

We invest substantial amounts in the maintenance, improvement and growth of our asset base as well as compliance with safety and environmental legislation and improvement of plant reliability and commercial efficiency. We believe strategic capital expenditure can help maintain our long-term profitability. We apply strict measures based on internal rates of return for the multiple approval gates of our expansion and de-bottlenecking projects.

Joint ventures

A material portion of the Acetyls Business is conducted through joint ventures and the Styrolution Business has set-up a new joint-venture as at December 2022. We do not control the joint ventures in the Acetyls and Styrolution Business, even in cases where we hold a majority interest in the joint venture. Accordingly, the results of the non-controlled joint ventures are not consolidated in the consolidated financial statements of INEOS Quattro Holdings Limited. Instead, in accordance with IFRS, all such non-controlled joint ventures are accounted for under the equity method. Equity accounted income consists of the Acetyls, Styrolution and Aromatics Businesses' share of the relevant elements of the equity-accounted entities' results, which include operating profit or loss, interest income, interest and other similar charges and tax charges. As the declaration and payment of dividends is not necessarily tied to the net profit of the joint ventures, there may be differences between the Group's share of joint venture earnings after interest and tax on the income statement and dividends received from joint ventures on the cash flow statement.

Results of Operations

The consolidated financial information of INEOS Quattro Holdings Limited is prepared in accordance with IFRS. The income statement data for the years ended December 31, 2022 and December 31, 2021 represent the consolidated results of the Company.

Description of Key Line Items

Set forth below is a brief description of the composition of the key line items of our consolidated income statement accounts:

- *Revenue.* Group revenue represents the invoiced value of products sold or services provided to third parties net of sales discounts and value-added taxes. It also excludes our share of joint venture revenue. The pricing for products sold is determined by market prices (market contracts and arrangements) or is linked by a formula to published raw material prices plus an agreed additional amount (formula contracts). Services provided to third parties include administrative and operational services provided to other chemical companies with units on our sites, and services under tolling arrangements. Under tolling arrangements, customers pay for or provide raw materials to be converted into a certain specified product, for which we charge a toll fee.

- *Cost of sales before exceptional items.* Cost of sales includes fixed and variable production costs. Such production costs typically include the costs of raw materials, packaging, utilities, direct wages and salaries, repairs and maintenance, waste disposal and effluent treatment, consumables, attributable depreciation charges and directly attributable overheads, including wages and salaries, depreciation charges and overheads that are attributable to production. Fixed costs included in the cost of sales are rent, depreciation, repairs and maintenance, while variable costs include raw materials, packaging, consumables and wages and salaries.

- *Exceptional cost of sales charge.* Exceptional cost of sales are those expenses which, because of their size and nature, are disclosed separately to give a proper understanding of the underlying results for the period. These costs are mainly related to plant closure costs and environmental costs.

- *Distribution costs.* Distribution costs typically include the costs of warehousing, carriage and freight, together with sales and distribution wages and salaries and depreciation on property, plant and equipment used for sales and distribution.

- *Administrative expenses before exceptional items.* Administrative expenses typically include indirect wages and salaries and indirect overheads. Indirect overheads would include such items as insurance costs, legal and professional fees and office supplies. Administrative expenses also include the depreciation of property, plant and equipment not directly attributable to production or sales and distribution.

- *Exceptional administrative expenses.* Exceptional administrative expenses are those expenses which, because of their size or nature, are disclosed to give a proper understanding of the underlying results for the period. These expenses are mainly related to acquisition costs, business restructuring and the provision for severance payments.

- *Share of profit of associates and joint ventures using the equity accounting method.* Share of profit of associates and joint ventures using the equity accounting method relates to the results from the investment in associated undertakings and joint ventures.

- *Profit/(loss) on disposal of property, plant and equipment.* Profit/(loss) on disposal of property, plant and equipment relates to the proceeds net of selling costs, if any, less the book value of property, plant and equipment that have been disposed of.

- *Net* f*inance costs before exceptional items.* Finance costs includes interest payable, finance charges on finance leases, unwinding of the discount on provisions, net fair value losses derivatives and foreign exchange losses. This is disclosed net of finance income, including interest receivable on funds invested, expected return on defined benefit pension plan assets, net fair value gain on derivatives and foreign exchange gains

- *Exceptional finance costs.* Exceptional finance costs are those costs which, because of their size or nature, are disclosed to give a proper understanding of the underlying results for the period. These costs are mainly related to call premia and the write-off of unamortized debt issue costs following modification or redemption of debt.

Consolidated Results

The following table sets forth, for the periods indicated, our revenue and expenses and such amounts as a percentage of revenue.

	For the year ended December 31,			
	2022		2021	
	€	%	€	%
Revenue	**18,172.3**	**100.0**	**14,932.2**	**100.0**
Cost of sales before exceptional items	(15,171.7)	(83.5)	(11,821.5)	(79.2)
Exceptional cost of sales	-	-	(140.6)	(0.9)
Total cost of sales	(15,171.7)	(83.5)	(11,962.1)	(80.1)
Gross profit	**3,000.6**	**16.5**	**2,970.1**	**19.9**
Distribution costs	(901.9)	(5.0)	(814.5)	(5.5)
Administrative expenses before exceptional items	(474.8)	(2.6)	(440.0)	(2.9)
Exceptional administrative expenses	(5.1)	(0.0)	(41.1)	(0.3)
Total administrative expenses	(479.9)	(2.6)	(481.1)	(3.2)
Operating profit	**1,618.8**	**8.9**	**1,674.5**	**11.2**
Share of profit of associates and joint ventures using the equity method	233.6	1.3	462.0	3.1
Dividends received from other investments	2.6	-	2.5	-
Impairment of investments	-	-	(1.0)	-
Loss on disposal of equity accounted investments	(26.6)	(0.1)	-	-
Profit on disposal of controlling stake in businesses	710.3	3.9	-	-
Profit on disposal of property, plant and equipment	5.6	-	4.3	-
Profit before net finance costs	**2,544.3**	**14.0**	**2,142.3**	**14.3**
Net finance costs before exceptional items	(197.4)	(1.1)	(171.3)	(1.1)
Exceptional finance costs	(4.3)	-	(68.9)	(0.5)
Total finance costs	(201.7)	(1.1)	(240.2)	(1.6)
Profit before tax	**2,342.6**	**12.9**	**1,902.1**	**12.7**
Tax charge	(377.7)	(2.1)	(326.0)	(2.1)
Profit for the year	**1,964.9**	**10.8**	**1,576.1**	**10.6**

Year Ended December 31, 2022, Compared With Year Ended December 31, 2021

Consolidated

Revenue. Revenue increased by €3,240.1 million, or 21.7%, to €18,172.3 million in the year ended December 31, 2022 from €14,932.2 million in the year ended December 31, 2021. Total volumes were lower than the prior year, but absolute revenues increased due to higher selling prices. In the first half of the year, demand remained resilient despite the high inflation and the energy crisis in Europe. The second half of the year saw a softening in demand with customers de-stocking due to market uncertainty and expectation of future price reductions. Increased competition from Asian products into the Americas and Europe in the second half of 2022 also softened the demand in these regions. The average prices in the current year were higher than prices in the comparative year in Europe and Americas as the businesses were mainly able to pass over the increase in utility price to their customers.

Cost of sales before exceptional items. Cost of sales before exceptional items increased by €3,350.2 million, or 28.3%, to €15,171.7 million in the year ended December 31, 2022 from €11,821.5 million in the year ended December 31, 2021. The increase was primarily the result of higher costs of the Group's key raw materials including ethylene, benzene and methanol (linked to higher oil prices) and higher electricity and natural gas costs. Additionally, some presentational changes were implemented in 2022 with some income in relation to utilities recharge being classified in cost of sales versus administrative expenses in the prior year. These reclassifications have led to less expenses being presented in cost of sales and more within administrative expenses before exceptional items.

Exceptional cost of sales. Exceptional cost of sales decreased by €140.6 million, to €nil in the year ended December 31, 2022 from €140.6 million in the year ended December 31, 2021. The exceptional costs in the prior year were all incurred by the INOVYN business on exceptional provisions in relation to decommissioning, demolition, remediation associated with mercury contamination as well as obligations under the EU Water Directive.

Gross profit. Gross profit increased by €30.5 million, or 1.0%, to €3,000.6 million in the year ended December 31, 2022, from €2,970.1 million in the year ended December 31, 2021. The increase in gross profit was mainly driven by INVOYN business which achieved its highest profitability since the formation of the business in 2015. The business performance was primarily supported by the unprecedently high pricing of caustic soda, which despite the weakening demand environment in the second half of 2022, reached record levels in Europe. On other products, margins in Europe were heavily impacted by high energy prices and the impact of Asian prices as an alternative for our customers and were mainly lower compared to prior year. Margins in Americas were higher than prior year in relation to PTA and Acetic Acid. Margins in Asia were lower than compared to prior year driven down by an oversupplied market on the majority of the Group's products.

Distribution costs. Distribution costs increased by €87.4 million, or 10.7%, to €901.9 million in the year ended December 31, 2022, from €814.5 million in the year ended December 31, 2021. This was due to higher variable transportation rates due to overall inflation as well as negative foreign exchange impact, partly offset by lower overall volumes.

Administrative expenses before exceptional items. Administrative expenses before exceptional items increased by €34.8 million, or 7.9%, to €474.8 million in the year ended December 31, 2022 from €440.0 million in the year ended December 31, 2021. Cost control measures were introduced to reduce discretionary spend in response to the energy crisis in Europe and the overall softening of demand in the second half of the year. Despite those measures, overall administrative expenses increased due to general inflation pressure and negative foreign exchange impact driven by a stronger US dollar versus the euro. As mentioned above, some presentational changes were made in 2022 distorting the year-on-year comparison, as €55 million of income in relation to utilities recharges were classified as administrative expenses in the prior year, while these recharges were classified as cost of sales in the current year.

Exceptional administrative expenses. Exceptional administrative expenses decreased by €36.0 million, or 87.6%, to €5.1 million in the year ended December 31, 2022, as compared to €41.1 million for the year ended December 31, 2021. In 2022, the Aromatics business incurred €5.1 million of expenses in respect of manpower reorganizations and cancellation of projects started under BP ownership which are no longer being pursued. In 2021, the newly acquired Aromatics and Acetyls businesses incurred €37.8 million of expenses in respect of manpower reorganizations and various IT-related costs, following the cessation of the IT transitional service agreement with BP. Moreover, the Group incurred a further €4.1 million of Aromatic and Acetyls acquisition-related fees in 2021.

Operating profit. Operating profit decreased by €55.7 million, or 3.3% to €1,618.8 million in the year ended December 31, 2022 from €1,674.5 million in the year ended December 31, 2021.

Share of profit of associates and joint ventures using the equity method. Share of profit of joint ventures and associated undertakings decreased by €228.4 million, or 49.4% to €233.6 million in the year ended December 31, 2022 from €462.0 million in the year ended December 31, 2021. This was mainly driven by lower performance of the Asian Acetyls joint ventures as lower sales prices and higher feedstocks reduced margins significantly. Profit of the Atlas Methanol Company Limited joint venture in Trinidad were also lower than the prior year due to lower sales volumes and lower margins.

Dividends received from other investments. Dividends received from other investments was €2.6 million for the year ended December 31, 2022, as compared to €2.5 million for the same period in 2021. The dividend was received from Tereftaltos Mexicanos SA de CV and Akra Polyester, S.A. de C.V., in which the Group holds respectively an 8.55% and 6.65% shareholding.

Impairment of investments. Impairment of investments was €1.0 million for the year ended December 31, 2021.

Loss on disposal of equity accounted investments. Loss on disposal of equity accounted investments was €26.6 million for the year ended December 31, 2022, as compared to €nil for the same period in 2021. The impairment charge resulted from the exchange of the Group's respective shareholding interest of 30% in Tricoya UK Limited and 9% in Tricoya Technologies Limited against 7,500,000 shares in Accsys Technologies Plc.

Profit on disposal of controlling stake in businesses. Profit on the disposal of controlling stake in businesses was €710.3 million for the year ended December 31, 2022, as compared to €nil for the same period in 2021. The disposal of INEOS Styrolution APAC Pte Limited in November 2022 resulted in a loss of €47.1 million. The transfer of 50% of the shareholding in INEOS Styrolution Advanced Materials (Ningbo) Pte Limited to China Petroleum & Chemical Corporation in December 2022 resulted in a gain of €757.4 million.

Profit on disposal of property, plant and equipment. Profit on the disposal of property, plant and equipment increased by €1.3 million, or 30.2%, to €5.6 million for the year ended December 31, 2022, as compared to a loss of €4.3 million for the same period in 2021. Most of the profit in 2022 related to the sale of precious metal catalysts in Zhuhai, China. Most of the profit in 2021 relates to the sale of a parcel of land at Merak, Indonesia.

Profit before net finance costs. Profit before net finance costs decreased by €402.0 million, or 18.8%, to €2,544.3 million for the year ended December 31, 2022, as compared to €2,142.3 million for the same period in 2021.

Net finance costs before exceptionals. Net finance costs before exceptionals increased by €26.1 million, or 15.2%, to €197.4 million in the year ended December 31, 2022 from €171.3 million in the year ended December 31, 2021. The increase was primarily the result of €17.1 million of higher interest charges and €32.3 million of lower net exchange gains on intercompany loans (including financing between consolidated subsidiaries) compared to the prior year which was partially offset by €20.0 million of lower charges in the current year on derivative fair value movements.

Exceptional finance costs. Exceptional finance costs decreased by €64.6 million, or 93.8%, to €4.3 million in the year ended December 31, 2022 from €68.9 million in the year ended December 31, 2021. Following the early repayment of the Three-Year Dollar and Euro Term Loan A and the Five-Year Dollar Term Loan A facilities on May 31, 2022, the Group wrote-off €4.3 million of unamortized debt issue costs associated with these borrowings. An exceptional finance cost of €52.6 million in 2021 was in respect of the write off of unamortized debt issue costs associated with the Five-Year Euro Term Loan A Facility, the Euro Bridge Facility, the Dollar Bridge Facility and the INOVYN Senior Secured Term Loan B Facility that were repaid on January 29, 2021. In addition, a finance charge of €16.3 million from a related party was incurred in respect of funding provided for the acquisition of the Aromatics and Acetyls businesses.

Profit before tax. Profit before tax increased by €440.5 million, or 23.2%, to €2,342.6 million in the year ended December 31, 2022 from €1,902.1 million in the year ended December 31, 2021.

Tax charge. Tax charge increased by €51.7 million, or 15.9%, to a charge of €377.7 million in year ended December 31, 2022 from a charge of €326.0 million in the year ended December 31, 2021. After adjusting for the profit from the share of associates and joint ventures, the effective tax rate for the Group for the year ended December 31, 2022 was 18%, as compared to 23% in 2021. The effective tax rate for the Group was lower than the standard rate in the United Kingdom of 19% as profits made in regions with lower rates more than offset profits made in regions with higher rates than the standard rate.

Profit for the year. Profit for the year increased by €388.8 million, or 24.7%, to €1,964.9 million in the year ended December 31, 2022 from €1,576.1 million in the year ended December 31, 2021.

Business Segment

The Group reports under four business segments: Styrolution, INOVYN, Acetyls and Aromatics.

The following table provides an overview of the revenue and EBITDA before exceptionals of each of the business segments for the periods indicated:

	For the year ended December 31,	
	2022	**2021**
	(€ in millions)	
Revenue		
Continuing operations		
Styrolution	6,634.3	5,889.7
INOVYN	5,136.2	4,225.6
Acetyls	1,369.6	1,219.0
Aromatics	5,115.2	3,683.2
Eliminations	(83.0)	(85.3)
	18,172.3	14,932.2
EBITDA before exceptionals		
Continuing operations		
Styrolution	748.6	1,180.3
INOVYN	1,176.0	974.4
Acetyls	363.4	622.0
Aromatics	284.4	262.4
	2,572.4	3,039.1

Styrolution

Revenue. Revenue increased by €744.6 million, or 12.6%, to €6,634.3 million in the year ended December 31, 2022 from €5,889.7 million in the year ended December 31, 2021. A strong first half of the year supported by high demand particularly for durables continuing the trend started during COVID was followed by mid to low cycle levels in the second half of the year with customers de-stocking due to market uncertainty and expectation of further price reductions. Open arbitrage from Asian products into the Americas and Europe in the second half of 2022 softened the demand in these regions. As a result, the overall volumes for the year were lower compared to the prior year, also affected by the divesture of INEOS Styrolution India Limited in November 2022. The average prices in the current year were higher than prices in the comparative year and more than compensated for lower sales volumes. Revenues in the current year included €71 million of royalty revenue for the sale of intellectual property to the newly created joint ventures and Sinopec.

EBITDA before exceptionals. EBITDA before exceptionals decreased by €431.7 million, or 36.6%, to €748.6 million in the year ended December 31, 2022 from €1,180.3 million in the year ended December 31, 2021. Softer demand combined in all regions and most product groups resulted in reduced margins in the current year. The open arbitrage from Asian product into the Americas and Europe impacted margins in these regions. The margin reduction came primarily from the global ABS business. A reduction in polystyrene margins in Asia was partially offset by higher polystyrene margins in Europe and Americas as an increase in utility prices were successfully passed onto customers.

INOVYN

Revenue. Revenue increased by €910.6 million, or 21.5%, to €5,136.2 million for the year ended December 31, 2022, as compared to €4,225.6 million for the same period in 2021. Total volumes were lower than the prior year period, but absolute revenues increased due to extremely high pricing on key products. Production and sales volumes of key products, including general purpose PVC, specialty PVC and caustic soda were lower than the prior year as high inflation and the energy crisis in Europe resulted in weaker demand in the second half of 2022. European producers also faced more competition from US and Asian imports. Average sales prices of general purpose and specialty PVC in Europe reached record levels in 2022 due to higher ethylene feedstock and energy input costs. Trims to chlorine production (and hence co-produced caustic soda production) due to high electricity prices and low PVC demand led to very tight caustic soda markets in Europe despite a weaker demand environment, with price records being broken in each successive quarter of 2022. The European contract price of caustic soda (as reported by Chemical Market Analytics) reached €2,407 per ton in the fourth quarter of 2022, whilst the average annualized European contract price of caustic soda in 2022 was 194% higher than 2021. The current year also benefited from significantly higher prices of caustic potash, and chlorine derivatives such as Cereclor, chloromethanes and epichlorohydrin.

EBITDA before exceptional items. EBITDA before exceptional items increased by €201.6 million, or 20.7%, to €1,176.0 million for the year ended December 31, 2022, as compared to €974.4 million for the same period in 2021. Business profitability in 2022 was the highest annual performance since the formation of INOVYN in 2015, despite the energy crisis in Europe and the aforementioned reduction in sales volumes of general purpose PVC, specialty PVC and caustic soda. This was mainly due to the unprecedently high pricing of caustic soda, which despite the weakening demand environment in the second half of 2022, reached record levels in Europe. The primary driver was low chlorine production rates across Europe, as a consequence of high electricity prices and low PVC demand. On an annualized basis, the achieved spread of general purpose and specialty PVC prices over ethylene were also higher than the prior year with demand remaining resilient in the first half of the year. However, by the second half of the year, demand and therefore spreads had weakened considerably which forced European PVC producers to reduce plant operating rates. Sales volume of other products such as caustic potash, chloromethanes, epichlorohydrin and salt were lower than 2021 but absolute margins achieved increased due to healthy market conditions for most of the year.

Acetyls

Revenue. Revenue increased by €150.6 million, or 12.4%, to €1,369.6 million for the year ended December 31, 2022, as compared to €1,219.0 million for the same period in 2021. Total volumes were lower than the prior year period, but absolute revenues increased due to higher selling prices. In Europe, volumes were down due to the challenging environment which has seen rising raw material prices as well as weakened demand for both acid and anhydride as customers struggle with affordability on the back of the high gas cost. European sales prices were up as increasing gas prices were reflected in cost plus and market reference sales contracts for acetic acid and anhydride. In the US, volumes were down due to reduced customer demand and an unplanned shutdown at a third-party plant. US acetic acid prices increased again driven by increasing gas prices.

EBITDA before exceptional items. EBITDA before exceptional items decreased by €258.6 million, or 41.6%, to €363.4 million for the year ended December 31, 2022, as compared to €622.0 million for the same period in 2021. Lower business profitability was mainly driven by a lower share of joint-venture net profit partially offset by higher margins in the US. Share of joint-venture net profit from the Asian joint-ventures were down as lower sales prices coupled with higher feedstocks reduced margins significantly. Net profits of the Korean joint-venture were partially supported by higher volumes and higher margins of VAM as demand in this sector was strong, although this started to soften toward the end of the year. Net profit of the Atlas joint-venture was down compared to last year due to lower sales volumes, lower margins as a higher methanol discounts were offered and higher fixed costs due to unplanned outages. The US has been the largest contributor with 40% of customers on cost plus sales pricing allowing the higher feedstock prices to be passed on to customers. Margins in Europe were lower compared to prior year due to high energy costs, increased freight charges, significant flaring costs due to reduction in production and lower sales volumes, offsetting higher sales prices.

Aromatics

Revenue. Revenue increased by €1,432.0 million, or 38.9%, to €5,115.2 million for the year ended December 31, 2022, as compared to €3,683.2 million for the same period in 2021. Total volumes were lower than the prior year period, but absolute revenues increased due to higher selling prices. In Europe, high inflation and the energy crisis in Europe weakened the demand. High production costs made European producers uncompetitive versus Asian import volumes. The PTA sales volumes in the US remained strong through the first half of the year but then slowed significantly in the last quarter due to the combined effect of increasing volume of Asian imports of PTA and PET and a slowdown in demand as a result of fiscal policy. Asian volumes were at a similar level to the prior year. The price of mixed xylenes increased significantly during 2022 as a result of the sharp rise in gasoline prices globally. As the key raw material for PX and ultimately PTA this then drove the absolute prices of our products higher throughout the year. As a reference the US PX price ended in December 2021 at $992/t and closed 2022 at $1,235/t. However during the year the US PX price peaked at $2,282/t, a 130% increase in price compared to the start of the year.

EBITDA before exceptional items. EBITDA before exceptional items increased by €22.0 million, or 8.4%, to €284.4 million for the year ended December 31, 2022, as compared to €262.4 million for the same period in 2021. Business performance for the year improved versus prior year as lower sales volume have been more than offset by higher margins and lower fixed costs. PTA margins in the US were better than in prior year and the profitability fundamentals of the business remained strong. Margins in Europe have been adversely impacted by high energy prices and the impact of Asian prices as an alternative for our customers. The fall in energy prices in the last quarter of the year brought an improvement in margins. Margins in Asia continued to be structurally pared back by an oversupplied PTA market, but the business has seen improvements in the export margins from Zhuhai for international sales. In addition, the business has focused the sales of Zhuhai tons more towards the PET resin market, rather than fiber, as the customers have a more reliable demand.

Liquidity and Capital Resources

Capital Resources

Our historical liquidity requirements have arisen primarily from the need for us to meet our debt service requirements, to fund capital expenditures for the general maintenance and expansion of our production facilities and for new facilities, to fund movements in our working capital and to pay taxes.

Our primary sources of liquidity are cash flows from operations of subsidiaries, cash on balance sheet and borrowings under our Receivables Securitization Programs. As of December 31, 2022, our Securitizations Programs remained undrawn. Our ability to generate cash from our operations depends on future operating performance, which is in turn dependent, to some extent, on general economic, financial, competitive market, legislative, regulatory and other factors, many of which are beyond our control.

We believe that our operating cash flows, together with the cash resources and borrowings program under the Securitization Programs and other facilities that we are able to sufficiently fund our working capital requirements, anticipated capital expenditures and debt service requirements as they become due, although this may not be the case. Management estimates that, even in a downturn in the business cycle and weaker market conditions, we would have sufficient liquidity to meet our anticipated liabilities when due without incurring unacceptable losses or risking damage to our reputation.

Our working capital requirements depend on market price developments of our key feedstock, market demand and planned maintenance. We anticipate that our working capital requirements will vary due to changes in raw material, which affect inventory, accounts receivable and accounts payable levels as well as sales volumes. Working capital levels typically develop in line with raw material prices, although timing factors can affect flows of capital. We expect to fund our working capital requirements with cash generated from operations and drawings under the Securitization Programs.

Financing Arrangements

As of December 31, 2022, the Group's financing arrangements included €800.0 million and $500.0 million of Senior Secured Notes due 2026, €600.0 million of Senior Secured Notes due 2027, €500.0 million Senior Notes due 2026, €1,500.0 million and $1,970.0 million Term Loan B facilities due 2026 and €450.0 million and $196.7 million Term Loan B facilities due 2027. Our financing arrangements also include Securitization Programs, which as at December 31, 2022 had a total capacity of €840.0 million, none of which was drawn. The programs are subject to certain borrowing limits that are adjusted periodically based on the amount of eligible trade receivables available at the time of adjustment. In addition, there are lease liabilities of €289.3 million.

The Group also has various short-term credit facilities with different local banks to fund our working capital requirements in China, Malaysia, Singapore, South Korea, Thailand, and United Kingdom.

On January 21, 2022, INEOS Styrolution Advanced Materials (Ningbo) Pte Ltd. entered into a new term loan agreement with Bank of China and ICBC to provide a RMB 3,300.0 million financing for the construction of the new 600 kiloton ABS plant in Ningbo, China. The term loan facility matures in 2032 and has a straight-line semi-annual amortization over the lifetime commencing after the start of operations. On December 28, 2022, a subsidiary of the Group completed an equity transfer agreement with China Petroleum & Chemical Corporation relating to the sale and purchase of 50% equity interest in INEOS Styrolution Advanced Materials (Ningbo) Pte Ltd. As a result of this divesture, the obligation of the Group under this term loan facility have been transferred to the newly created joint-venture and disposed of in the Group consolidated financial statements. As at December 31, 2022, the amount utilized against the facility was RMB 3,035.2 million (€408.2 million equivalent).

Capital expenditures

As part of our strategy to focus capital investments on improving returns, we have instituted measures to ensure the most efficient uses of capital investment. We intend to manage capital expenditures to maintain our well-invested asset base.

During the year ended December 31, 2022 and 2021, capital expenditures analyzed by business segment were as follows:

	For the year ended December 31,	
	2022	**2021**
	(€ in millions)	
Styrolution	551.0	477.0
INOVYN	242.3	175.6
Acetyls	34.3	46.8
Aromatics	41.8	50.8
Total	869.4	750.2

In the Styrolution business, the most significant expenditures in 2022 related to a new 600 kiloton ABS Kaimen facility at Ningbo, China, which was subsequently divested into a joint venture in December 2022 and a newly built ESPN plant in the US. In addition, there were planned turnarounds, particularly at our SM plant in Sarnia, Canada.

In the INOVYN business, the most significant expenditures consisted of a SPVC capacity expansion project at Jemeppe, a new mechanical vapor recompression salt plant at Tavaux, a brine borehole drilling program at Northwich and general SHE/sustenance expenditures. There were also planned turnaround events of the chlor-alkali and VCM assets at Grenland in Norway and the cracker at Feyzin, France in the second quarter of 2022.

In the Acetyls business, the most significant capital expenditure project related to the turnaround of the A5 acetic acid plant at Hull, U.K.

In the Aromatics business, the most significant expenditures were mainly on sustenance and safety compliance work to keep the assets running safely and in line with regulatory requirements. In addition, capital expenditures were incurred in relation to a turnaround event at the Merak facility in Indonesia, and on an expansion project in Europe.

Investments in property, plant and equipment in the year ended December 31, 2021 mainly related to a new 100 kiloton ASA plant at Bayport, Texas, a new 600 kiloton ABS Kaimen facility at Ningbo, China. and a 78 kiloton SPVC capacity expansion project at Jemeppe, Belgium.

Working Capital

We anticipate that our working capital requirements will vary due to changes in raw material and energy costs, which affect inventory, accounts receivable and accounts payable levels as well as sales volumes. Working capital levels typically develop in line with raw material and energy prices, although timing factors can affect flows of capital. We expect to fund our working capital requirements with cash generated from operations and drawings under the Securitization Program and other short-term credit facilities.

Cash Flows

During the year ended December 31, 2022 and 2021, the Group's net cash flows were as follows:

	For the year ended December 31,	
	2022	**2021**
	(€millions)	
Net cash flows generated from operating activities	1,872.1	1,825.2
Net cash flows used in investing activities	(269.3)	(458.9)
Net cash flows used in financing activities	(1,375.9)	(927.9)

Net cash flows generated from operating activities

Net cash flows from operating activities was an inflow of €1,872.1 million in the year ended December 31, 2022 compared to an inflow of €1,825.2 million in the year ended December 31, 2021. Positive cash flow was generated because of the strong underlying business performance. Working capital outflows were €62.6 million in 2022 (2021: outflow of €346.6 million), reflecting lower feedstock price levels and reduction in stock level, and consequently lower product prices and inventory values.

The Group made taxation payments of €321.8 million in 2022 (2021: €291.1 million). The largest payments were made in Germany, the US, Korea, Belgium, Mexico, Switzerland, China and India. In 2021, the largest payments were made in Germany, the United Kingdom, Belgium, Mexico, Korea, China and India.

Net cash flows used in investing activities

The total cash outflow for investing activities in the year ended December 31, 2022 was €269.3 million compared to €458.9 million in 2021.

During 2022, the Group received dividends from joint ventures and other investments of €401.4 million (2021: €188.7 million) and €2.6 million (2020: €2.5 million), respectively.

In addition, proceeds from the sale of property, plant and equipment of €16.1 million was received (2021: €6.8 million), most of which related to the sale of precious metal catalyst in Zhuhai, China and the sale of a steam boiler in the US.

Total receipts of €4.2 million were also received from the Group's associated undertaking, INEOS Runcorn (TPS) Limited and from the Group's joint venture INEOS Styrolution Sinopec Advanced Material Limited, for partial repayment of a shareholder loan (2021: €6.7 million).

Spend of €75.7 million on intangible assets in 2022 (2021: €3.5 million) primarily consisted of product development costs, software licenses, engineering development and EU emission allowances.

On November 17, 2022, the Group sold its 61.19% shareholding in INEOS Styrolution India Limited. The total sale price was €80.7 million and the disposed business had cash balances of €14.8 million, which led to a net cash inflow of €65.9 million. On December 28, 2022, the Group transferred 50% of its shareholding in INEOS Styrolution Advanced Materials (Ningbo) Pte Limited to China Petroleum & Chemical Corporation. The total sale price was €472.6 million, of which €246.2 million is deferred. A withholding tax of €13.5 million was paid in relation to the sale price settled on completion. The disposed business had cash balances of €40.7 million, which led to a net cash inflow of €172.2 million.

There were no other significant cash flows from investing activities in the years ended December 31, 2022 and 2021 other than the acquisition of property, plant and equipment (see "—*Capital expenditures*" above).

Net cash flows used in financing activities

Net cash flows used in financing activities in the year ended December 31, 2022 was an outflow of €1,375.9 million compared with an outflow of €927.9 million in 2021.

In January 2022, the Styrolution business entered into a new long-term loan agreement with Bank of China and ICBC to provide RMB 3,300.0 million of financing for the construction of a new 600 kiloton ABS plant in Ningbo, China. Debt issue costs of €1.2 million were paid in relation to this transaction. As at December 31, 2022, the amount utilized against the facility was RMB 3,035.2 million (€431.1 million equivalent). On December 28, 2022, a subsidiary of the Group completed an equity transfer agreement with China Petroleum & Chemical Corporation relating to the sale and purchase of 50% equity interest in INEOS Styrolution Advanced Materials (Ningbo) Pte Ltd. As a result of this divesture, the obligation of the Group under this term loan facility have been transferred to the newly created joint-venture and disposed of in the Group consolidated financial statements.

In the year ended December 31, 2022, the Group made scheduled repayments of €15.0 million on the Three-Year Euro Term Loan A Facility (December 31, 2021: €30.0 million), $17.5 million (€15.6 million equivalent) on the Three-Year Dollar Term Loan A Facility (December 31, 2021: €30.1 million), $20.0 million (€18.9 million equivalent) on the Dollar Term Loan B Facility due 2026 (December 31, 2021: €8.7 million) and $2.0 million (€1.9 million equivalent) on the Dollar Term Loan B Facility due 2027 (December 31, 2021: €1.7 million). The Group also made total scheduled repayments of €9.6 million to the Bank of China in respect of a loan acquired as part of the Aromatics business acquisition (December 31, 2021: €8.7 million).

On May 31, 2022, the Group repaid the amounts outstanding under the Three-Year Dollar Term Loan A Facility of $87.5 million (€83.2 million equivalent), the Three-Year Euro Term Loan A Facility of €75.0 million and the Five-Year Dollar Term Loan A Facility of $210.0 million (€199.7 million equivalent).

Interest payments of €270.2 million were made in the year ended December 31, 2022 compared to €187.7 million for the year ended December 31, 2021. The interest payments during the year ended December 31, 2022 related primarily to scheduled cash payments in respect of the Term Loan A Facilities due 2023 and 2025 of €3.7 million, Term Loan B Facilities due 2026 and 2027 of €149.7 million, Senior Secured Notes due 2026 and 2027 of €49.0 million, Senior Notes due 2026 of €18.8 million, securitization facilities of €3.8 million, lease liabilities of €11.8 million and payments to settle losses on commodity derivative contracts of €20.3 million. The interest payments during the year ended December 31, 2021 primarily relate to the Term Loan B and Term Loan A Facilities of €118.2 million (including a final interest payment on the INOVYN Term Loan B Facilities of €2.1 million), the Senior Secured Notes and Senior Notes of €38.0 million and the Bridge Facilities of €8.4 million. Interest was also paid on the two securitization facilities of €3.4 million and lease liabilities of €11.8 million.

In January 2021, the Group issued €800.0 million Senior Secured Notes due 2026, $500.0 million (€406.5 million equivalent) Senior Secured Notes due 2026 and €500.0 million Senior Notes due 2026. In addition, the Group entered into a new Dollar Term Loan B Facility of $2,000.0 million (€1,626.0 million equivalent) and a new Euro Term Loan B Facility of €1,500.0 million. The gross proceeds received under these borrowings were used to repay the amounts outstanding under the Bridge Facility of €2,861.9 million, the €180.0 million Five-Year Euro Term Loan A Facility, the Senior Secured Term Loan B Facility that was acquired with the INOVYN business of €1,064.3 million, repay the Equity Bridge Contribution in the form of a dividend to the Group's parent and to pay debt issue costs of €63.0 million in respect of this refinancing.

In the year ended December 31, 2022, the Group made payments of €82.8 million (December 31, 2021: €95.8 million) in respect of the capital element of lease liabilities.

On April 22, 2022, the Group sold 13.8% of its shareholding in INEOS Styrolution India Limited for consideration of $25.1 million (€22.5 million equivalent). The Group's shareholding reduced from 75.0% to 61.2% as a result with control being retained.

Interim dividends of €521.0 million were declared and paid during the year ended December 31, 2022 to the shareholder, INEOS Industries Holdings Limited, as compared to €393.3 million in the prior year. The Equity Bridge Contribution received as part of the BP Acquisition was repaid in January 2021 via a return of capital of €824.9 million.

During the year ended December 31, 2022 a dividend of €8.6 million was paid by the Group's Indian subsidiary to a non-controlling interest, as compared to €10.3 million in the prior year. A dividend of €26.3 million was also paid by INOVYN Limited to the related party holding a non-controlled interest, INEOS Intermediate ChlorVinyls Limited.

In December 2022, the Group paid an intercompany loan of €500.5 million to its immediate parent, which was subsequently settled through a dividend distribution approved in January 2023.

Quantitative and Qualitative Disclosures About Market and Operating Risks

See Note 25 to the 2022 Audited Parent Consolidated Financial Statements for more information about market and operating risks affecting the Group's Businesses.

Commodity price risk

In the ordinary course of our business, we are exposed to a variety of market risks arising from movements in the prices of the feedstock we require to make our products. To manage this exposure, we generally acquire raw materials and sell finished products at posted or market-related prices, which (i) in the case of the Styrolution Business are typically set on a quarterly (for Specialties), monthly (for PS and ABS Specialties) or more frequent basis (for SM) in line with industry practice, (ii) in the case of the INOVYN Business, are typically set on a monthly (for PVC) and quarterly (for caustic soda) basis, and (iii) in the case of the Aromatics and Acetyls Businesses, are typically set on a quarterly or monthly basis for methanol and acetic acid, and quarterly, monthly or more frequently for natural gas. We seek to minimize reductions in our margins by passing feedstock cost increases to our customers through higher prices for our products. In general, we do not enter into hedging instruments to mitigate our exposure.

Currency risk

We are exposed to currency risk on sales, purchases and borrowings that are denominated in a currency other than the respective functional currencies of Group entities, primarily the EUR, but also U.S. dollars. The currencies in which these transactions primarily are denominated are (i) USD, EUR, Indian rupee and Korean won (in the case of the Styrolution Business), (ii) USD, Sterling, Norwegian Krone and Swedish Krona (in the case of the INOVYN Business) and (iii) USD, EUR, pound sterling, China RMB, Indonesian rupiah, Malaysian ringgit (in the case of the Aromatics and Acetyls Businesses).

The Group has established a currency risk policy under which material currency flows are analyzed and if management considers it needed the risks are mitigated. The Group looks at transactional and translation currency risks.

Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from our receivables from customers and INEOS, its ultimate owner, and cash and cash equivalents. The carrying amount of financial assets represents the maximum credit exposure.

Liquidity risk

Liquidity risk is the risk that we will encounter difficulty in meeting the obligations associated with working capital requirements, capital expenditure or our financial liabilities that are settled by delivering cash or another financial asset. Our approach to managing liquidity is to ensure, as far as possible, that we will have sufficient liquidity to meet our liabilities when due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to our reputation.

We aim to maintain the level of our cash and cash equivalents and other highly marketable investments at an amount in excess of expected cash outflows on financial liabilities over the succeeding 60 days. We also monitor the level of expected cash inflows on trade and other receivables together with expected cash outflows on trade and other payables.

Accounting Estimates and Judgements

The preparation of our consolidated financial statements in conformity with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected.

Information about critical judgments in applying accounting policies that have the most significant effect on the amounts recognized in our consolidated financial statements is included in Note 31 of the Audited Parent Consolidated Financial Statements.

Critical judgements in applying the Group's accounting policies

On 28 July 2022, INEOS and Sinopec signed a petrochemical deal to establish a total of three joint-ventures for ABS, based on INEOS' proprietary ABS technology. The set-up of the first joint-venture was completed on 28 December 2022. Management had to exercise critical judgement regarding the allocation of the consideration to the disposal of INEOS Styro Advanced Materials (Ningbo) Pte Ltd due to the linked nature of the transactions. The contractual arrangements are such that the first two joint ventures are accounted for together, and the third will be accounted for separately, in due course.

Key sources of estimation uncertainty

The key assumptions concerning the future, and other key sources of estimation uncertainty at the reporting period that may have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are discussed below.

Post-retirement benefits

The Group operates a number of defined benefit post-employment schemes. Under IAS 19 Revised Employee Benefits, management is required to estimate the present value of the future defined benefit obligation of each of the defined benefit schemes. The costs and year end obligations under defined benefit schemes are determined using actuarial valuations. The actuarial valuations involve making numerous assumptions, including:

- Future rate of increase in salaries;
- Inflation rate projections;
- Discount rate for scheme liabilities;
- Expected rates of return on the scheme assets;
- Mortality levels.

Details of post-retirement benefits including the major actuarial assumptions and the sensitivity of the post-retirement benefits to the assumptions are set out in Note 20 : pension plan assumptions.

Provisions

Provisions are recognised for the cost of remediation works where there is a legal or constructive obligation for such work to be carried out. Where the estimated obligation arises upon initial recognition of the related asset, the corresponding debit is treated as part of the cost of the related asset and depreciated over its estimated useful life.

Other provisions are recognised in the period when it becomes probable that there will be a future outflow of funds resulting from past operations or events that can be reasonably estimated. The timing of recognition requires the application of judgement to existing facts and circumstances, which can be subject to change.

Estimates of the amounts of provisions recognised are based on current legal and constructive requirements, technology and price levels. Because actual outflows can differ from estimates due to changes in laws, regulations, public expectations, technology, prices and conditions, and can take place many years in the future, the carrying amounts of provisions are regularly reviewed and adjusted to take account of such changes.

The nature and amount of provisions as well as the key assumptions are included within the financial statements are detailed in note 21. The discount rate applied to reflect the time value of money in the carrying amount of provisions requires estimation. The discount rate applied is reviewed regularly and adjusted following changes in market rates. If the estimated discount rate, one of the key assumptions in determining the environmental provisions, used in the calculation had been 1% higher than management's estimate, the carrying amount of the environmental provisions would have been €3.9 million lower.

Impairment tests for goodwill and other non-financial assets

Goodwill impairment testing is performed annually or of there is an indication of impairment. Goodwill impairment tests are based on cash generating units and compare the recoverable amount of the unit with the respective carrying amount. The recoverable amount of an asset or cash generating unit is the higher of its fair value less costs of disposal and its value in use. The value in use is determined using a discounted cash flow method, considering earnings forecast of the unit. The management of the Group identified the operating segments as cash generating units ("CGUs") for the purposes of testing goodwill for impairment. Each unit or group of units to which goodwill is allocated to shall represent the lowest level within the entity at which the goodwill is monitored for internal management purposes. The goodwill is internally monitored at the level of business units.

Intangible assets other than goodwill assets and property, plant and equipment are generally valued at cost less amortisation. Impairment losses on intangible assets and property, plant and equipment are recognised when the recoverable amount of the cash generating unit which includes the asset is lower than the respective carrying amount. In accordance with the definition of a cash generating unit under IAS 36, the individual production plants generally do not represent separate cash generating units, but are part of larger asset groups that form the cash generating units.

Since assessment whether goodwill or a non-financial asset is impaired is based on long-term business plans for the cash generating units and the determination of an appropriate discount rate, management uses significant estimates and assumptions in making these assessments. Details on the estimates used for the goodwill impairment test are disclosed in note 11.

Partial disposal of business with joint control retained

On 28 December 2022, the Group transferred 50% of its shareholding in INEOS Styrolution Advanced Materials (Ningbo) Pte Limited to China Petroleum & Chemical Corporation (Sinopec). As a result, the Group gave up control but retained joint control. The 50% equity share in the joint-venture acquired by the Group has been measured at fair value on the date of acquisition by applying discounted cash flow method based on a long-term business plan with a detailed planning period of seven years.

The discount rate of 9.0% applied to reflect the time value of money of the cash flows expected based on the long-term business plan requires estimation. If the estimated discount rate, one of the key assumptions in determining the fair value, used in the calculation had been 1% higher than management's estimate, the fair value of 50% share of the joint-venture will have been €81 million lower.

BUSINESS

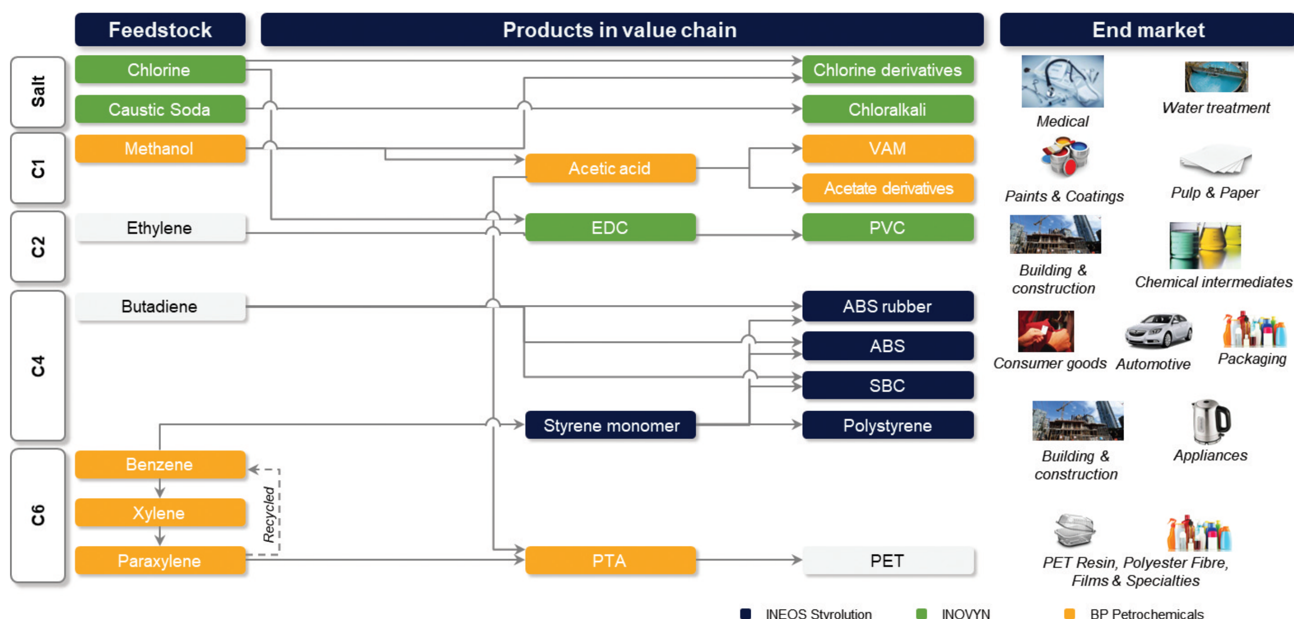
Introduction

We are a leading global petrochemicals producer, marketer and merchant. Our business operates 45 manufacturing sites in 19 countries in the Americas, Europe and Asia. We have a strong global footprint and leading market positions with respect to our key products. Our business benefits from cost advantages as a result of operating large-scale, highly integrated facilities strategically located near major transportation routes and customer locations.

We operate our business through four business segments: the Styrolution Business, the INOVYN Business, the Aromatics Business and the Acetyls Business. The products we manufacture are derived from crude oil and natural gas and salt, and include styrene, vinyls, aromatic chemical compounds and organic compounds. Our products serve a broad and diverse range of end markets, including packaging, construction, automotive, electronics, household, textiles, agrochemicals and healthcare. We benefit from the cost advantages of operating large scale, well invested, highly integrated facilities strategically located near major transportation facilities and customer locations. We and our predecessors have invested significantly in our production facilities to ensure that they operate efficiently, resulting in integrated, and state of the art production units. We believe these investments allow us to operate at lower cost and higher utilization rates than most of our competitors, and enable us to maintain positive margins and cash flows even during downturns in industry cycles or customer demand. For the twelve-month period ended December 31, 2022, our revenue was €18,172.3 million and HC EBITDA before exceptional items was €2,572.4 million.

Over the past several years, we have implemented a range of strategic initiatives designed to lower our operating costs, increase our profitability and further enhance our market position. These include fixed asset investments to expand our capacity in higher value products, to enhance productivity at our existing facilities, and to reduce our fixed cost structure through headcount reductions, production line closures and system upgrades. In addition, we have shifted our product portfolio to focus on more differentiated products, exited low-margin businesses and implemented premium pricing strategies designed to improve our margins. We believe these initiatives provide us with a strong platform to drive growth, create significant operating leverage and position us to benefit from volume recovery in our end markets.

The following presents our main products across the petrochemicals value chain:



Our History

Our combined business results from the combination of the historical INEOS Styrolution Business, the INOVYN Business and the Aromatics and Acetyls Businesses acquired from BP. The combination of INEOS Styrolution, INOVYN and the BP Aromatics and Acetyls Businesses represents a global leader providing broad geographical and product diversity, a balanced portfolio and world class manufacturing platforms. Our objective is to replicate the successful strategies of the Styrolution Business and the INOVYN Business with the Aromatics and Acetyls Businesses, taking advantage of synergies and other cost savings.

The Styrolution Business

The Company was incorporated on April 19, 2011 and the Parent was incorporated on December 18, 2015. Through a combination of direct and indirect transactions completed on October 1, 2011, the Styrolution Business inherited, with a few exceptions, the global styrenics activities of BASF and INEOS. As from that date, we engaged in the production of SM, PS, ABS and a number of other styrene derivatives under the category of "Specialties." The Styrolution Business was formed by INEOS and BASF as a 50:50 joint venture in order to create a low-cost global player in the styrenics sector that offers significant benefits to customers through enhanced efficiency, reduced costs and improved service and distribution at a global level.

The heritage businesses combined a rich history in innovation and leadership in the styrenics industry and had a record of achieving efficiencies and cost competitiveness. Among other examples, the BASF heritage business was responsible for the first styrene monomer synthesis and polystyrene polymerization in 1929 and 1930, respectively, and the INEOS heritage businesses can be credited with engaging in acquisitions and joint ventures in order to improve the efficiency and cost competitiveness of a number of businesses in the styrenics industry, including business segments once operated by Bayer, BP, Lanxess, Hüls and NOVA Chemicals. The Styrolution Business heritage businesses each had over 80 years of experience in the styrenics industry, and we believe that this experience has provided the Styrolution Business with a strong pedigree and strengthened its ability to compete and to continue to be a leader in technological innovation in the styrenics industry.

In 2014, INEOS signed a share purchase agreement with BASF SE and BASF Antwerpen NV, as sellers, for the acquisition of BASF's 50% share in INEOS Styrolution Holding GmbH (formerly Styrolution Holding GmbH). Upon consummation of such acquisition, the Styrolution Business became wholly owned by INEOS Industries, but continued to be operated and financed on a standalone basis.

Since the Styrolution Business became wholly owned by INEOS Industries, it has continued developing and expanding the business through the acquisitions of the global KResin Business, including a production site in Yeosu, South Korea, and two PS production sites in Ningbo and Foshan, China (acquired from Total SA), which strengthen our position in the domestic Chinese market. With the ongoing construction of an ASA plant in Bayport, Texas and a newly established joint venture arrangement with Sinopec including an under-construction world-scale ABS plant in Ningbo, China, Styrolution will further expand its production footprint. In 2022, the Styrolution Business sold its share in its Indian operations.

The INOVYN Business

INOVYN was formed on July 1, 2015 as a joint venture between INEOS and Solvay, which had a combined legacy of over 150 years of innovation and leadership in polyvinyl chloride, caustic soda, caustic potash and various chlorine derivatives, including epichlorohydrin. The formation of the joint venture created a leading player in the global PVC market.

The formation of INOVYN brought together the Kerling business of INEOS, which had a track record of acquiring and growing profitably a portfolio of PVC and related assets and of operating as a cost leader in its industries, and the Solvay business, which had a track record of product leadership and research and innovation, particularly in the specialty PVC market. The Kerling business included INEOS's chlor-alkali, PVC, hypochlorite, hydrochloric acid, chlorinated paraffins, chloromethane, brine and water businesses. The Solvay business included Solvay's chloromethane and European ECH businesses, its salt business in Belgium, France and Spain, SolVin's (previously a 75%/25% joint venture between Solvay and BASF, which became wholly owned by Solvay immediately prior to its contribution to INOVYN) European chlor-alkali and PVC assets and its 42.5% share of the Feyzin cracker.

On March 24, 2016, both shareholders entered into an agreement governing the exit of Solvay from the joint venture, pursuant to which INOVYN Limited agreed to redeem the shares held by Solvay. On July 7, 2016, following the consummation of the Solvay exit, INEOS became INOVYN Limited's sole shareholder.

Since the formation of INOVYN, the business has replicated the successful strategies of the Kerling and Solvay businesses and has taken advantage of the synergies achieved as a result of the combination, together with other cost savings. The INOVYN Business has also maintained its status as a low-cost producer and has built on its market leadership, including by growing the Specialty Vinyls Business into a specialty market leader. The INOVYN Business originally set a target of achieving cost savings in excess of €100 million by the end of 2017 for the combination of the legacy Kerling and Solvay businesses, but far exceeded this target with over €220 million of total savings on an annualized basis having been delivered since the formation of this business. These cost synergies have allowed it to become a more robust leader in an industry where cost competitiveness is critical to maintaining profitability through industry cycles and has allowed it to operate large scale, efficient, highly integrated and strategically located production facilities.

The Aromatics Businesses

The Aromatics Business was developed and grown organically as part of the Amoco Chemicals portfolio. Amoco was a leader in developing PTA and grew the business through deploying leading proprietary PTA chemical process technology originally in the U.S. followed by Europe and then China.

In the early sixties, the Aromatics Business's leadership in PTA technology started with the invention of an innovative hydrogen-based PTA purification process, which was patented by Amoco before its merger with BP. Since then, the Aromatics Business has been developing this technology. The first PTA plant was built in Decatur, U.S. in 1967, followed by a plant in Geel, Belgium in 1969 and the world's largest (at the time) PTA facility in Cooper River, U.S. This was followed by PTA plants in Taiwan in 1979, Indonesia in 1997 and three plants in Zhuhai, China in 2003, 2008, and 2015. The latest generation of this technology results in lower equipment count and reduces capital costs leading to improved operability and maintenance, higher reliability and plant availability. Various generations of this technology have been installed across the entire Aromatics Business asset base. We estimate that the latest PTA technology delivers a 65% reduction in greenhouse gas emissions, 75% less water discharge and 95% less solid waste disposal than conventional technologies.

The Acetyls Businesses

The modern Acetyls Business was developed and grown as part of the BP Chemicals portfolio after the acquisition of the acetic acid technology from Monsanto in the 1970s, starting with the facility at Hull, U.K. and growing through JV partnerships in Asia and Trinidad and Tobago, and a marketing partnership with Eastman in the U.S.

Overview of Products

The following table provides an overview of our production capacity and global market position and leading regional market positions (in each case, based on proportionate share production capacity) with respect to our key petrochemical products as of December 31, 2022.

Key product	Production capacity (kilotons)	Selected market position (by capacity)
Styrolution Business[1]		
Styrene Monomer	2,230	#2 Global
PS	2,024	#1 Global
ABS Standard	664	#3 Global
Specialties	747	#1 Global
INOVYN Business[2]		
Suspension PVC	1,845	#1 in Europe
Emulsion PVC	265	#1 in Europe
Caustic soda	2,086	#1 in Europe
Caustic potash	150	#2 in Europe
Aromatics Businesses[3]		
PTA	5,876	#1 in the U.S. #1 in Europe
PX	1,595	#1 in the U.S. #2 in Europe
Acetyls Business[4]		
Acetic Acid	2,620	#2 Global
Acetic Anhydride	165	#1 in Western Europe

(1) According to NexantECA and internal management estimates.

(2) According to Dow Jones Chemical Market Analytics and internal management estimates.

(3) According to Wood Mackenzie.

(4) According to IHS Markit and internal management estimates.

Business Overview

The Styrolution Business

The Styrolution Business operates through four business units: Polymers EMEA, Polymers Americas, Polymers Asia and Styrene Monomer. The Styrolution Business sells a comprehensive mix of products that includes both commodity (SM) and standard (PS and ABS Standard) products as well as Styrenic Specialties (ABS Specialty and copolymers). The Styrolution Business's products are used in a wide variety of focus industries, such as electronics, healthcare, household, packaging and automotive. The Styrolution Business currently operates a total of 16 manufacturing facilities across 9 countries.

The INOVYN Business

The INOVYN Business operates five main business units: General Purpose Vinyls, offering a portfolio of vinyls products to a number of industries, including the building and construction, electronics and packaging industries; Specialty Vinyls, developing a number of Emulsion PVC products and specialty Suspension PVC products, which have higher specifications than general purpose PVC; Organic Chlorine Derivatives, producing various chlorine derivatives for use throughout the chemical industry, including chlorinated paraffins, chlorinated solvents, allylics and epichlorohydrin; Chlor-Alkali, producing chlor-alkali chemicals including caustic soda, caustic potash, chlorine and chlorine by-products, brine and water, salt and hydrochloric acid; and Hydrogen, which is actively looking at first intent clean hydrogen production. The INOVYN Business currently operates 15 manufacturing operations in 8 countries.

The Aromatics Businesses

The Aromatics Business produces a variety of aromatic chemical compounds, including paraxylene ("**PX**"), purified terephthalic acid ("**PTA"**), benzene and metaxylene, which may be used in the production of a variety of products including, among others, polyester fibres, PET resins, and polyester film and used in a variety of end markets such as textiles, upholstery, household items, food packaging, flexible films and industrial products.

The Aromatics Business currently operates a total of six sites in five countries (two in the Americas, one in Europe and three in Asia), including sites operated by the Aromatics Business and sites operated by a joint venture in which the Aromatics Business holds an ownership interest. The Aromatics Business also includes a 61% interest in the CAPCO joint venture in Taiwan.

The Acetyls Businesses

The Acetyls Business produces a variety of organic compounds, including acetic acid, acetic anhydride, methanol, ethyl acetate and vinyl acetate, which are used in a variety of end market applications including, among others, building and construction materials, paints and coatings, automotive glass, polyester fibre, PET bottles, surface coatings, inks and solvents, cigarette filters, washing powders, wood acetylation and herbicides and pesticides.

The Acetyls Business currently operates a total of eight sites in seven countries (two in the Americas, one in Europe and five in Asia), including sites operated by the Acetyls Business and sites operated by seven joint ventures in which the Acetyls Business holds an ownership interest.

Business Segments

Set forth below is a discussion of our business segments: (i) Styrolution, (ii) INOVYN (iii) Aromatics and (iv) Acetyls, which covers the following areas: products and manufacturing, raw materials and energy, customers, research, product development and engineering, intellectual property, competition and sales, marketing and distribution.

The Styrolution Business

We operate the Styrolution Business through four business units: Polymers EMEA, Polymers Americas, Polymers Asia and Styrene Monomer.

Our styrenics product groups are Styrene Monomer, PS (including revenues not otherwise allocated to a product group, including from site services provided by the Styrolution Business as a host to third parties), ABS Standard and Specialties. Our styrenics product range consists of over 1,500 products with over 2,000 applications across various focus industries like electronics, healthcare, household, construction and automotive. As of December 31, 2022, the Styrolution Business held approximately 800 active patents and patent applications, reflecting our wide product range and more than 100 years of combined industry experience from its heritage businesses.

Our styrenics products are broadly organized in two categories: (i) commodity (SM) and standard (PS and ABS Standard) products and (ii) Specialties (ABS Specialty and copolymers). For commodity and standard products, we believe that we run a lean and cost-efficient setup with relatively few grades (or products), low complexity and limited technical service, but with a clear focus on high delivery reliability, short lead times and product quality consistency. Conversely, in our Specialties business unit, the primary focus is on providing a high level of customization, application innovation and technical support designed to generate additional value for customers, particularly in our focus industries (*i.e.,* electronics, healthcare, household, automotive and construction), for which we believe our Specialties offer a unique value proposition. We regularly pursue close R&D cooperation with customers.

The Styrolution Business benefits from the cost advantages of operating large-scale, integrated facilities strategically located near major transportation routes and customer locations, including the largest chemical production site in Europe at Antwerp, Belgium, and the largest single production line styrene plant in the world at Bayport (Texas), U.S.

The Styrolution Business's total cash expenditure on property, plant and equipment has increased in the last two years from €477.0 million in 2021 to €551.0 million in 2022, with particular emphasis on a new ASA Specialties plant in the Houston, TX area and a new ABS plant in China, which was transferred into a newly established joint venture with Sinopec in December 2022. We believe investments allow the Styrolution Business to expand the business and to operate our sites at lower cost and higher utilization rates than most of our competitors, and help the Styrolution Business maintain positive margins and cash flows even during industry downturns or its periods of decreased customer demand.

The following table presents the Styrolution Business's historical Revenue and EBITDA before exceptional items.

	For the year ended December 31,	
	2022	2021
	(in €million)	
Revenue	6,634.3	5,889.7
EBITDA before exceptional items	748.6	1,180.3

The Styrolution Business is led by a highly experienced management team with, on a combined basis, over 150 years of experience in the petrochemical industry. The Styrolution Business management team has devised a long-term "Gear Up" strategy focused on profitable growth, resilience and sustainability of EBITDA before special items margins. The key pillars of the Gear Up strategy are:

1. Continue increasing the Styrolution Business's exposure to high-growth regions, products and customer industries.

2. Seek to be a front runner in the circular economy with products containing recycled or bio-attributed contents that live up to our customers' premium quality expectations.

3. Reduce our carbon footprint and have a positive impact on societies with our safe and efficient materials.

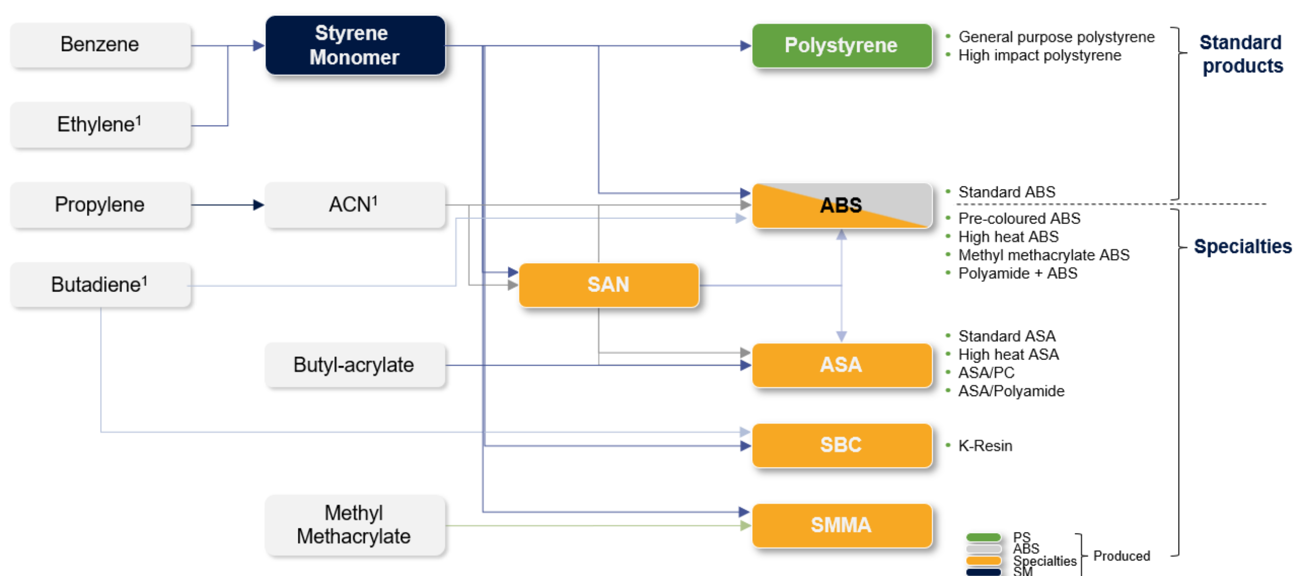
In line with the Styrolution Business Gear Up growth strategy, we are expanding our asset footprint by building a new ASA plant in Bayport, Texas and a world-scale ABS site in Ningbo, China, which was transferred into a newly established joint venture with Sinopec in December 2022.

The principal raw materials and feedstocks for our Styrolution Business are ethylene, benzene, butadiene, acrylonitrile, styrene and energy. The costs of these feedstocks are principally driven by the price of crude oil and natural gas and the availability of crackers.

Products and Manufacturing

The Styrolution Business offers a broad range of over 1,500 products, with over 2,000 applications across various industries, with most of the products being customized Specialties. The following diagram sets forth a summary of the inputs and outputs of the production chain for our major products.

Product scope in the styrenics value chain



Source: Company information.

Styrene Monomer (SM). Styrene is a liquid hydrocarbon produced from ethylene and benzene, using either the ethylbenzene dehydrogenation ("**EBSM**") process or the POSM process. EBSM is the more traditional method for producing styrene, where ethylene is alkylated with benzene to produce ethylbenzene, which is dehydrogenated to produce styrene. This basic method has been used commercially for over 50 years, during which it has been adapted and refined to improve the quality of the end product and to minimize the amount of energy and other resources, such as electricity, fuel, steam and cooling water, used in its production. POSM is an alternative process whereby propylene oxide is produced, and styrene is generated as a co-product. POSM may decline in the future as new methods of producing propylene oxide have been designed, which do not yield any SM as a by-product. Both the EBSM and POSM processes are large-scale and capital intensive. We use the EBSM method to produce our styrene because the alternative, the POSM process, is used only when the aim is to produce propylene oxide.

Styrene is an intermediate used in the production of plastics, resins, rubbers and latexes, with key end applications in areas such as packaging, electronics and appliances, construction (primarily insulation) and automotive components.

Because we produce nearly as much SM as we consume in our production of polymers, we consider our polymers business to be vertically integrated. However, there are imbalances in the geographical distribution of our SM production as compared to the location of our polymers production. As a result, we sell a portion of our SM production to external customers, mainly in the Americas, where we have regional production in excess of our consumption. Conversely, we purchase a comparable amount of SM from external suppliers, mainly in Asia, where we have no regional production, and, to a more limited extent, in EMEA. Because we could choose to export SM from North America to Asia if Asian purchases became disadvantageous, our price exposure on such purchases is limited to transPacific transportation costs and the price risk due to the multiweek shipping time for transPacific deliveries. This is also true of competitors with comparable geographical SM supply and demand imbalances.

Polystyrene (PS). Polystyrene is a thermoplastic resin produced by the polymerization of styrene. It exists in solid state at room temperature but melts if heated and becomes solid again once cooled. It is converted through extrusion, thermoforming or injection molding into end products for a wide range of end applications, including electronics, healthcare equipment, household appliances, construction, toys, office supplies and packaging.

Polystyrene is produced on dedicated lines (*i.e.,* other products are not produced on the same lines). Polymerization of styrene can be initiated by either heat or initiators, and usually occurs in stages with the temperature increasing at each stage. When the polymerization is complete, the polymer is removed from any diluent and/or catalyst, and washed. The polymer is then extruded and cut into easily transportable pellets. We produce two types of polystyrene: general purpose polystyrene (GPPS) and high-impact polystyrene (HIPS). Both GPPS and HIPS are used in injection molding and extrusion applications.

General purpose polystyrene (GPPS). GPPS is a clear, hard, usually colorless thermoplastic resin. GPPS is a crystal-clear amorphous product utilized in packaging, foamed containers, foam insulation, cutlery, medical lab-ware, clear cups and containers.

High-impact polystyrene (HIPS). HIPS, one of the most widely used thermoplastics, has great dimensional stability and balanced properties of impact strength and heat resistance, is easily processed and is relatively low in cost. HIPS is essentially GPPS with around 5% to 10% rubber incorporated through a grafting process in the course of the polymerization process to enhance the mechanical properties. HIPS products are used in refrigerator liners and parts, vending cups and lids, dairy containers, appliance components, cosmetics cases, toys and various consumer products. HIPS is opaque to translucent and is impact resistant.

Customers have some ability to substitute between HIPS and GPPS, and many customers use HIPS and GPPS in a blend. The ability to substitute GPPS for HIPS or to change the respective proportions in the blend is based on the mechanical properties required by the customer.

Acrylonitrile butadiene styrene (ABS). ABS is a tough, opaque, scratch-resistant material with high impact resistance, which can be readily processed by most thermoplastic fabrication techniques, including injection molding (used to produce a variety of consumable and industrial goods) and extrusion (used to produce, among other things, sheet, pipe and electrical conduit). The main applications of ABS include electrical appliances such as vacuum cleaner components, washing machine panels and control devices, information technology devices such as computer and printer housings and automotive parts such as dashboard components, air vents, center consoles and glove boxes. ABS is regarded as a "bridge" polymer between commodity plastics (such as polystyrene, PP and PET) and higher performing engineering thermoplastics (such as nylon/polyamide or polycarbonate ("**PC**") resins), PET and other alloys with polyesters ("**PBT**"), polyamide ("**PA**") and PC. The major advantages of ABS include its high gloss (when produced via the most widespread "emulsion process"), the ability to be painted or electroplated, impact resistance and heat resistance as well as in general its lower cost compared to other engineering plastics.

ABS is produced from three monomers: acrylonitrile (provides thermal and chemical resistance), butadiene (provides rubber-like ductility and impact resistance) and styrene (provides stiffness, the ability to be easily processed and reduces overall cost). ABS resins typically contain at least 50% styrene, with varying proportions of acrylonitrile and butadiene. There are two main processes that can be used to produce ABS: mass and emulsion. In the mass process, styrene and acrylonitrile are mass polymerized in the presence of a rubber substrate (polybutadiene or styrene butadiene elastomer). In the emulsion process, ABS is prepared by polymerizing butadiene in aqueous emulsion using radical initiators, emulsifiers, followed by a grafting step of emulsion polymerizing styrene and acrylonitrile onto the polybutadiene latex elastomer substrate. Today's most cost-efficient, world-class ABS plants employ the emulsion process. The emulsion process allows the production of a wider variety of grades of ABS. Most of our plants are emulsion process plants, and over 90% of global ABS production occurs using the emulsion process. To address niche demands for mass ABS, *e.g.*, in low-gloss applications and extrusion, we operate mass ABS lines in Wingles, France and through our contract manufacturer INEOS ABS in Addyston, U.S

Because ABS is usually visible in its final applications, ABS is almost always colored before use. The coloring step can be undertaken either by integrated resin producers, by independent compounders or by the customers themselves. Customers with self-coloring facilities generally favor buying natural (uncolored) product and self-coloring for the majority of their requirements but may elect to purchase pre-colored ABS if they desire relatively small volumes and/or a high degree of color consistency.

ABS Standard. Customers who do not have in-house coloring equipment need to buy pre-colored ABS, either from an ABS producer or from a compounder. Independent compounders buy ABS Standard from an ABS producer and then color it themselves for supply to end users. Compounders also compound ABS with other additives to tailor it to their customers' requirements. We offer both standard and pre-colored ABS products, which latter category we treat as Specialties. We produce ABS Standard products (and some large-volume colors such as "standard black") in four plants (Altamira, Antwerp, Wingles and Ulsan), serving each of the three regions (Americas, Europe, Asia), under the trademark Terluran® and Lustran®, using top technology with high efficiency.

Specialties

The styrene based copolymers and ABS Specialty market is composed primarily of the following product areas.

ABS Specialty. We typically produce ABS Specialty, or pre-colored ABS, using two-step production processes, enabling us to produce customized colored grades efficiently.

In addition to coloring, alterations in the mix of feedstocks used, and in the use of additives, allow considerable versatility in the tailoring of ABS properties to meet specific customer requirements. Such requirements can, for example, relate to the impact strength of the ABS (high impact grades), the flow properties (high flow grades), the Vicat softening temperature (high heat grades), the flammability (flame retardant grades), and the platability (plating grades). We also produce medical grade ABS for use in medical applications such as inhalers. Precolored ABS is sold under the trademarks Novodur® and Lustran® .

Styrene-acrylonitrile (SAN). SAN is a rigid and transparent polymer made from styrene and acrylonitrile. SAN is one component in the production of ABS, but we also produce a high-quality form of SAN in a dedicated plant in Ludwigshafen (Luran®). In addition, SAN has some commercial end uses as a transparent polymer in its own right, including in kitchenware, computer products, battery cases, ball pens and packaging material. SAN is generally produced as an intermediate by-product in the ABS production process. It may also be produced in dedicated SAN plants. The bulk of our SAN is produced as an intermediate product.

Styrenebutadiene block copolymers (SBCs). SBCs are a class of block copolymers of styrene and butadiene produced either as an elastomer (Styroflex® and K-Resin®) or as a rigid product (Styrolux®). Rigid products have a high transparency and are often used to "toughen" GPPS. These products exhibit high surface gloss, rigidity and toughness, they can be printed, and they can be compounded with other materials. The other type of SBCs, elastomers such as styrenebutadienestyrene ("**SBS**"), have high performance abrasion resistance and are frequently used for injection modeled parts as a hotmelt adhesive or as additives to improve the properties of bitumen. SBCs are produced on dedicated manufacturing lines.

Acrylonitrile styrene acrylate (ASA). ASA is a styrene derivative produced by introducing a grafted acrylic ester elastomer (elastic polymer) in a polymer matrix consisting of SAN. ASA was first introduced by BASF AG in 1967 under the trademark Luran® S (which we own today), with the goal of creating a material similar to ABS but with better weather resistance. ASA has good toughness and rigidity, chemical resistance and thermal stability, outstanding resistance to weather, ageing and yellowing, and high gloss. ASA is suitable for injection molding, extrusion, blow molding and thermoforming. End uses include automotive components (exterior mirror and lamp housings, radiator grills and dashboard trims), construction (siding panels, window frames, door panels, rain gutters and fences), telecoms (TV antenna parts, cable

connection housings), appliances (washing machine panels, refrigerator handles and microwaves), sports and leisure equipment (surfboard and sailboat parts) and sheet applications for pool/spa use. ASA is also blended with polycarbonate for use primarily in higher end automotive applications. We produce both ASA and ASA blends.

Methyl methacrylate acrylonitrile butadiene styrene (MABS). MABS is a tough, transparent plastic, with high brilliance and surface finish. It exhibits good chemical resistance, good tensile strength and stiffness and is easy to process, print on, sterilize and bond with other resins. MABS can be produced in several ways. One method involves the polymerization or blending of grafted rubber with a polymer of styrene, methacrylate and acrylonitrile. Another method involves compounding SAN with polymethyl methacrylate (PMMA) and polymethacrylate butadiene styrene rubber. MABS is used in applications including medical technology and diagnostics, cosmetics and hygiene (*e.g.,* toothbrushes and soap dispensers), sports and leisure (*e.g.,* musical instruments and watches) and home and office (*e.g.,* printers and loudspeakers). We sell MABS under the trademark Terlux®.

Polyamide/ABS (PA+ABS). PA+ABS is a blend based on polyamide and ABS, combining excellent impact strength at high and low temperatures, high surface quality, easy processing, chemical resistance, heat resistance and a high quality finish. PA+ABS is used in applications in the automotive sector, in housings for power tools, and in garden equipment and sporting goods. PA+ABS is tougher and more durable than either PA or ABS separately. It is formed by reactive compounding the two base products in the presence of a compatibilizer. We sell PA+ABS under the trademark Terblend® N. We also have a special, weather-resistant grade of PA/ASA, which we sell under the trademark Terblend® S.

Styrene methylmethacrylate (SMMA). SMMA resins (NAS®) are clear, non-impact-resistant resins, which can be used in household, packaging, office, medical and electronic applications. Applications for SMMA resins include water filter jugs, vacuum and floor care components, office products, pencil barrels, paper towel dispensers, medical devices and toys. Blends of NAS® with SBC are marketed under the trademark Zylar®. They have high impact strength coupled with high clarity, making these products suitable for applications requiring clear appearance and superior break-resistance.

The table below shows the regional breakdown of our capacity in relation to each of our product categories as of December 31, 2022.

	EMEA (kilotons)	**in %**	**Americas (kilotons)**	**in %**	**Asia (kilotons)**	**in %**
SM	560	30%	1,670	63%	0	0%
PS	591	31%	767	29%	666	59%
ABS	310	17%	110	4%	244	22%
Specialties	417	22%	115	4%	215	19%
	1,878	100%	2,662	100%	1,330	100%

Source: Company Information

Note: Specialties and others include ABS (Novodur), SAN (Luran), ASA (Luran S), MABS (Terlux), PA+ABS (Terblend N) and SBC.

Raw Materials and Energy

Except for SM, most of which is sourced inhouse, the majority of our raw materials sourced for the Styrolution Business are supplied under industry standard contracts, usually with duration of 1 year, from leading industry participants at market prices. This includes arm's length contracts at market prices from INEOS, which cover approximately 10% of our raw material needs. Depending on market conditions, we allow for spot exposure and purchase a smaller fraction of raw material needs (notably Benzene, Styrene in mainly Asia) in the spot markets

The principal raw materials and feedstocks for the Styrolution Business are ethylene, benzene, butadiene, acrylonitrile, styrene and energy. Below are our main suppliers for each raw material.

Acrylonitrile. Acrylonitrile is a petrochemical intermediate used in the production of, among other things, SAN, ABS and ASA. Acrylonitrile is a globally supplied chemical intermediate, with shipments by pipeline, road, train or ship, with over 20 producers worldwide. Acrylonitrile is mainly supplied by INEOS Nitriles. Other suppliers include Cornerstone, AnQore, PTT Asahi, Tongsuh and Taekwang Industrial.

Benzene. Benzene is the main raw material for styrene (through its use in ethylbenzene) and is mainly produced from refinery processes or as a coproduct of steam cracker operations (pygas) or through disproportionation of Toluene (into Benzene and Xylenes). As a result, it is readily available in the vicinity of several of our sites or, like ethylene, is supplied by one of the major pipeline systems connecting major petrochemical complexes or by vessel. We source benzene from a broad spectrum of the main global benzene producers. We buy most of our benzene through contracts, but our pricing formulas can be based on published spot prices, contractual terms or a blend thereof. Our main benzene suppliers are TotalEnergies, Saudi Aramco, Exxon Mobil, Marathon Petroleum Corporation, NOVA Chemicals and Samsung C&T Corporation.

Butadiene. Butadiene is a flammable, colorless gas used extensively for various polymerizations for plastics manufacturing. It is the key input to polybutadiene (PB) rubbers, which are used in the production of HIPS and is one of the three key inputs to ABS. Butadiene can be produced in two ways: as a byproduct of the steam cracking process used to produce ethylene and other olefins (greater than 95% is produced in this way), or from dehydrogenation nButane or via the ethanol route (especially suitable for small plants as low capital investment is required). Butadiene is available within integrated chemical complexes and is also available on the open market with shipment by pipeline, ship, road or train. Our main butadiene suppliers are Shell, DOW, EXXON Mobil, BASF, INEOS O&P, SK Global Chemical, Braskem, PTTGC, Bangkok Synthetics, YNCC, Hanwa Total.

Butyl acrylate. Butyl acrylate is a flammable liquid and vapor. Butyl acrylate is used in the production of ASA and in the production of coatings and inks, adhesives, sealants and textiles. It is mainly produced from butanol and acrylic acid. Our main suppliers are BASF, Arkema, LG Chem and DOW.

Ethylene. Ethylene is a flammable gas obtained in a process called cracking, in which hydrocarbons are heated, causing chemical reactions that split the carbon-hydrogen or carbon-carbon bonds of the feedstock. Ethylene is a key building block of the petrochemical industry and is used to produce a large number of higher value-added chemicals, including styrene. Ethylene is either available directly on our production sites from adjacent steam cracking facilities or is supplied by one of the pipeline systems connecting major petrochemical complexes (*e.g.,* the ARG pipeline in Europe). We typically source ethylene from crackers at sites adjacent to our own, through long-term contracts, or from one of the main pipeline networks, including the ARG pipeline in Europe. Our main suppliers of ethylene are BASF, INEOS and NOVA Chemicals.

Styrene. Styrene (also called styrene monomer or SM), a hydrocarbon that under normal conditions is a flammable liquid, is produced from ethylene and benzene, typically brought together in a reaction with a catalyst to form the intermediate ethylbenzene. See "*—Products—Styrene Monomer*" above. We use SM in the production of our polymers. For the North American region, all of the SM we need is produced in-house and only in exceptional situations (for example, for turnaround coverage) do we purchase from third parties. Any excess SM is sold into the North American market or exported to our operations as well as third parties in other regions. For the EMEA region, the SM we need is sourced from a mix of in-house production and external purchases. For the APAC region, the SM we need is purchased externally.

Energy. Energy, mainly in the form of electricity, natural gas and steam, is an essential utility in order to run our operations. Styrenics production requires large amounts of electricity, and the processing of styrene monomer in particular also requires large amounts of steam and natural gas. Steam is either produced in own boilers (e.g. Bayport SM plant) or acquired through long term agreements at industrial sites like Antwerp (BASF) or Cologne (Currenta). Electricity and natural gas is supplied from local or regional grids by reputable large suppliers, partially government regulated.

Customers

The Styrolution Business has a global and diverse base of approximately 4,000 customers, through which it serves a wide range of end markets in more than 100 countries. The Styrolution Business's strategic focus industries consist of the electronics, healthcare, household, automotive and construction sectors, which we consider to be high-growth markets.

Electronics. Growth in the electronics industry has been fueled by widespread digitalization and increasing demand from emerging markets. We believe there is potential for further styrenics-related growth particularly in the fields of optics and haptics. The electronics industry has been characterized by cost pressures on mature devices that have reached the end of their life cycles. We serve the electronics sector through our PS, ABS Standard and Specialties businesses. We believe that we can capture market share in this industry in particular as a result of interpolymer substitution as well as due to demand growth in Asia.

Healthcare. The healthcare industry has been fueled by the rise of wealth- and age-related diseases, and by the recent COVID-19 pandemic. Recent developments relevant to styrenics include mobile diagnostic solutions and new drug delivery approaches. Health-related innovations have been particularly sought out in Asia, which is one of our target emerging markets. The healthcare industry is also characterized by strict regulation, compliance with which can give styrenics industry participants an edge over competitors. We serve the healthcare sector mainly through our PS and Specialties businesses. We have already established strong ties with the healthcare industry with the creation of a tailored healthcare service package, through which we provide services such as notifications of change, prolonged supply guarantees and extended raw material certification.

Household. The household industry has been fueled by improving wealth and infrastructure, particularly in emerging markets. Brands, designs and haptics have also acquired increasing significance in such markets, as has the development of environmentally sustainable solutions globally. We serve the household sector through our PS, ABS Standard and Specialties businesses. We believe we can capture a greater household industry market share by increasing our presence in emerging markets.

Automotive. We estimate that, after a decline in 2020, global vehicle output recovered in 2021 and grew by roughly 4% year-on-year in 2021 and 6% in 2022, still stay clearly below the 2018 vehicle production levels. The automotive industry has recently been affected by limited availability of microchips and the COVID-19 pandemic. The industry is characterized by mass customization and a focus on design and has lately been impacted by more stringent emissions requirements and the shift toward electrical vehicles. It seeks to use lightweight materials and make so called "lean" process improvements to increase efficiency. We serve the automotive sector mainly through our ABS Standard and Specialties businesses. We believe that the main assets we bring to this industry are our high aesthetics solutions produced at low cost and weight.

Construction. The construction industry has been fueled by continued urbanization across the world and a need for affordable housing materials. Industry participants have also recently focused on achieving high energy efficiency. We serve the construction sector through our PS, ABS Standard and Specialties businesses. We believe we can capture demand growth in the construction industry, in particular in Asia, due to our broad, multi-niche product offerings.

Toys, sports & leisure. We serve the toys, sports & leisure sector through our PS, ABS Standard and Specialties businesses.

Packaging. We serve the packaging sector mainly through our PS and Specialties businesses. Although the packaging sector accounts for a high percentage of our revenue, it is not one of our focus industries because of its poor growth prospect. Demand for Styrenics (Polystyrene) for Packaging in Europe has been declining by 2% to 3% on average in recent years and the decline is expected to continue due to Single Use Plastics bans and potential taxes on packaging. In the Americas, demand has been stagnant to declining while demand in Asia continues to grow at a low pace (1% to 2%).

Within each of our end markets, we have long-standing relationships with large and well-established players in the industry (*e.g.,* Samsung, Lego, Covestro, BASF, Bayer, Stora Enso, Lanxess, Benvic, INEOS, Huntsman, Brenntag, Haier, Ravago, BSH, Rehau, Whirlpool, Electrolux, Bosch, Ficosa, Magna, Panasonic, Solvay, Danone, Pactiv, Thermofisher, Kemira, B. Braun, BMW, Daimler, Pentaplast and Volkswagen).

Below is an overview of our main customer profile for each of our product categories.

SM. Because we produce nearly as much SM as we consume in our production of polymers, we consider our polymers business to be vertically integrated. However, there are imbalances in the geographical distribution of our SM production as compared to the location of our polymers production. As a result, we sell a portion of our SM production to external customers, mainly in the Americas, where we have available capacity to serve non captive needs. Our external SM customers include a number of consumers of SM, which produce materials used across all of the major end markets, including electronics, healthcare, household, automotive, construction (*i.e.,* insulation, paint, and carpet adhesives) and packaging.

PS. We have long term relationships with industry leading customers, including household names in the consumer electronics and appliance segments, as well as some of the largest producers in the consumer packaging segment.

ABS Standard. In the ABS Standard market, we serve the automotive, electronics and household sectors.

Specialties. For Specialties, we focus on offering customized products and on developing tailored solutions. The primary focus is on working directly with our customers to support them by designing products with characteristics (in terms of grade and color) that will meet their specific needs. In particular, within the Specialties business (as well as for ABS Standard), we are actively seeking to continue increasing our exposure to our five focus industries (electronics, healthcare, household, automotive and construction) as we expect that these will grow faster than GDP in the coming years.

Research, Product Development and Engineering

At the time of the formation of the Styrolution Business, INEOS and BASF contributed considerable proprietary know-how, which positioned us as a technologically advanced business from the outset. Today, the Styrolution Business's global asset footprint is complemented by five research and development centers located in the U.S., Europe and South Korea. The table below summarizes the product focus of each Styrenics R&D site.

Overview of R&D sites

R&D site	Country	Product focus	Geographical focus
Cologne	Germany	ABS Standard and ABS/ASA/SAN Specialties	Global and regional
Channahon	U.S.	PS, ABS Standard, ABS/ASA/SAN Specialties and SMMA	Regional
Ulsan	South Korea	ABS and ABS/ASA/SAN Specialties	Regional
Wingles	France	SBC and PS	Regional
Antwerp	Belgium	SBC	Global

Source: Company information.

Our Styrenics R&D resources are provided through our global R&D sites in Cologne and Antwerp and our regional development centers in Cologne, Wingles, Channahon and Ulsan, as well as our external R&D partners.

We believe that our styrenics industry research centers facilitate the joint development of high value added products with our styrenics customers.

Globally, we have the equivalent of approximately 87 fulltime employees in our styrenics R&D community, which is composed of units for basic R&D, technology, market development, technical product development, technology service and future business innovation. Our approach to Styrenics research and development is twofold: (i) for commodity (SM) and standard products (ABS Standard, PS), we focus on optimizing the manufacturing process to further improve our cost position; whereas (ii) for Specialties, our objective is to develop tailormade solutions for customers to generate a unique value proposition by end market teams. In the year 2022, we have spent a total of €13.4 million on Styrenics global research and development activities.

Our market development functions are integrated into our marketing organization and they work directly with our customers to devise innovative solutions for their businesses. To strengthen our Styrenics R&D capabilities, in 2013 we entered into a partnership with universities and research companies (for example, Neue Materialien Bayreuth, an independent research and technology development provider in the field of new materials). This cooperation goes beyond traditional models of corporate cooperation with academia as it features a dedicated research team that constantly evaluates new technologies for use in styrenics. We believe that this strategic partnership, coupled with our global Styrenics R&D network, accelerates the pace of customer centric innovation and further positions us for future growth. We recently entered into a collaboration in the field of sustainable materials with the University of Ghent. In Asia and the Americas, we maintain cooperations with established institutes for polymer science (Ulsan University, Rutgers University) to discuss development needs in local projects.

Intellectual Property

The Styrolution Business owns intellectual property associated with our manufacturing, with an extensive range of approximately 800 patents and patent applications covering polymerization processes, products and applications for all major styrenics markets. The Styrolution Business also owns approximately 800 trademark registrations globally. Thus, we maintain a portfolio of registered patents and trademarks in a large number of territories in order to support our global Styrenics sales and to ensure broad freedom to operate. In addition, we maintain trade secrets and proprietary information through customary noncompetition undertakings with our employees and contractors and through confidentiality agreements with our contractors, development partners and customers. We receive certain intellectual property and technical knowledge related services from our affiliates on arm's length terms.

Since 2017, we have also created intellectual property in the field of chemical recycling of styrenic polymers as a result of our active research and development into sustainability topics.

We are not aware of any threatened, proposed or actual proceedings that have been or will be brought against us for infringement of third party rights or any infringement of our rights by third parties that if successfully prosecuted would have a material and adverse effect upon the Styrolution Business.

Competition

SM. We estimate that we were the second largest global producer of SM by owner in 2022, accounting for an estimated 5% of global capacity. In 2022, we believe that we were also the largest SM producer in North America, where we held an estimated capacity share in the range of 25% to 30%. In Western Europe, we held an estimated 10% capacity share (including through the operation of the largest integrated styrenics plant in Europe at our Antwerp site), placing us sixth in the region. We estimate that about 60% of global capacity is in Asia, and Asian competitors have announced increases in capacity, particularly in China. For our Group, Asian demand is either met by Asian producers, primarily from Chinese, Japanese or South Korean sources or through imports from Middle Eastern or U.S. producers. Depending on economics, we might transport our own U.S. based product to meet Asian demand, although, historically, we have not done so consistently.

PS. We believe that, in 2022, we were the largest global producer of PS by owner, accounting for approximately slightly below 15% of global capacity. We were also the largest producer in Western Europe, where we held an estimated 30% capacity share, and in North America, where we also held approximately 30% capacity share. In both regions, the market is concentrated, and there are only very few competitors producing there. In Asia, we expanded our footprint in China through the acquisition of two PS plants in Ningbo and Foshan in February 2019. The acquisition resulted in the Styrolution Business becoming one of the largest producers, accounting for 7 to 10% of the market's capacity. The Asian PS market is much more fragmented than the European and North American markets, with major competitors coming from China, Taiwan, South Korea and Japan.. Capacity increases are announced by Chinese producers.

ABS Standard. We believe that, in 2022. we were the third largest global producer of ABS, with an estimated share of global capacity of approximately 10%. As North-East Asia is by far the largest market in the world, our biggest competitors are Asian companies. In Western Europe, we held a number one position, with approximately 50% ABS market share by capacity in 2022. In North America, we estimate that we were the second largest ABS producer by capacity, with an estimated 35% capacity share. In Asia, we have a relatively small capacity footprint in relation to the overall market size, accounting for an estimated 3% of the market, which corresponded to approximately tenth position ranking in Asia. The Asian market for ABS Standard is dominated by Korean, Chinese and Taiwanese competitors. We expect the importance of the Asian, in particular the Chinese, market to grow further and expect additional capacities to come on stream there in the next few years.

Specialties. Based on management estimates, we believe we held the number one position for styrenic Specialties globally, as well as in Europe and the Americas in 2022, in each case as measured by owner and treating joint ventures as separate owners from their joint venture partners. However, our presence in China and in wider Asia remains relatively small. Our sites South Korea and Thailand produce and sell Specialties. We believe our main global competitors in the Specialties product category to be Japanese, Korean and Middle Eastern companies.

Sales, Marketing and Distribution

The sale and marketing of all of our styrenics products is managed by our own global and regional industry sales teams and product management teams. The styrenics sales and product management teams are distributed across Europe, the Americas and Asia and focus on the interaction with customers on all commercial and technical topics. The product management teams further evaluate any required actions by our R&D, supply chain and productions departments, thereby ensuring fast and effective product life cycle management.

Our dedicated industry sales teams operate depending on the characteristics of the target industries. We have industry sales teams for our target industries and also coordinate the efforts on a global basis for each of the electronics, healthcare, household, automotive and construction industries. Together the sales teams focus on existing as well as new styrenics applications with original equipment manufacturers ("**OEMs**") and their suppliers (*e.g.,* molders). By harnessing their in-depth industry and product knowledge, application development teams create new styrenics applications in close collaboration with end product manufacturers.

Account management and customer service for our styrenics customers are organized regionally. For selected styrenics customers, we have established a Key Account Management structure. We conduct most of our styrenics sales directly with B2B customers in a wide range of industries. The remainder of our styrenics sales take place through a network of distributors. Most of our sales arrangements are based on sales contracts with a term of one year or less, in line with industry practice. Nevertheless, our customer relationships are long-lasting, with some having been in place for decades.

We have access to a comprehensive transportation network and associated logistics infrastructure. We believe this network enables us to move feedstocks and products at competitive rates. We typically distribute our styrenics products by sea, rail or truck or a combination thereof.

The INOVYN Business

We currently operate the INOVYN Business through five main business units:

- *General Purpose Vinyls Business Unit:* The General Purpose Vinyls Business unit offers a portfolio of vinyls products to a number of industries, including the building and construction, electronics and packaging industries. The INOVYN Business produces Suspension PVC products and PVC resins ("**general purpose PVC**"), which are typically used in potable (used for drinking water) and gravity (used for wastewater) pipes, window frames, cable insulation, food and pharmaceuticals packaging, automotive and domestic appliances and medical supplies. According to Dow Jones Chemical Market Analytics, we are the largest producer of general purpose PVC in Europe, based on our capacity as of December 31, 2022.

- *Specialty Vinyls Business Unit:* Our Specialty Vinyls business unit develops a number of Emulsion PVC products and specialty grade Suspension PVC products (together, "**specialty PVC**"), which in general have higher specifications than general purpose PVC and may be used in, among other things, flooring and wallcoverings; clothing and furniture; high-tech dashboards, interiors and endurance components for cars; lightweight composites for clean energy; and medical equipment in hospitals. According to Dow Jones Chemical Market Analytics, we are the largest producer of Emulsion PVC in Europe based on our capacity as of December 31, 2022. We believe that we are the number one in Specialty Vinyls globally in terms of sales.

- *Organic Chlorine Derivatives Business Unit:* The Organic Chlorine Derivatives business unit produces various chlorine derivatives for use throughout the chemical industry, including chlorinated paraffins, chlorinated solvents, allylics and ECH. We are a key supplier of ECH to Greater Europe and an important player with significant market share in the U.S. market. According to Dow Jones Chemical Market Analytics, we are the second largest producer of ECH in Europe based on its capacity as of December 31, 2022, but we believe that we are number one in terms of merchant market sales since our competitors consume most of their production.

- *Chlor-Alkali Business Unit:* Our Chlor-Alkali business unit produces chlor-alkali chemicals, including caustic soda and caustic potash, chlorine and chlorine by-products, brine and water and salt, which are all essential ingredients in a wide variety of everyday industrial applications and are used in the production of many of the INOVYN Business's other products. According to Dow Jones Chemical Market Analytics, we are the largest producer of caustic soda in Europe based on our capacity as of December 31, 2022.

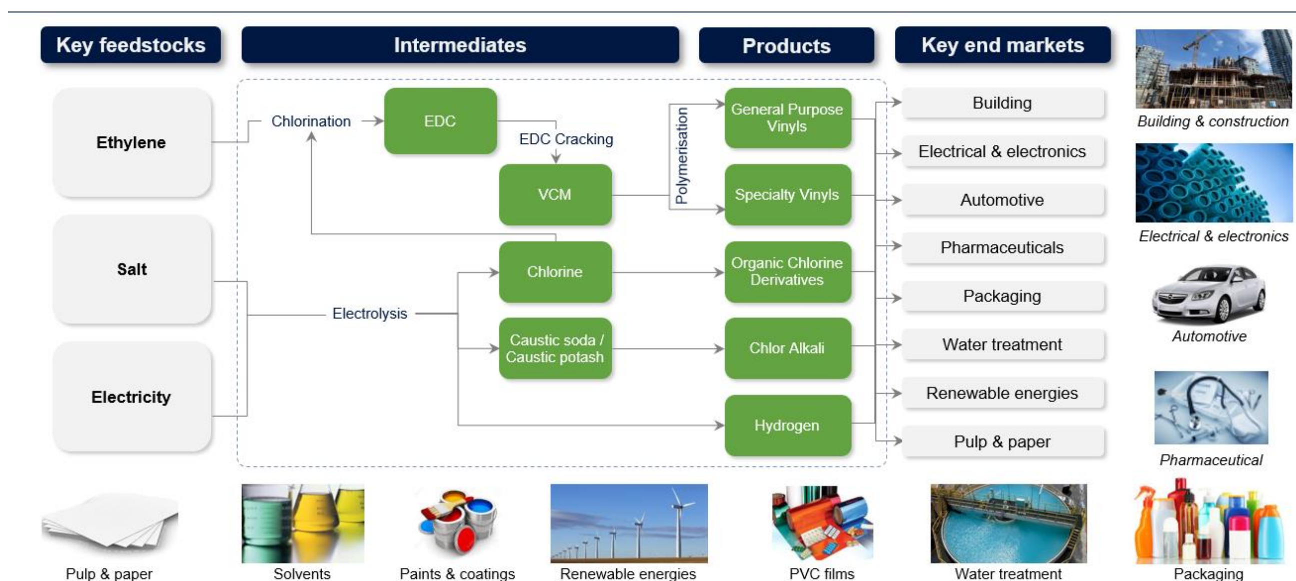
- *Hydrogen Business Unit:* Our Hydrogen business unit produces hydrogen from its existing chlor-alkali cellrooms. It is also actively looking at first intent clean hydrogen production projects on behalf of INOVYN and the wider INEOS group, utilizing INOVYN's extensive electrolysis know-how which is the critical technology used to produce green hydrogen from renewable energy.

The following tables present the INOVYN Business's historical Revenue and EBITDA before exceptional items.

	For the year ended December 31,	
	2022	2021
	(in €million)	
Revenue	5,136.2	4,225.6
EBITDA before exceptional items	1,176.0	974.4

The balance and diversification of the INOVYN Business's product portfolio is also supported by the diversification of revenue generated across its business units.

The following diagram sets forth a summary of the inputs and outputs of the production chain for the INOVYN Business's major product families, namely, general purpose PVC, specialty PVC, chlorine derivatives and chlor-alkalis.



Products and Manufacturing

EDC, VCM and PVC

VCM is the primary raw material used in the manufacture of PVC resins and is produced by the reaction of ethylene and chlorine, which produces EDC that is transformed into VCM by thermal cracking. PVC resin is then formed by the polymerization of VCM. PVC is made as two main product types, each subdivided into a range of grades to meet the requirements of our customers' specific applications. We produce PVC according to two types of polymerization techniques: suspension PVC, or SPVC (also known as "Suspension PVC"), and emulsion PVC, or E-PVC (also known as paste PVC, P-PVC or "Emulsion PVC"). Some special grades produced by the suspension technique can also be used as a substitute for Emulsion PVC resins. We actively review our range of PVC resin grades in cooperation with our customers to reduce the costs of production, to improve customers' yields with our PVC, to maintain high quality standards and, where possible, to cover a wide range of PVC applications. In the case of specialty PVC, we provide highly tailored technical grades to tackle specific customer needs. Our VCM and PVC resin production facilities are located in Belgium, France, Germany, Norway, Spain, Sweden and the U.K.

We produce VCM principally for our own internal use in the production of PVC and we are able to produce substantially all of our required VCM. In addition, we produce EDC at Zandvliet, Belgium. The Zandvliet operation is based on a chlorine cycle: chlorine produced by INOVYN is supplied to BASF for the production of methylene diphenyl diisocyanate ("MDI"); BASF then sends anhydrous gaseous hydrogen chloride, also called HCl, a by-product of MDI production, back to INOVYN for transformation into EDC, which is used in our downstream operations, particularly at our Jemeppe and Rheinberg facilities, for VCM production. EDC is also manufactured at the site at Runcorn, U.K. via toll manufacturing agreement with Vynova, and most is used to feed our VCM asset in Martorell, Spain.

Suspension PVC and Emulsion PV

General purpose PVC includes resins produced for general applications through suspension technology and represents roughly 95% of worldwide volumes as of December 31, 2022. The Suspension PVC production process involves the polymerization of VCM in large-scale batch reactors, in the presence of water, together with catalysts and additives. Once the reaction is essentially complete, unreacted VCM is removed and the polymer is isolated by centrifuging and drying. Individual grades produced are characterized by their melt flow properties and suitability for rigid (unplasticized) or flexible (plasticized) applications. As of December 31, 2022, the INOVYN Business's production capacity of Suspension PVC was approximately 1,845 kilotons. Our Suspension PVC production sites are located in Belgium, France, Norway, Spain, Sweden, Germany and the U.K..

For the year ended December 31, 2022, general purpose Suspension PVC represented approximately 78% of the INOVYN Business's total PVC sales volumes (by tonnage). Suspension PVC is the type of PVC resin used for virtually all calendaring, extrusion, injection molding and blow molding and for the manufacture of films and foils. Typical applications include potable and gravity pipes, window frames, cable insulation, food and pharmaceutical packaging, automotive and domestic appliance components and medical supplies such as tubing and blood bags. We offer an extensive range of these Suspension PVC grades marketed under the trade name of INOVYN™ .

Specialty PVC comprises resins produced via emulsion polymerization (including micro suspension, mini-emulsion, seeded emulsion, latex and nano-emulsion) and also specialty Suspension PVC grades (such as, extender (or filler), copolymer, very-high molecular weight, very-low molecular weight and medical grades). Our Specialty Vinyls business unit is strongly focused on research, innovation, high-technology solutions and key partnerships to generate value for stakeholders. In our Emulsion PVC production process, the polymerization state involves an emulsion of very fine droplets of VCM in water, and the polymerization process takes place to form a stable emulsion, or latex, of polymer in water. After the removal of unreacted VCM, the water is removed by evaporation in spray drying equipment to obtain Emulsion PVC in its final form. Our INOVYN™ Emulsion PVC ranges have been developed to cover all the major application outlets and also the more niche areas of gloves, fine printing, composites, technical textiles and coil coating applications that require more specialized fine grade resins. Our Emulsion PVC manufacturing facilities are located in France, Germany, Norway and Sweden. As of December 31, 2022, our production capacity of Emulsion PVC was approximately 265 kilotons.

For the year ended December 31, 2022, Emulsion PVC represented approximately 13% of the INOVYN Business's total PVC resin sales volumes (by tonnage) and roughly 60% of our specialty PVC capacity, with the remainder represented by specialty Suspension PVC grades. Emulsion PVC is used in a wide range of specialty applications involving coating, molding, dipping and spreading operations, and also extrusion and calendaring. In customers' production processes, Emulsion PVC is generally converted into a usable form by the addition of plasticizers to form a "plastisol", or paste, and mixed with performance enhancers to manufacture flexible plastic products. Typical applications for Emulsion PVC include coated fabrics, conveyor belting, cushion and wear layers of flooring, mastics, wall coverings, and core foams for wind turbines. Individual applications demand specialized grades of Emulsion PVC and, consequently, the development and manufacturing processes are technologically sophisticated and more complex than for Suspension PVC.

Specialty Suspension PVC grades comprises five special product types: extenders (or fillers), copolymers, medical grades and very-low and very-high molecular weight PVC. All of these five types of products are produced through a suspension polymerization process (similar to Suspension PVC) but each one with its own specificity. INOVYN also has specific dryers for this type of production. For the year ended December 31, 2022, Specialty Suspension PVC represented approximately 9% of the INOVYN Business's total PVC resin sales volumes (by tonnage), and approximately 40% of its specialty PVC capacity.

In the case of copolymers, the specificity occurs from the addition of a co-monomer, vinyl-acetate, which reacts together with the VCM in batch reactors in the presence of water, together with initiators and additives. Once the reaction is essentially complete, unreacted vinyl-acetate and VCM are removed and the polymer is isolated by centrifuging and drying. Copolymers are used mainly in specific calendaring applications, such as rigid foils or sleeves for packaging, credit cards, pharmaceutical blister packaging and vinyl records. Our copolymer production facility is located in Jemeppe, Belgium.

In the case of medical grades, the specificity relates to the fact that no antioxidants are added to the recipes during polymerization and any significant changes in the polymerization recipes have to be approved by the customer. Main applications are blood bags and medical tubing. Our medical grades production facilities are located in Jemeppe, Belgium, and in Stenungsund, Sweden.

We also produce very-high and very-low weight PVC resins. The main applications for our very-low molecular weight PVC resins are injection molding of rigid pieces (multi-cavity molds), foams and adhesives. Our low molecular weight Suspension PVC is produced in Jemeppe, Belgium. The main applications for our very-high molecular weight PVC resins are dynamic gaskets and high performance membranes, cables and swimming pool liners. Our high molecular weight Suspension PVC is produced in Stenungsund, Sweden.

BIOVYN™

In October 2019, INOVYN launched its latest generation of PVC under the brand name BIOVYN™ becoming the world's first commercial producer of bio-attributed PVC using a supply chain fully certified by The Roundtable on Sustainable Biomaterials ("RSB"). The RSB is a European Commission-approved voluntary scheme used to demonstrate compliance with the sustainability criteria of the EU's Renewable Energy Directive. BIOVYN™ was initially manufactured at Rheinberg, Germany, but certification was extended to our site in Jemeppe, Belgium in 2020 and to Porsgrunn, Norway and Stenungsund, Sweden in 2021. Since 2022, BIOVYN™ production sites are also certified by

ISCC+. BIOVYN™ is made using bio-attributed ethylene, a renewable feedstock derived from biomass that does not compete with the food chain. BIOVYN™ is certified as delivering a 100% substitution of fossil feedstock in its production system, enabling a greenhouse gas saving of over 90% compared to conventionally produced PVC.

Bio-attribution is used to measure the extent to which fossil fuel-derived ethylene has been substituted by renewable ethylene. The bio-ethylene is attributed to the finished PVC product by means of a certification process approved by the RSB whereby it is tracked to its precise output in the PVC product. The final product carries an attribution according to the displacement of fossil fuel-derived raw materials. This avoids any physical determination in the finished product and negates the need for huge investments in duplicate tanks and pipes to segregate the renewable and fossil fuel-derived feedstocks from one another.

The development of BIOVYN™ forms part of our wider sustainability program, through which we are developing a new generation of PVC grades that meet both the rigorous product quality and performance needs of our customers, whilst moving us closer towards a circular, carbon-neutral economy for PVC. Driven by the increasing global focus on the circular economy, there is growing demand for specialist, renewable PVC that decouples its production from the conventional use of virgin fossil feedstocks. BIOVYN™ meets that demand and demonstrates that we can substitute the use of virgin fossil feedstocks without compromising the unique product qualities such as durability, flexibility and recyclability that make PVC one of the most widely used, sustainable plastics in the world.

BIOVYN™ has been incorporated into our existing extensive portfolio of both general purpose and specialty PVC grades, underpinning our market leading position and demonstrating our focus on both sustainability and innovation. Sales of this resin started in December 2019 through a collaboration with one of our flooring customers, Tarkett but the customer base has since increased to include companies such as Polestar (automobiles), Pappelina (Swedish rug manufacturer) and Jokasafe® (European Vinyl glove manufacturer).

The bio-attributed ethylene is sourced from the INEOS owned cracker at Cologne, Germany and is delivered via the ARG pipeline to our VCM plant at Rheinberg. The quantities of bio-attributed ethylene accounts for a very small part of our overall ethylene consumption. However, this is a major step forward in our journey to sustainability and demonstrates our commitment to working within the emerging bio-economy and developing innovative solutions that address society's needs.

Chlorine, Caustic Soda and Caustic Potash

Chlorine, caustic soda and caustic potash are produced in cellrooms by passing a powerful electric current through a brine solution (salt dissolved in water). The resultant chemical reaction produces chlorine and caustic soda, or chlorine and caustic potash, in fixed ratios (roughly, in weight, 1.1 units of caustic soda to 1 unit of chlorine and 1.5 units of caustic potash to 1 unit of chlorine), along with a small amount of hydrogen that can be used as fuel or for other chemical applications. Chlorine can be sold in bulk, delivered by pipeline to external customers or used, in gaseous or liquefied form to produce chlorine derivatives.

Caustic soda is a widely used industrial chemical, including in pulp and paper, detergents, packaging, agriculture, environmental protection, water treatment, foodstuffs, health, textiles and in the chemical, construction and car industries. Caustic soda comes in liquid and solid forms. Liquid caustic soda is a strong base used as a chemical reagent, a pH-regulator, an ion exchange resin regenerating agent, catalyst and etching and cleaning agent. Solid caustic soda has similar properties but is manufactured by evaporation of water from liquid caustic soda, followed by solidification into micro pearls. Caustic potash is mainly used in the manufacture of other potassium salts for use in soaps and detergents, fertilizers, airport and aircraft de-icing fluids and batteries.

We produce chlorine and liquid caustic soda at our Antwerp/Lillo, Jemeppe, Rafnes, Rheinberg, Rosignano, Runcorn, Stenungsund and Tavaux sites. We also produce solid caustic soda (from liquid caustic soda) at our Tavaux plant in France.

We use modern membrane technology, which is low-maintenance and energy-efficient, at our Antwerp/Lillo, Jemeppe, Rafnes, Rheinberg, Rosignano, Tavaux sites, and at Runcorn where we co-own the cellroom with VYNOVA. We also have a polymer diaphragm plant at Rheinberg. In response to the European Union's BREF Document for the Production of Chlor-Alkali, which required all European mercury-based chlor-alkali production facilities to cease operations by the end of 2017 the INOVYN Business has incurred substantial capital expenditures and remediation costs on cellroom closure and conversion projects. The VCM/PVC complex at the Martorell site is being supplied by EDC imported by deep-sea vessels to Barcelona with subsequent transport to the Martorell site via rail. We have secured third party supply arrangements for EDC, which run to a minimum term of 2041, although we have discretion over the level of offtake from 2022 onwards. Some EDC will also be supplied from the INOVYN Business's other manufacturing locations.

We consume most of the chlorine we produce in our cellrooms internally, either in our vinyl chloride monomer ("**VCM**") production or in the production of products in our Organic Chlorine Derivatives business unit. At some facilities, the chlorine is sold in liquid form to external customers by pipeline, by trucks or by railcars. In the Antwerp area most of our chlorine is supplied to BASF and is used by them to produce MDI. The MDI manufacturing process produces hydrochloric acid as a byproduct, which we use to produce EDC which, in turn, is used to make PVC at Jemeppe and Rheinberg. The chlorine arrangements with BASF effectively share the costs of the chlorine produced, thereby benefiting both BASF and the INOVYN Business.

In the year ended December 31, 2022, the INOVYN Business sold over 93% of our caustic soda liquid and solid production volume externally. We use the remainder of our caustic soda to make sodium hypochlorite for sale to the market, to supply our Brine and Water business, and for use in our VCM production facilities.

All of our caustic potash is manufactured at our membrane facility at Lillo in Belgium which is well situated to serve caustic potash customers in Europe and beyond via the nearby port of Antwerp and benefits competitively from having direct pipeline links to its major customers for the co-produced chlorine. It is also strategically positioned to receive imports of potash, a key production raw material. In the year ended December 31, 2022 the INOVYN Business sold 100% of its caustic potash liquid production volume externally.

Hydrogen

INOVYN and INEOS is in a unique position to lead the transition to a hydrogen-powered economy, with INOVYN and INEOS already producing about 50,000 and 400,000 tons of hydrogen a year, respectively. As Europe's largest operator of electrolysis cellrooms, which is the critical technology necessary to split water into hydrogen and oxygen using renewable energy, INOVYN and INEOS are uniquely positioned to drive developments in renewable hydrogen. In November 2020, INEOS launched a new business as part of the INOVYN business to develop and build green hydrogen capacity across Europe, in support of the drive towards a zero-carbon future. This business will focus on ramping up production of clean hydrogen across Europe, not only for INEOS' own sites, but critically for other industries seeking affordable, low-carbon energy. INEOS' approach will not only play a key role in Europe's Green Deal and the UK's Hydrogen Strategy, but it will help to create an economy that is sustainable, workable, and profitable.

INEOS has already announced plans to invest more than €2 billion into water electrolysis projects to make zero-carbon, green hydrogen across Europe. Within the INOVYN business, the construction of a 20MW green hydrogen electrolyser at Rafnes in Norway, powered by zero-carbon electricity will start in 2023. This project will lead to a minimum reduction of an estimated 22,000 tonnes of CO_2 per year by reducing the carbon footprint of our operations in Norway and serving as a hub to provide hydrogen to the Norwegian transport sector. At Antwerp, INOVYN is part of a power-to-methanol consortium with INOVYN providing the expertise for a 5MW green hydrogen electrolyser plant. In the UK, INOVYN through the HyNet consortium in the North-West of England, is planning to develop the largest hydrogen storage project in the world, capable of storing 1,300 gigawatt hours of hydrogen. In France, INOVYN in the first quarter of 2023 will deploy Europe's first hydrogen-fuelled truck for the transport of PVC from its Tavaux plant to Benvic's PVC compounding plant in Dijon.

Within the wider INEOS group, plans to build a 100MW electrolyser to produce green hydrogen at Cologne in Germany were announced in 2021, with hydrogen from the new unit being used in the production of green ammonia for local industry use. Moreover, over £1 billion is to be invested at Grangemouth, U.K. to switch all its businesses to hydrogen, capturing over one million tonnes of CO_2 each year by 2030.

Epichlorohydrin

We are a key global producer of epichlorohydrin ("**ECH**") supplying a variety of businesses dealing in epoxy resins for paints and coatings, composites, adhesives, electronics, pulp and paper, water treatment and healthcare. Approximately 80% of our ECH production volume (by tonnage) uses propylene as a raw material; the remaining 20% of our ECH is manufactured using natural and renewable glycerin as a raw material. The ratio can be varied depending on the relative price of propylene and glycerin.

In the propylene-based process, allyl chloride is a precursor to epichlorohydrin and is sold to customers in Europe and the U.S. We also sell co-products, such as monochloropropene, dichloropropene and trichloropropane, generated in the propylene-based ECH production process, giving us competitive advantage over those players in the market who do not separate and purify these co-products for sale.

In December 2021, INOVYN launched REODRIN™, becoming the world's first commercial producer of bio-attributed epichlorohydrin from renewable feedstock. Manufactured at Tavaux, REODRIN™ is made using a second-generation, renewable feedstock that eliminates the use of energy crops and palm materials from the supply chain, therefore using 99% less land and water than conventional feedstocks. It is also certified by ISCC+ as enabling a greenhouse gas

saving of almost 70% compared to fossil-based/palm-based epichlorohydrin. Driven by the increasing global focus on a low carbon economy, there is growing demand for a specialist, renewable epichlorohydrin that decouples its production from the use of conventional carbon-intensive feedstocks. REODRIN™ meets that demand and demonstrates we can produce epichlorohydrin with a non-fossil, circular feedstock. REODRIN™ is expected to have numerous value-added applications across a range of industry sectors, including highly specialized end-uses such as composites for wind turbines, wastewater treatment and lightweight coatings for electric vehicles.

Chlorinated Paraffins

We are the largest chlorinated paraffins producer in Europe which is produced by direct chlorination of straight-chain-saturated hydrocarbons in the C_{14}-C_{30} range at our Runcorn facility in the U.K. We produce chlorinated paraffins under the CERECLOR™ brand name for use as a PVC plasticizer, extreme pressure additive for metal working fluids, fire retardant/plasticizer in paints, fire retardant in other compounds, in polyurethane foams, and in a range of rubbers and carbonless copying papers. Please see "*Our Facilities*".

Chlorinated Feedstocks and Solvents

We produce chloromethanes (methylene chloride, chloroform and carbon tetrachloride) by reaction of methane gas with chlorine out of our Tavaux facility in France and our Rosignano facility in Italy, and believe that we are the fourth largest producer in Europe based on production capacity as of December 31, 2022. Methylene chloride is used as an effective extraction medium in the synthesis of pharmaceuticals, as a solvent in low temperature metal cleaning, and is consumed in the production of HFC-32. Chloroform is mainly used as a solvent in pharmaceuticals and as a raw material feedstock in the manufacture of HCFC-22, which in turn is consumed in the production of fluoropolymers such as polytetrafluoroethylene ("PTFE") (marketed under the names Teflon, Hostafluon, Fluon and others), and to a lesser extent fluoroelastomers. Our purified carbon tetrachloride is primarily used as a raw material feedstock for the manufacture of hydrofluorocarbons such as HFC-365mfc as well as increasing consumption for the production of the next generation fluoro-gases, namely hydrofluoroolefins. We are also a leading manufacturer of Perchloroethylene, with the brands PERSTABIL® used as an industrial solvent and for dry cleaning, SOLTENE™ used for metal degreasing; and CATALYST grade used in petrochemical refineries as a chloriding agent, for both isomerization and reforming catalysts.

Chlorine By-Products

We manufacture a range of other chlorinated products which are part of our chlor-alkali business, including mainly:

- *HCl.* We produce hydrochloric acid for use in a wide variety of industrial and chemical applications, including as a manufacturing aid in the pharmaceuticals industry, metallurgy, electronics and the food industry. HCl is mainly produced at our facilities in Tavaux, Rheinberg, Runcorn and Rosignano.

- *Sodium hypochlorite.* We supply sodium hypochlorite, a powerful cleaning agent and disinfectant, to a variety of businesses and utilities companies. We produce sodium hypochlorite mainly at our facilities at Jemeppe, Lillo, Tavaux, Rosignano, Tavazzano, Runcorn and Rafnes.

Brine and Water

Brine is an essential raw material used by the chemical industry. The brine and water division is mainly active in the extraction and purification of brine from salt deposits located on land owned by the INOVYN Business in Cheshire, U.K. Through a process of solution-mining, we have the capacity to extract up to 40,000 m^3 of brine per year from brine fields located near Northwich in Cheshire, but actual demand from downstream consumers is for approximately 20,000 m^3 per year. The brine fields are situated on salt deposits, located approximately 20 kilometers from our Runcorn facility, and salt is extracted by pumping water into boreholes to create the raw brine solution. The brine is pumped to a processing plant for purification and then distributed through our network of pipelines to our customers. The key raw materials used in the production of brine are water, pumped from nearby rivers, and caustic soda and soda ash, which are used to remove calcium and magnesium salts from the brine. Caustic soda is supplied by our membrane cellroom in Runcorn, and soda ash is supplied externally.

In the U.K., a proportion of our brine capacity is supplied to the cellroom in Runcorn, which we co-own with VYNOVA. The remainder is supplied to our salt plant at Runcorn and the TATA Chemicals' soda ash plant located at Northwich.

In Northwich, our brine and water business division has also successfully developed a gas storage business in Cheshire. This includes projects with two large international energy companies, Uniper and Storengy, both of which have been secured under long-term contracts. We benefit from the long-term contracts because we are able to use the new

boreholes that will be drilled by the energy companies to produce new brine solution and salt. We obtained consent for a third large scale gas storage project at the Northwich brinefield in 2017 but has not yet begun full construction. In 2021 INOVYN joined the HyNet consortium to provide a 1.3TWh hydrogen storage facility by converting the original 2017 consented project to support hydrogen storage. HyNet is the North-West of the U.K.'s answer to climate change and net-zero. The HyNet project consists of carbon capture and storage of CO_2 from existing carbon emitters and allows the large scale generation of low carbon hydrogen production from natural gas. The hydrogen will be distributed, first, to industrial/commercial users within the north west region of the U.K. to allow them to decarbonize. Later, dispatchable power generation and residential heating will be added to the network. The INOVYN hydrogen storage facility will provide much needed flexibility and resilience to the hydrogen distribution network.

Salt

Based at Runcorn, the salt business is one of only two U.K. producers of evaporated salt. The plant uses multiple effect evaporation to produce dried and un-dried vacuum salt, granular salt and salt tablets. Applications are wide ranging and include water softening, human and animal food, food preservation and as a base raw material within the chemical industry. The plant is registered for food production, and food grade pure dried vacuum salt is certificated to the BRC Global Standard for Food Safety. Our customer base is diverse ranging from large corporations to small businesses and retail consumers. In the year ended December 31, 2022, approximately 66% of the INOVYN Business's external sales by volume was sold in the U.K. with the remainder being delivered to European export markets, including some for our own internal use. The key raw material used in the production of salt is brine, supplied by the Brine and Water Business, and steam, supplied from the Runcorn TPS Combined Heat and Power Energy from Waste plant, located at Runcorn.

Raw Materials and Energy

The principal raw materials (including feedstock) and input costs for the INOVYN Business are ethylene, propylene, naphtha, glycerin, brine/salt, potassium chloride and electricity. In the year ended December 31, 2022, ethylene, energy (electricity, gas and steam), naphtha, brine/salt, propylene and potassium chloride accounted for 24%, 50%, 5%, 3%, 2% and 3%, respectively, of our INOVYN Business's raw material expenses. We also purchase the intermediates, EDC and VCM, from third party suppliers, the volume of which is dependent on the level of turnaround and plant maintenance activity at our own EDC and VCM assets.

Ethylene

Ethylene is a key building block of the petrochemical industry and is used to produce a large number of higher value-added chemicals including polyethylene and PVC. As one of the largest merchant buyers of ethylene, the INOVYN Business's plants are well positioned to secure ethylene on competitive terms. In addition, the INOVYN Business has a direct 42.5% economic interest in a steam cracker in Feyzin, France. The availability of ethylene from INEOS has increased since 2016 after INEOS's Grangemouth (U.K.) and Rafnes (Norway) crackers started receiving shipments of competitively priced ethane from the U.S., enabling those crackers to run at maximum capacity. We now source in excess of 70% of our ethylene requirements from INEOS.

In Norway and Sweden, the plants are pipeline-connected to crackers that are deemed to be top-quartile producers in Europe, driven by lower feedstock costs, providing us with improved pricing for our ethylene. All of our ethylene requirements at our Norwegian and Swedish plants is provided by the cracker in Rafnes, Norway, owned by INEOS Olefins & Polymers, which is a division of the INEOS Group.

The INOVYN Business's plants in Rheinberg, Jemeppe and Antwerp/Zandvliet are all pipeline-connected to the European ethylene pipeline system ("**ARG System**"), providing us with access to large crackers in Germany, Belgium and the Netherlands and flexibility in our sourcing, and enabling us to access a key spot market. Ethylene for these plants is currently sourced under contracts from three different producers: BASF, INEOS Olefins & Polymers, BP Refining & Petrochemicals which enhances our sourcing flexibility. The contract with INEOS is for the annual supply of 150 kilotons of U.S. sourced ethylene running to the end of 2024, enabling us to more effectively compete with U.S. and Asian PVC producers in export markets by taking advantage of the U.S. shale gas economics.

In France, our ethylene requirements at Tavaux are predominantly supplied by our share of the ethylene cracker production in Feyzin, which is fully integrated with the Total Petrochemicals refinery on site for feedstocks, supplemented by external contracts with LyondellBasell Group. Ethylene is supplied to the Tavaux site by the French pipeline system on which we have rights to move ethylene. We also benefit from ethylene storage rights at Viriat, which enables us to have a higher integrity of supply for Tavaux.

Ethylene for the manufacture of EDC at our Runcorn site via a toll manufacturing agreement with VYNOVA is being sourced by INEOS Olefins & Polymers under a supply agreement running to the end of 2022. A new longer term supply agreement for 2023 onwards is currently being negotiated. In Spain, ethylene is supplied by Repsol via our own pipeline from Tarragona to the site.

In October 2019, the INOVYN Business announced the launch of a new generation of PVC under the brand name BIOVYN™ manufactured from bio-attributed ethylene as a renewable feedstock derived from biomass (wood pulp residue). The biomass from which the ethylene is produced does not compete with the food chain and the ethylene has been certified by The Roundtable on Sustainable Biomaterials (RSB) as delivering 100% substitution of fossil fuel derived ethylene. The bio-attributed ethylene is sourced from the INEOS Olefins & Polymers division owned cracker at Cologne, Germany and is delivered via the ARG pipeline to our Rheinberg and Jemeppe facilities. INEOS Olefins & Polymers manufacture the bio-attributed ethylene from wood pulp residue supplied by UPM Biofuels under a long-term supply agreement.

Naphtha

The main feedstock for most European-based steam crackers is naphtha which is derived from the oil refining process. This is the case for the steam cracker at Feyzin, with the naphtha being sourced at market prices from the refinery on the site, owned by TOTAL Petrochemicals. The close proximity of the refinery contributes to the economic performance of our cracker, with for example, by-products generated during the production of ethylene and propylene being sold locally to TOTAL Petrochemicals, rather than being exported. On occasions where we need to access the naphtha market, we are able to achieve this via our import and storage rights agreements with TOTAL Petrochemicals. These rights allow the INOVYN Business to source naphtha from a refinery at Lavéra, owned by Petroineos which is 50% owned by INEOS, or from other deep-sea sources as we have access rights to the naphtha import terminals in the Lavera pocket.

Propylene

Propylene is also a key building block of the petrochemical industry and is used to produce a large number of higher value-added chemicals, including polypropylene and allyl chloride. Our shareholding in the Feyzin steam cracker in France provides us with sufficient propylene to both meet the requirements of our demand at Tavaux and generate sales by pipeline to third parties. The propylene requirements in Rheinberg are met by two external contracts with Helm and TOTAL, supplemented by internal supplies from our share of the Feyzin cracker. Given our position in Feyzin, we have insight into propylene producer economics, which allows us to better understand the fundamentals of the propylene market. Because we manufacture much of our own propylene, we are also able to conduct propylene 'swaps' with other sellers when it is advantageous to do so.

Glycerin

Technical vegetable-based glycerin is mainly used for the production of ECH at our Tavaux facility, whilst it is also used in smaller quantities at our Rheinberg facility for the production of high purity polyglycerols (diglycerol, polyglycerol-3 and polyglycerol-4). Since the war in Ukraine and the freezing of biodiesel operations, supplies of glycerine have had to be carefully managed and we are currently only purchasing on a spot basis from Musim Mas Group, Cremer Oleo GmbH and Viterra. We are actively looking for new and secure sources of vegetable based glycerin, in order to further diversify our supply options. In 2022 we secured our first supplies of sustainable used cooking oil based grades of glycerin for the manufacture of REODRIN, the world's first commercially available bio-attributed epichlorohydrin.

Salt

Salt is one of the basic raw materials for the production of chlorine and caustic soda. Much of the salt required for our chlorine and caustic soda production comes from internal supply on integrated sites. The ability to source low-cost salt internally provides us with an advantage over our competitors and assists with negotiations with third parties when purchasing the balance of our salt requirements. Part of the salt is delivered in brine form (concentrated salt solution) when suitable for the manufacturing process, which is the case for salt provided to our caustic soda production facilities at Runcorn, Jemeppe, Rheinberg, Tavaux and Rosignano.

Our Rheinberg, Rosignano and Jemeppe facilities are supplied brine as a raw material via pipeline under long-term contracts with the Solvay Group. At Stenungsund and Rafnes we are supplied with salt by Nobian under long-term contracts, whilst at Runcorn we are the owner of the brine which is obtained from salt deposits in Northwich, Cheshire. Our cellroom in Lillo is mainly supplied with salt via barge from our Jemeppe site and we supplement this with additional quantities from the Runcorn salt plant, as well as via a long term supply agreement for rock salt from K+S Kali GmbH. In France, the INOVYN Business entered into a long-term partnership with Storengy in 2017 for the supply of brine to the Tavaux site from the brine fields at Etrez and Attignat. Storengy benefit from the opportunities to store gas, whilst we obtain a low cost source of brine under a long-term agreement.

Potash

Potash is one of the basic raw materials for the production of chlorine and caustic potash. This is purchased externally from two suppliers, namely Canpotex Limited and K+S Kali GmbH via long-term contracts of at least one year in duration.

Electricity

Electricity is a key raw material and utility throughout our production processes and businesses. The production of chlorine, caustic soda and caustic potash by electrolysis requires large amounts of electricity, and the production of VCM and PVC also requires electricity as a utility. In the year ended December 31, 2022, the INOVYN Business purchased approximately 4,900 GWh of electricity.

Across most of our sites we purchase electricity directly from wholesale traded electricity markets. Specific arrangements vary from site to site but generally we have access to commonly traded spot and forward market products and purchase through a combination of these.

Electricity across Europe is highly regulated and subject to a range of environmental and climate policies, for example costs associated with the deployment of renewable electricity generation. As a highly electro-intensive and trade exposed manufacturing sector, the chlor-alkali process is protected to varying extents from the full cost of taxation and environmental policies. For example, in the U.K., the consumption of electricity for electrolysis is fully exempt from the Climate Change Levy. More widely across Europe, a range of policy costs are significantly reduced, typically requiring us to enter into formal agreements obliging us to meet energy improvement targets.

In the case of the EU Emissions Trading System ("**EU ETS**") and the U.K. Emissions Trading Scheme ("**U.K. ETS**"), the cost of permits for electricity generators has increased wholesale electricity prices across Europe in recent years. ETS prices have generally been on a rising trend although electricity price changes do not directly correlate with the rising ETS prices as fuel (gas and coal) prices are also key drivers of electricity prices. Member states provide compensation against these indirect costs to varying extents and we are currently receiving compensation in the U.K., Norway, Belgium, Germany, France and Italy.

Specifically, in the U.K., the government imposes a tax on electricity generators for fossil fuels used to generate electricity via Carbon Price Support and this further increases our electricity costs. Again, compensation is provided against these additional costs.

Further, national governments impose a range of specific energy taxes on electricity and gas. For electricity used in electrolysis 100% exemption from such taxes may apply with electricity being treated as a raw material. For other energy uses, a range of exemptions or degressive schemes may apply which limit the amount of tax paid on energy consumed. Such arrangements may require that we sign up to specific agreements with government bodies, for example with binding commitments to improve energy efficiency of our operations. These taxation and exemption/compensation arrangements are all derived from common European regulation. So, while the precise detail amongst member states may differ, the principles are very similar. Across all our sites we engage in available and applicable schemes in order to minimize our energy costs.

Electricity cannot be stored, and national electricity grid operators must continually perfectly balance supply and demand. This is normally done through matching generation with demand. However, in a number of countries, grids operators offer incentives to large users to vary their consumption in order to help manage supply and demand, through so called Interruptibility or Demand Response arrangements. The relative flexibility of the electrolysis production process is ideal for providing this flexibility to the grid operators while enabling further reduction in our electricity costs. We entered into such arrangements in the U.K., France, Belgium and Italy in 2021.

In the U.K., our electricity costs have benefitted from long term contracts negotiated with Runcorn TPS, our associated undertaking. Runcorn TPS operates a Combined Heat and Power Energy from Waste plant and has entered into contracts to accept and burn fuel derived from waste arising under the Greater Manchester Waste Disposal Authority's 25-year private finance initiative ("**PFI**") contract. A second plant owned exclusively by Viridor has also been constructed on the same site and is sharing some of the infrastructure. Both plants are located on land owned by the INOVYN Business at its Runcorn site, and we are committed to buying all electricity from both plants and steam from the Runcorn TPS plant under long-term agreements. Electricity is bought at below market prices with the INOVYN Business providing appropriate routes to market and ensuring that all environmental and regulatory incentives are maximized for Runcorn TPS and Viridor.

Electricity is supplied to our Norwegian facilities through a fixed price contract (linked to annual inflation) with Statkraft running until 2035. Electricity supplied to our Stenungsund, Lillo, Martorell and Rheinberg facilities is through market-based contracts with local suppliers. In France, approximately 50% of the electricity requirements for the Tavaux

facility are supplied from the Exeltium consortium via an agreement with Solvay, which provides electricity at prices based on nuclear generation costs. Additionally INOVYN exercises its rights under the ARENH scheme to access a further tranche of competitively priced power. The remaining electricity requirements for the site are sourced from the market.

Electricity for the Rosignano facility in Italy is supplied via Solvay Chimica Italia SpA. with roughly 80% of electricity requirements being supplied via a Virtual Interconnector agreement. This agreement provides electricity at a price linked to the German electricity market giving a discount to Italian market prices.

In Jemeppe, Belgium and Newton Aycliffe, U.K., we operate highly efficient CHP plants which produce the majority of our physical electricity requirements. We purchase natural gas to fuel these plants using market-based contracts with local suppliers. On each site, any surplus electricity generated, or top-up required is sold or bought at market prices via local electricity suppliers.

Gas and Steam

Across the business we use quite significant volumes of fuel gas and steam as sources of heat in the various and extensive chemical transformations that we carry out.

In the year ended December 31, 2022, the INOVYN Business purchased approximately 4,200 GWh of fuel gas (including volumes of natural gas purchased at Jemeppe and Newton Aycliffe which is used to make electricity in our own-generation CHP plants). At most of our facilities we purchase fuel gas in the form of natural gas from the market. However, at our Rafnes and Stenungsund facilities, fuel gas is purchased from the Olefins & Polymers division of INEOS and Borealis respectively, as by-products from their gas cracking manufacturing process.

Steam is a further source of heat used in drying, concentrating, distillation and steam cracking processes. In the year ended December 31, 2022, the INOVYN Business purchased approximately 3.5 million tons of steam from third parties, including Runcorn TPS in the U.K. which is a related party associated undertaking in which the INOVYN Business holds a 25% economic interest. In addition, at some of our facilities we generate our own steam using a mixture of imported fuel gas and by-product hydrogen produced from our cellrooms.

Customers

The INOVYN Business has a global and diverse base of approximately 2,900 customers, through which it serves a wide range of end markets in approximately 125 countries. The INOVYN Business focuses on key end markets, such as building and construction, chemicals and industrial applications, energy, environment and paper, packaging and forest products, which, when considered along with sales to distributors, constituted 77% of INOVYN's sales revenue in 2022.

The INOVYN Business does not depend on any customer for a significant portion of its sales volumes. In the year ended December 31, 2022, only one customer represented more than 5% of the INOVYN Business's total sales volume (by tonnage), being BASF at 6% of total sales volume. Our top 25 customers represented 40% of the INOVYN Business's total sales volume (by tonnage). None of our INOVYN business segments is dependent on a single customer for a significant portion of its sales.

Below is a summary of the key end markets.

Building and Construction. In the year ended December 31, 2022, the building and construction sector accounted for approximately 32% of the revenue of the INOVYN Business. The construction industry has been supported by continued urbanization across the world and a need for affordable, durable and sustainable building materials. The INOVYN Business supplies the construction sector primarily through our PVC business, which provides the material of choice for many of the basic products that are fundamental to infrastructure development. Growth rates for this sector are expected to be modest for developed economies, but much higher for emerging economies, such as China, India and the rapidly developing economies in Southeast Asia, where the development of basic infrastructure still requires significant investment.

Chemicals and Industrial Applications. In the year ended December 31, 2022, the chemicals and industrial applications sector accounted for approximately 21% of the revenue of the INOVYN Business. This broad sector encompasses many of the primary manufacturing activities required for producing both durable and non-durable goods. The INOVYN Business serves this sector with a number of key basic materials used by chemical companies and industrial manufacturers for their production processes and products. In particular, these include the chlor-alkali business products: chlorine, caustic soda and caustic potash, the allylics business products: ECH and allyl chloride, and the products of the chloromethanes business. The manufacturing activities of the chemicals and industrial applications sector are distributed across all major regions and demand growth for this sector is generally aligned with economic output growth.

Energy and Environment. In the year ended December 31, 2022, the energy and environment sector accounted for approximately 4% of the revenue of the INOVYN Business. The energy and environment sector includes power and energy generation and transportation from both conventional and renewable sources, extraction and refining of fuels, battery manufacture and water treatment. Continuing global industrialization and urbanization is driving demand growth for energy generation and associated infrastructure along with environmental applications such as water treatment, renewable energy equipment and batteries. Our chlor-alkali business provides basic chemicals such as hypochlorite and caustic soda for water treatment, which is also used in the manufacture of lithium electrode chemicals for batteries, an application that is expected to grow with the increased demand for electric vehicles. Our allylics business also supplies a raw material used in the manufacture of wind turbines and in the production of chemicals for wet strength resins.

Paper, Packaging and Forest Products. In the year ended December 31, 2022, the paper, packaging and forest products sector accounted for approximately 10% of the revenue of the INOVYN Business. This sector is often referred to as the pulp and paper industry, which involves the processing of hard and soft woods to separate out cellulose fibres for the production of paper and cardboard products. The major producing regions for wood pulp are North America, South America and Western Europe and global demand for products of the pulp and paper industry, especially tissue for health and sanitary products and cardboard for packaging, is expected to grow. Our chlor-alkali business serves this sector by supplying caustic soda, the chemical that is used to digest wood in order to make pulp.

Below is an overview of our main customer profile for each of our product categories.

PVC. Our PVC customers produce materials for the building and construction, consumer goods, manufacturing, packaging, automotive and healthcare and pharmaceutical sectors. PVC applications include pipes, window frames, cable insulation, flooring, wall coverings, domestic appliances, automotive parts, food and pharmaceutical packaging, medical supplies, pharmaceutical products, conveyor belting, mastics, coated fabrics and core foams for wind turbines.

Caustic Soda and Caustic Potash. Caustic soda and caustic potash are widely used industrial chemicals with numerous applications, including detergents, pulp and paper, packaging, agriculture, environmental protection, water treatment, foodstuffs, health, textiles as well as applications in the chemical, construction and automotive industries.

Organic Chlorine derivatives (chloromethanes, chlorinated paraffins, perchloroethylene). The key end market sectors for our chlorine derivatives are chemicals and industrial applications, consumer goods, building and construction, metals and mining sectors. Organic chlorine derivative applications include intermediate chemicals for PTFE production, pharmaceuticals, additives for metal working fluids, fire retardant/plasticisers, metal degreasing, PU foams, solvents and dry cleaning.

ECH. Our ECH is used by customers in sectors such as chemicals and industrial, energy and environment, healthcare and pharmaceutical, paper, packaging and forest products. ECH is used to make epoxy resins for protective coatings, adhesives, composites for aircraft and wind turbine blades, along with water treatment chemicals and elastomeric materials for use in the automotive and aerospace industries, for roofing membranes, and in paper mills.

Research, Technology and Engineering

We offer a set of innovative product solutions for the INOVYN Business's customers, with over 50 different grades of PVC and a dedicated research and innovation team.

Overview of R&D sites

R&D Site	Country	Product Focus
Jemeppe	Belgium	headquarters for R&D activities hydrogen, VCM, general purpose PVC, specialty PVC, PVC recycling, Organic Chlorinated Derivatives
Runcorn	United Kingdom	automation, digital technologies
Porsgrunn	Norway	specialty PVC (Nordic region), VCM
Rosignano	Italy	chlorine, caustic soda, caustic potash

Our research, technology and engineering facilities are located in Jemeppe, Belgium; Runcorn, U.K.; Porsgrunn, Norway; and Rosignano, Italy. The headquarters for the research and innovation activity is located in Jemeppe and covers hydrogen, electrolysis, VCM, PVC, PVC recycling, allyl chloride, epichlorohydrin, perchloroethylene and chloromethanes processes. The electrolysis pilot plant is located in Rosignano and is focused on improvements in the electrolysis portion of the chlorine and caustic soda or caustic potash manufacturing processes. The main VCM and PVC pilot plants are located in Jemeppe. At Porsgrunn, we have a satellite facility focusing on the improvement of VCM processes, and on the development of new specialty PVC grades for the Nordic countries. The main focus of the Runcorn team is to provide engineering support for all assets and major investment projects in the Group.

The research, technology and engineering activities of the INOVYN Business are focused on:

- Developing new resins and new applications and producing products that generate higher value on the market (for example, co-polymers, extenders, specialty Emulsion PVC grades and PVC latex formulations) in line with customer and legislative requirements;
- Optimizing the product mix along with the different production lines and improving the quality of our existing grades;
- Improving variable production costs, reliability and productivity of all processes, including, for example:
  - *Electrolysis:* maximizing current density, prevention of brine pollution, optimizing re-membraning and recoating activities, reducing variable costs for brine purification or effluent treatment and the utilization of lower quality sources of salt;
  - *VCM:* studying ways to reduce energy consumption, increasing asset reliability, optimizing catalysts to enhance ethylene yield and avoiding corrosion;
  - *Allyl chloride and epichlorohydrin:* improving the quality of the final products, minimizing corrosion, improving propylene yield and converting intermediate by-products to more sustainable products;
  - *Chloromethanes:* improving the reliability of the plants and the quality of chloroform produced; and
  - *PVC:* developing proprietary PVC stripping technology, initiator synthesis technology and kinetics control technology through appropriate polymerization inhibitors and optimizing PVC batch production and recipes by testing new additives;
- *PVC Recycling*: performing research on the sorting of mixed PVC waste, and on recycling technologies for the resultant PVC-rich waste streams in accordance with environmental regulations. Small-scale lab activities commenced in 2022, which will be scaled-up in the forthcoming years to µ-pilot and pilot plant level. The ultimate aim will be the construction by 2030 of an industrial-scale unit capable of receiving PVC waste for a variety of sources across Europe;

- *Hydrogen*: assessing and selecting the various water electrolysis hydrogen technologies available on the market, and realizing full process design including the required high voltage connection and the purification/compression of the hydrogen and oxygen co-product. In parallel, we aim to make full use of our by-product hydrogen from the brine electrolysis process; and

- *Carbon neutrality*: to reach our commitment to reduce carbon emissions by 33% by 2030 (compared to 2019), and be net zero by 2050, we are actively engaged in the development of sustainability roadmaps for all of our sites. The roadmaps set out how we aim to utilize electrification, fuel switching including hydrogen, carbon capture and efficiency improvements to achieve our reductions, as well as defining the timeframe.

To assist in these projects, we have laboratory-scale production facilities that simulate the electrolysis, VCM and PVC cycles from chlorine production to the final processing of PVC resins and its recycling. Our laboratories contain processing equipment and product analysis facilities to provide information on the composition, properties and performance of PVC products. We have established best practices groups for our main products across our businesses, allowing internal experts to compare their practices and generate ideas for improving safety, quality, capacity and reducing production costs. These resources also actively support our commercial activities in product sales.

In addition to these research activities, the INOVYN Business' Research, Technology and Engineering team is heavily involved in major capital improvement projects. The INOVYN Business's engineering experts are involved in capital improvements from basic design to commissioning and work closely with the research team to ensure the successful transfer of technology to the plants. One of the INOVYN Business's central engineering integrity groups is based in Runcorn, and they are available to be dispatched to all of the INOVYN Business's sites and production facilities. Examples of recent and current capital investment projects include the conversion from mercury to membrane electrolysis at Stenungsund, Sweden (completed January 2019), the expansion of electrolysis and VCM capacity at Rafnes, Norway by 35 and 70 kilotons respectively (completed in first quarter of 2020), and the 200 kilotons expansion of general purpose PVC capacity at Jemeppe, Belgium (completed early 2022). Moreover, as part of our carbon neutrality roadmap, work on the conversion of a steam-based salt plant in Tavaux, France to a more energy efficient electrical-based salt plant (mechanical vapor recompression process) commenced in 2021 and is expected to be completed in 2024.

In recent years, the INOVYN Business has also made progress on its specialty PVC growth plan strategy with capacity increases realized at Jemeppe, Tavaux, Porsgrunn and Stenungsund in 2019 and 2020, mainly via de-bottlenecking projects. We have further ambitions to increase our capacity of specialty PVC grades by 220 kilotons across our Rheinberg, Porsgrunn, Jemeppe, Stenungsund and Tavaux facilities by 2027. All of these expansions require simultaneous development of new grades by our scientists driven by evolving market demand, particularly for sustainable PVC in high-end applications across the automotive, energy and building and construction sectors.

Intellectual Property

The INOVYN Business has developed and maintains a portfolio of more than 100 registered patents and more than 250 trademarks in a number of territories. We maintain our trade secrets and proprietary information through careful selection of our partners and the locations of our research facilities, through non-competition undertakings with our employees and contractors and through confidentiality agreements with our contractors, developers and customers.

We are not aware of any threatened, proposed or actual proceedings that have been or will be brought against the INOVYN Business for infringement of third-party intellectual property rights or any infringement of our intellectual property rights by third parties that, if successfully prosecuted, would have a material adverse effect upon our business.

Competition

Although the global PVC market is fragmented, the European market is relatively consolidated. The INOVYN Business competes with all of the major European PVC producers, some of which are subsidiaries or divisions of large chemical companies.

According to Dow Jones Chemical Market Analytics, we are the largest producer of Suspension PVC in Europe, based on our capacity as of December 31, 2022 and our main competitors are Kem One Holdings SAS, VYNOVA and Shin-Etsu PVC B.V.. According to Dow Jones Chemical Market Analytics, we are the largest producer of Emulsion PVC in Europe, based on our capacity as of December 31, 2022 and our main competitors are Westlake Chemical Corp – (Vinnolit)., Orbia Advance Corp. – (Vestolit) and Kem One Holdings SAS.

In ECH production and sales, we compete with all three of the other major European ECH producers, including Blue Cube (Olin), Westlake (former Hexion Epoxy business) and Spolchemie. According to Dow Jones Chemical Market Analytics, based on our capacity at December 31, 2022 we are the second largest ECH producer in Europe, but number one in terms of merchant market sales since our competitors consume most of their production.

Our chlor-alkali business unit competes with all the major European caustic soda and caustic potash producers, some of which are subsidiaries or divisions of large chemical companies. The top six producers in the West European caustic soda market account for more than two-thirds of the market's capacity, but the rest of the market is fragmented. According to Dow Jones Chemical Market Analytics, we are the largest producer of caustic soda in the European market, based on our capacity as of December 31, 2022, and we believe our five closest competitors are Dow Inc, Nobian, Covestro A.G., Kem One Holdings SAS and VYNOVA.

In chloromethanes production and sales, we mainly compete with other European producers, including Blue Cube (Olin), Kem One Holdings SAS and Nobian. In chlorinated paraffins we compete with other European suppliers such as Caffaro Industrie in Italy and Leuna-Tenside in Germany. Blue Cube (Olin) recently announced the closure of their European methylene chloride and chloroform production units by the third quarter of 2023.

Sales, Marketing and Distribution

Sales of all of our INOVYN products are managed by our own dedicated sales team by business area. Our core INOVYN sales team is located throughout continental Europe, the Nordic countries and the U.K., and we have a small sales operation in the U.S. Our INOVYN customer service function is organized around two hubs, located in the U.K. and Belgium. Most of the European sales of our key INOVYN products are made directly with key end-users in a wide range of industries, but we also operate with a network of agents to sell into our key export markets. The majority of our INOVYN European sales arrangements are based on structured sales contracts with a term of one year or less.

We typically distribute our INOVYN products by sea and overland by rail or truck. Most of our INOVYN customers are geographically close to our production facilities, allowing us to typically deliver our products within two to three days of an order being placed. If we are responsible for the delivery, the prices of all of our products include applicable delivery and transportation charges. We manage most of our delivery and transportation logistics internally.

PVC Resins

According to Dow Jones Chemical Market Analytics, we are the largest supplier of PVC resins in Europe, and we market a significant range of grades for a wide range of applications. The wide geographical Northwest European spread of our PVC resin plants has enabled us to respond rapidly and flexibly to individual customer requirements in each of our principal markets. Key account managers specifically manage our sales to pan-European accounts where we have a strong position. We have focused our marketing initiatives on those customers who have a strong position in the higher growth sectors of the market.

Our main market for Suspension PVC sales is Europe, especially the countries in the European Union, and we are increasingly targeting Central and Eastern Europe, particularly Poland. Our current key markets of the Nordic countries, Germany, France, Spain, the Benelux countries and the U.K. already benefit from manufacturing facilities that are in close proximity to customers, which reduces our distribution costs and delivery lead times to customers in these countries. Technical service is an important function in supporting resin sales. We have teams of technical service managers based in the U.K., Sweden, Belgium, France, Spain and Germany that work in conjunction with sales personnel and our key customers to promote resin development. Suspension PVC is also sold globally on export markets through a network of distributors and agents covering key global markets, such as Turkey, Middle East, India, South East Asia, North East Asia and South America.

Our target markets for specialty PVC are global. Our teams are based in Europe and work with a robust global network of distributors and agents, allowing us to cover our core and export markets in Continental Europe, Nordic countries, U.K., CIS countries, Turkey, North America, South America, Africa and Asia/Pacific countries. Sales quantities are, in general, managed to meet maximum production output and product mix optimization in order to extract the highest added value from the portfolio. We are focused on protecting our stable high margins, on increasing sales to selected customers and products, on creating value through innovation and on growing sales of high-value new products.

Caustic Soda

Our most important caustic soda markets are the U.K., the Nordic countries and mainland Europe (in particular, France, Germany, Benelux and Italy). We are well positioned in Norway and Sweden to distribute caustic soda to the pulp and paper industry in the Nordic countries, which accounted for approximately 28% of the INOVYN Business's caustic soda sales volumes in the year ended December 31, 2022. We have built a strong logistics platform to be able to supply the key pulp and paper producers who rely on bulk shipments of caustic soda.

Caustic Potash

Our most important caustic potash markets are Belgium, Germany, Denmark, France, Sweden, Netherlands and the U.K., which together accounted for 94% of the INOVYN Business's sales volumes in the year ended December 31, 2022.

Chlorine and Chlorine Derivatives

The U.K. and the Benelux countries are core markets for our sales of bulk liquid chlorine and chlorine derivatives. We service a wide range of important industries: water and power companies, food companies, refineries, silica producers and other industrial chemical sectors. Our U.K. and European sales teams manage direct sales to key customers and also manage sales to different sectors using a network of chemical distributors.

We are one of the leading players in the ECH European merchant market. An important part of our ECH in Europe is sold to epoxy resin manufacturers, but in order to reduce exposure to a single market, we also diversify into water treatment, pulp and paper applications.

Chloromethanes markets are largely regional, with the majority of our methylene chloride and chloroform being sold in Europe. Methylene chloride is a traded product, typically sold on a spot basis directly to customers or via distributors, whilst chloroform is mainly sold via long-term contracts. Our chloroform is a vital precursor in the manufacture of PTFE polymers in Europe and we have major long term chloroform supply contracts with Solvay Specialty Polymers Italy SpA which typically accounts for more than 80% of our annual sales volume. The CERECLOR™ brand of chlorinated paraffins has a wide range of applications, and we sell globally to the PVC, foam, paints, metal working fluids and sealants and adhesive sectors. Demand for chlorinated paraffins has fallen in recent years due to environmental concerns with medium chain chlorinated paraffins being added to the candidate list of Substances of Very High Concern ("**SVHC**") under the REACH Regulation in July 2021. The European Chemicals Agency launched a consultation in September 2022 on restricting the use of medium-chain chlorinated paraffins under REACH Annex XVII. We expect demand for chlorinated paraffins to decline further in the forthcoming years but the time horizon for any formal ban or restriction has been pushed back. Our INOVYN export and sales teams, based in the U.K., Europe, the U.S. and Asia manage our sales of chloromethanes and chlorinated paraffins through a global network of distributors and agents.

The Aromatics Business

The Aromatics Business primarily produces PTA and in Europe and North America it also produces PX as feedstock for PTA together with smaller volumes of benzene and metaxylene (U.S. only) as by-products. PTA goes into a variety of products including, among others, polyester fibres, PET resins, and polyester film, which in turn are used in a variety of end markets such as textiles, upholstery, household items, food packaging, flexible films and industrial products. As of December 31, 2022, the Aromatics Business had 5,985 kilotons of PTA production capacity and 1,595 kilotons of PX production capacity, with total production capacity of 7,801 kilotons. The Aromatics Business is the largest producer of PTA in the U.S. and Europe and benefits from innovative PTA technology, which allows it to maintain an advantageous cost basis and offer competitively priced products to its customers, further strengthening its market position. According to Wood Mackenzie and internal estimates, in 2020 the Aromatics Business was the largest producer of PTA in the U.S. and Europe, with an estimated share of production capacity of 45% and 43% respectively, the largest producer of PX in the U.S., with an estimated share of U.S. production capacity of 28% and the second largest producer of PX in Europe, with an estimated share of European production capacity of 28%.

The Aromatics Business operates material regional businesses in the U.S., Europe and Asia, near the key global aromatics demand centers with advantaged logistics platforms to access feedstocks and serve customers. These regional businesses include five sites operated directly by the Aromatics Business, each of which is in the first quartile for cost competitiveness in its region. All of the facilities deploy the Aromatics Business's proprietary PTA technology. The Zhuhai facility in China benefits from the Aromatics Business's latest technology on its Z3 asset that delivers significant variable cost savings on older technologies, lower capital cost and improved environmental performance. The plants at Cooper River, U.S. and Geel, Belgium were retrofitted with an earlier version of the technology in 2016/2017 and the plant in Merak in Indonesia is underwent a retrofit in the first quarter of 2021.

The following table presents the Aromatics Business's historical Revenue and EBITDA before exceptional items.

	For the year ended December 31,	
	2022	2021
	(in €million)	
Revenue	5,115.2	3,683.2
EBITDA before exceptional items	284.4	262.4

The Aromatics Business also includes a 61% interest in the CAPCO joint venture in Taiwan. The Aromatics Business has board appointment rights to the CAPCO joint venture.

The Aromatics Business has approximately 150 customers who are typically large B2B customers operating under annual term contracts with rateable demand offtake. Most customers are unique to the regions with limited cross regional cutover.

The Aromatics Business currently operates a total of six sites in five countries (two in the Americas, one in Europe and three in Asia), including sites operated by the Aromatics Business and sites operated by a joint venture in which the Aromatics Business holds an ownership interest.

We believe that the Aromatics Business operates the most efficient assets in every region in which it operates, with leading technology providing cost advantages over competitors.

The Aromatics Business benefits from the cost advantages of operating large-scale, integrated facilities strategically located near major transportation routes and customer locations, including the largest and most efficient integrated PX/PTA/PET production site in Europe at Geel, Belgium (30 miles east of Antwerp), with canal, rail and road access on a shared site with INEOS's polypropylene facility and JBF's PET facility, the largest PX production site in North America in Texas City, U.S., which is integrated with a Marathon Oil refinery for feedstocks and other utilities on a shared site with INEOS's Styrolution facility, and the largest PTA facility in North America in South Carolina with sea, rail and road access.

The Aromatics Business has made significant investments in their facilities in the past five years, with investments in maintenance and growth projects. In particular with emphasis on PTA technology retrofit projects at Geel (2015/2016), Cooper River (2017), Zhuhai (Z2) (2019) and Merak (completed 2021), which are focused on driving cost efficiency, and reducing carbon footprint and resulted in modest de-bottlenecks at Merak and Cooper River. We believe these investments allow the Aromatics Business to operate at lower cost and higher utilization rates than most of their competitors, and help them to maintain positive margins and cash flows even during industry downturns or periods of decreased customer demand.

Geographical overview

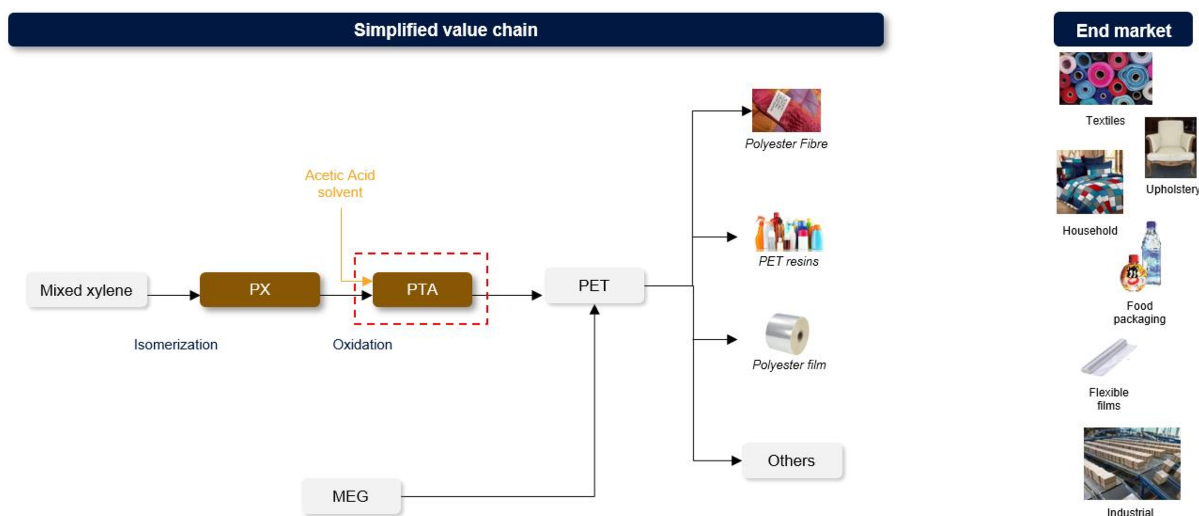
The Aromatics Business is organized around three regional businesses in Europe, the North America and Asia.

Asia represents the largest region in terms of volumes of sales and production capacity for the Aromatics Business, providing advantaged access to the largest demand market in the world in China and across the region. In Asia, the Aromatics Business primarily produces PTA and purchases the PX feedstock in the local market. The Aromatics business in North America and Europe are similar sized based on PTA production capacity and sales volumes. The Aromatics Business in North America produces both PX (much of which is used internally in PTA production) and PTA and MX sold to third parties and serves North America, which is considered to be one of the regions of the world with the highest profit margins and the rest of the Americas. The Aromatics Business serves Europe from production facilities located in Belgium, producing PX (all of which is used internally in PTA production) and PTA and primarily serves customers in Europe and Turkey.

Product overview

The Aromatics Business primarily sells PTA products. In addition, the Aromatics business also produces Paraxylene (much of which is used internally in PTA production) and Metaxylene.

The following diagram sets forth a summary of the inputs and outputs of the production chain for the Aromatics Business's major product families.



Products and Manufacturing

Purified Terephthalic Acid (PTA)

Terephthalic Acid (TA) is produced by the catalytic air oxidation of paraxylene in a continuous process. The reaction products are continuously discharged from the reactor as a hot slurry of TA in acetic acid. The slurry is cooled by flashing in a series of crystallizers and the crude TA is then separated from the acetic acid through a solvent exchange filter apparatus. The crude TA solid is then re-slurried in water, heated to a temperature where the TA is completely dissolved, and then passed through a heterogenous hydrogenation catalyst to remove impurities that would result in undesirable color in the polyester. Once again, the slurry is cooled by flashing in a series of crystallizers and the Purified Terephthalic Acid (PTA) is then separated from the water through a pressure filter apparatus and rotary steam tube dryer to produce the dry white powder that meets required specifications. All vents from the process pass through process equipment to recover valued components (*e.g.* un-reacted p-xylene and acetic acid) and are then catalytically oxidized and scrubbed to meet applicable environmental limits. Modern iterations of the process have been highly optimized for low variable operating cost through reaction condition optimization, intensive recovery of the heat of reaction, and heat integration. In addition, the capital cost of a new unit has been reduced through process simplification and the implementation of economies of scale.

Raw Materials and Energy

The majority of the Aromatics raw materials are supplied under short, medium and long-term contracts from leading industry participants at market prices. The principal raw materials (including feedstock) and input costs for the Aromatics Businesses are mixed xylene, paraxylene and acetic acid.

Mixed xylene

Mixed xylene is primarily a mixture of three different xylene monomers (metaxylene, orthoxylene and paraxylene) and ethylbenzene and is mostly used in the production of PX. Smaller volumes are also used in the solvents industry and in gasoline blending. It is produced in refineries by extraction from reformate which is a gasoline blend component. The Aromatics Business purchases mixed xylene feedstocks in Europe on medium term contracts with a duration of five years from Total (Antwerp) ending in Q1 2024 and Shell (Germany) ending in Q4 2023. A combination of spot purchases and a renegotiation of some or all these contracts between the parties during the course of 2023 will provide continuity of raw material supply for Geel into the future. In addition to these two contract with Total and Shell, thee is a 10 year contract with BP Gelsenkirchen (Germany). The favorable terms of this bp 10-year contract are

expected to result in approximately $5.5 million of annual run-rate EBITDA improvements, based on the difference between the average historical price under the contract and the average historical spot price and assuming we purchase the full annual supply of mixed xylene available thereunder. The Aromatics Business's mixed xylene purchases in the U.S. are made under a three year contract with Marathon Petroleum Corporation from the co-located Galveston Bay Refinery. Mixed xylene prices are primarily linked to crude oil with secondary linkage to the regional / global supply demand dynamics of gasoline.

Paraxylene (PX)

Paraxylene (PX) is the main raw material for PTA and is produced from petroleum reformate, the product of a catalytic reforming unit present in most petroleum refineries. Reformate contains four xylene isomers: PX, meta-xylene, ortho-xylene, and ethylbenzene. The basic steps in a paraxylene unit involve converting the other xylene isomers and separating high purity PX. The paraxylene unit consists of four sections: Fractionation, Crystallization, Isomerization and Refrigeration. The PX production process creates a raffinate stream from which meta-xylene can then be produced using UOP Honeywell MX Sorbex™ technology, an innovative adsorptive separation method for highly efficient and selective recovery of high purity chemicals that cannot be separated by conventional fractionation. The continuous Sorbex process simulates a moving bed of adsorbent with continuous counter-current flow of a liquid feed over a solid bed of adsorbent.

In Europe, the Aromatics Business operates a PX unit at the Geel site to supply the PTA units and purchases PX on both a contract and spot basis to meet the demand requirements of the site. In North America, the site at Texas City, U.S. may produce more PX than is required at the Cooper River PTA facility. As a result, the commercial strategy around purchasing / selling PX changes each year depending on operating rates and market conditions and there are no medium / long term PX contracts. PX feedstock for all the Asian assets is managed as a portfolio of major term contracts including with Exxon, China National Offshore Oil Corporation, Petrochinaand IKC. These contracts are typically one to two years. PX prices are primarily linked to crude oil with secondary linkage to the regional / global supply demand dynamics of PX.

Acetic Acid

Acetic acid used in our Aromatics Business's PTA assets are purchased from our respective regional Acetyls businesses on an arm's length market basis or from other acetic acid producers

Customers

In Europe, the Aromatics Business targets local sales in Europe and Turkey. Approximately 20-25 contract customers encompass over 90% of the total customer counterparties in Europe, with the top 14 of such customers accounting for over 80% of total PTA sales revenue. This includes JBF, which has a co-located PET plant (Europe's largest) on the Aromatics Business's Geel site and a 330 kilotons PTA offtake agreement through 2025. The majority of remaining sales are made to customers via annual contracts withpricing that is based on monthly or quarterly negotiated spreads over European PX prices. Approximately 25% of sales in Europe go to PTA customers operating in less commoditized price sensitive sectors, where margins are higher and more stable. In North America, the Aromatics Business targets local sales in the Americas and has approximately 20-25 contract customers in North America, with the top three customers accounting for approximately 80% of total PTA sales revenue in North America. Customer contracts are priced based on the North America PTA contract price formula with each customer having individually negotiated discounts off this formula price. In Asia, the Aromatics Business has approximately 25 contract customers in China, 11 contract customers in Indonesia and 10 contract customers in India, Pakistan and the Middle East. In Asia, PTA is priced off the China PTA marker, with a floor protecting downside in Indonesia. Nan Ya, located in South Carolina, nearby Cooper River PTA plant and CCRC, located close to Zhuhai PTA operations, are the Aromatics Business's largest global customers of PTA, each with approximately 500 kilotons in sales annually.

Research, Product Development and Engineering

The Aromatics Businesses' global asset footprint is complemented by a research and development center located in the U.S. R&D spending is primarily focused on improving cost, reducing carbon footprint and raising capital efficiency of the Aromatics operations as well as supporting license agreements. The Aromatics research and development efforts have resulted in technological advances that offer the business various competitive advantages. For example, the Aromatics Business's PTA technology platform used in the newer Zhuhai plant has resulted in $60-120 million in capital expenditure savings compared to conventional technology used for a 1.25 MT PTA unit and reduced equipment count by 30% from the previous generation of technology. These technological advancements have also lowered variable costs by up to $60 per MT and have reduced GHG emissions by 65%, water discharge by 75% and solid waste disposal by 95%.

Intellectual Property

The Aromatics Business owns intellectual property associated with their manufacturing, with an extensive range of patents and patent applications, covering processes, products and applications for the production of PTA and PX. The Aromatics Business also own approximately 8 trademark registrations globally. These cover a large number of territories to support their global sales and to ensure broad freedom to operate. In addition, the Aromatics Business maintains trade secrets and proprietary information through customary non-competition undertakings with their employees and contractors and through confidentiality agreements with their contractors, developers and customers.

We are not aware of any threatened, proposed or actual proceedings that have been or will be brought against the Aromatics Business for infringement of third-party rights or any infringement of their rights by third parties that if successfully prosecuted would have a material and adverse effect upon their business.

Competition

The Aromatics Business is the largest merchant producer of PTA in the U.S. and Europe according to Wood Mackenzie and management estimates. The main PTA competitors in North America are Indorama, Eastman Chemicals and DAK Americas, with increasing competition from imports from South Korea. All the other domestic PTA producers in North America are downstream integrated into PET leaving the Aromatics Business as the only pure play merchant PTA producer.

Indorama also competes in Europe together with PKN Orlen, but the largest competitive pressure comes from imports from South Korea (Hanwha and Taekwang) due to the free trade agreement between the EU / Turkey and South Korea. Most other countries with major PTA capacity, e.g. China, have duties into Europe and North America which make sales uncompetitive.

In China, the key competitors are two global PTA leaders, Yisheng and Hengli, with a further nine players with production capacities over 1 MT per annum.

Sales, Marketing and Distribution

The Aromatics Business is characterized by a relatively small number of large volume B2B customers. Each of the regional businesses has a dedicated commercial team focused on delivering the customer offer and maximizing margin contribution.

Each regional commercial team consists of:

- A sales team consisting of experienced account managers who own the direct relationship with the customer. Typically, each region has between two to five account managers.

- A business team consisting of production planners, customer service reps, logistics coordinators and business analysts who provide performance insights and market intelligence to the commercial team.

- A feedstocks team focused on securing advantaged feedstocks to the business whilst ensuring high reliability of supply.

- A logistics contracts team focused on creating a robust set of third party providers focused on driving a highly efficient logistics network fully aligned with the customer offer. Across the global business, products are sold via canal, road, rail and sea containers or a combination thereof.

The Acetyls Business

INEOS Acetyls produces acetic acid and a range of derivatives including acetic anhydride, ethyl acetate and vinyl acetate monomer. The Acetyls business also produces methanol, a key raw material. Acetic acid and its derivatives are used in a wide variety of end market applications, including building and construction materials, paints and coatings, automotive glass, polyester fibre, PET bottles, surface coatings, inks and solvents, cigarette filters, washing powders, wood acetylation, de-icers, bleaching agents, pharmaceuticals, and herbicides and pesticides. It is the second largest global producer of acetic acid, with an estimated share of global production capacity of 13% and the largest European producer of acetic anhydride with an estimated share of European production capacity of 49%.

The following table presents the Acetyls Business's historical Revenue and EBITDA before exceptional items.

	For the year ended December 31,	
	2022	2021
	(in €million)	
Revenue	1,369.6	1219.0
EBITDA before exceptional items	363.4	622.0

The Acetyls business operates from eight sites in seven countries (two in the Americas, one in Europe and five in Asia), that are comprised of one site operated directly by the Acetyls Business in the United Kingdom and five sites operated as joint ventures in Asia, a joint venture in Trinidad and Tobago, and a profit sharing agreement with Eastman Chemicals in the US. The Acetyls business had a production capacity of 3,800 kilotons (including 2,620 kilotons of acetic acid capacity, 165 kilotons of acetic anhydride capacity, 245 kilotons of VAM, and 690 kilotons of methanol capacity) at December 31, 2022.

The Acetyls business's joint ventures in Asia are organized as standalone legal entities with their own boards of directors, where the Acetyls business has board appointment rights to each joint venture. The Acetyls Business is also responsible for technology and catalyst support to the joint ventures and is the sole supplier of catalyst to the joint ventures. Each joint venture markets its own production in-country and the Acetyls Business has exclusive off-take rights for all exports. The Acetyls business also benefits from a profit-sharing agreement with Eastman Chemicals at Eastman's Texas City site and operates a purchase for resale contract with Eastman for acetic acid, marketing surplus acetic acid supplied from the Eastman Kingsport site, both located in the US.

The Acetyls business benefits from integration through the joint venture with Methanex in Trinidad and Tobago for the supply of methanol to the Acetyls business's acetic acid production plants. In addition, in Asia, the Acetyls business partners, through its joint ventures, with leading producers in the region benefiting from site integration and advantageous feedstock supply. The Acetyls business also benefits from downstream integration with the INEOS Aromatics Business for PTA and with the wider INEOS Group in the production ethyl acetate and butyl acetate.

The Acetyls business has made investments in its facilities in 2020 and 2021 which includes investments in the Acetyls business' Korean joint venture plant at Ulsan in a de-bottlenecking project and a new VAM plant, and is investing to convert its feedstock from low sulphur fuel oil to natural gas that will improve the economic position of the joint venture and provide an increase in capacity from 2024. In our Chongqing joint venture, the business invested in a 70 kiloton debottleneck which was successfully commissioned in 2022.

Geographical overview

The Acetyls business is focused around three regional business organisations in Europe, North America and Asia.

Asia represents the largest region in terms of volumes of sales and production capacity for the Acetyls business, providing advantaged access to the largest demand market in the world in China and across the region, through its joint ventures.

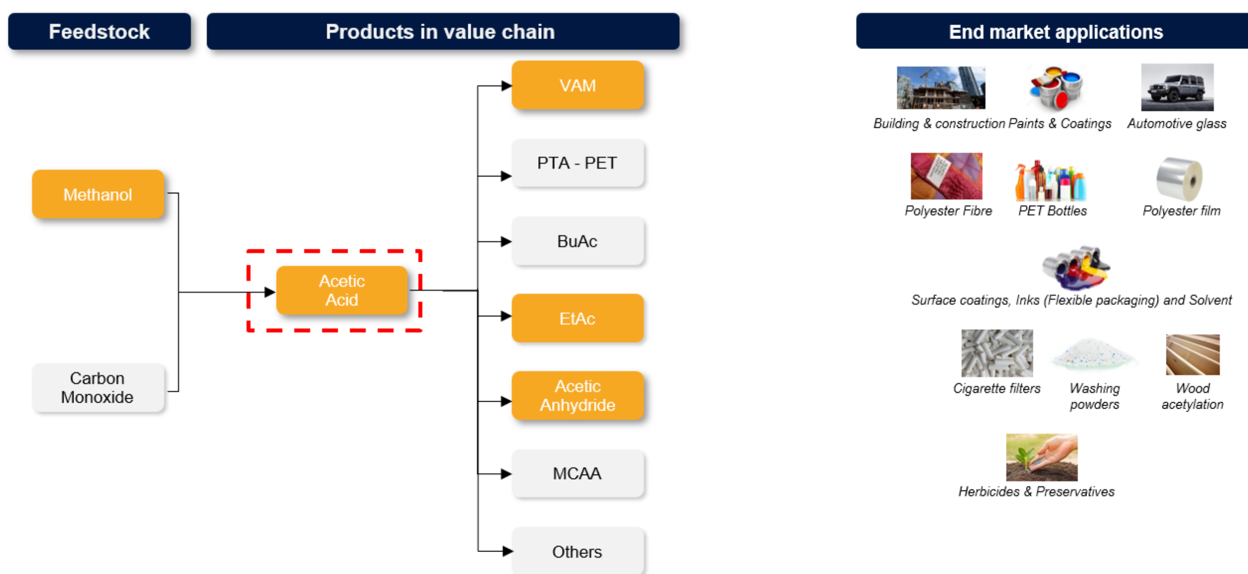
North America is the second largest region by volume for sales and is a marketing business built around an arrangement with Eastman Chemicals pursuant to which the Acetyls business markets all of the Eastman Chemicals acetic acid production from the Eastman Texas City site and also surplus acetic acid from Eastman's Kingsport site to customers in the US, North and South America and Europe. Under this arrangement, the Acetyls business receives 63% of the related profits.

Europe is the smallest region for the Acetyls Business in terms of volumes of sales, where the Business serves Europe from production facilities located in the U.K., producing both acetic acid and acetic anhydride and primarily serves customers in Europe.

Product overview

The Business primarily sells acetic acid. It also sells acetic anhydride in Europe and produces methanol in Trinidad and Tobago through a joint venture.

The following diagram sets forth a summary of the inputs and outputs of the production chain for the Acetyls Business's major product families



Products and Manufacturing

Acetic Acid

Acetic acid is manufactured using the Acetyls business' proprietary Cativa process through the carbonylation of methanol with carbon monoxide. The carbon monoxide feedstock is derived from synthesis gas (also known as syngas – a mixture of carbon monoxide and hydrogen produced from either natural gas or coal). Carbon monoxide and methanol are mixed at elevated temperatures and pressures, and in the presence of an iridium catalyst produce acetic acid. The acid from the reaction is purified, with the wastes recycled to the main reaction and the purified acetic acid cooled and sent to storage. The various by-products are either recycled or incinerated.

Acetic Anhydride

The Acetyls business' proprietary technology also allows the simultaneous production of both acetic acid and acetic anhydride. The nature of the chemistry means that the feedstocks are the same (methanol and carbon monoxide) as for acetic acid, as the required acetic acid can be produced by the reaction and recycled. The crude mixture of products is purified, and the acetic acid separated then either recycled or purified for sale, while the acetic anhydride is purified for sale.

Methanol

Methanol is manufactured by reacting pressurized synthesis gas in the presence of a catalyst. The required synthesis gas is produced by steam reforming natural gas or the gasification of coal, which is then compressed and sent to the methanol reactor where in the presence of the catalyst, raw methanol is made. The last stage of the methanol production process is distillation, where the liquid raw methanol mixture is heated to separate the components to obtain pure methanol.

Raw Materials and Energy

The Acetyls business' raw materials are supplied under a mixture of short and medium contracts from leading industry participants at market prices.

The principal raw materials (including feedstock) and input costs for the Acetyls business are methanol and carbon monoxide.

Methanol

Methanol is a key raw material for the production of acetic acid. The Acetyls business's European operations and Eastman Chemicals' Texas City operations currently source methanol via a short-term arrangement as part of the transition to INEOS.

Carbon Monoxide

Carbon monoxide is a key raw material in the production of acetic acid and is produced either by the reforming of hydrocarbons with steam, or the partial oxidation of hydrocarbons with oxygen.

Across the Acetyls business' portfolio of assets, both technologies are used with differing feedstocks and different participation models as follows:

Asset	**Technology**	**Feedstock**	**Participation (Make vs buy CO)**
Hull (U.K.)	Reformer and POx	Natural Gas	Make
Texas City (U.S.)	POx	Natural Gas	Buy
Ulsan (South Korea)	POx	Low Sulphur Fuel Oil	Make
Mai Lao (Taiwan)	POx	Naphtha	Make
Chongqing (China)	Reformer	Natural Gas	Make
Nanjing (China)	Reformer	Natural Gas	Buy
Kerteh (Malaysia)	Reformer	Natural Gas	Buy

The Korean joint venture is investing in a project to convert its feedstock to natural gas that is expected to improve the feedstock cost position from 2024.

Customers

In Europe, the Acetyls business has three co-located customers at the Hull site (INEOS Europe and Mitsubishi for acetic acid and in 2022, Tricoya, for acetic anhydride, with the plant currently under construction). In Europe, six sectors make up approximately 90% of acetic acid demand, with each sector typically led by two or three major companies. These main sectors are ethyl acetate (INEOS), VAM (Celanese and Wacker), PTA (INEOS, Indorama, PKN), butyl acetate (INEOS, BASF, Oxea), MCA (CABB, Nouryon, PCC), and acetic anhydride (INEOS, Cerida and Lonza). The Acetyls business has approximately 100 European acetic acid customers, with the top 16 customers accounting for approximately 80% of the total European acetic acid sales revenue.

In the US, three sectors (VAM, esters and PTA) account for more than 75% of acetic acid demand, with peracetic acid, a strongly growing fourth sector. Demand in the U.S. is spread across over 100 consumers, with the top 10 customers accounting for approximately 75% of demand. Over 70% of sales are made on a cost-plus formula with the prices for the remaining sales based on monthly or quarterly negotiation with the customer or market indices.

Sales of acetic acid in Asia are predominately managed directly by the Acetyls business' joint ventures, although the Acetyls business has exclusive off-take rights for all exports and sells this directly into the Asian markets.

Intellectual Property

The Acetyls business owns intellectual property associated with its manufacturing, with an extensive range of patents and patent applications covering processes, products and applications for the production of acetic acid, acetic anhydride and VAM. The Acetyls businesses also owns 2 trademark registrations globally. This IP covers a large number of territories to support their global sales and to ensure broad freedom to operate. In addition, the Acetyls business maintain trade secrets and proprietary information through customary non-competition undertakings with their employees and contractors and through confidentiality agreements with their contractors, developers and customers.

We are not aware of any threatened, proposed or actual proceedings that have been or will be brought against the Acetyls businesses for infringement of third-party rights or any infringement of their rights by third parties that if successfully prosecuted would have a material and adverse effect upon their business.

Research, Product Development and Engineering

The Business' R&D resources are provided through its global R&D site in Hull, with approximately 20 full time employees. R&D spending is primarily focused on improving operating costs and supporting the Business' Joint Ventures. The Business' research and development efforts have resulted in advances that offer the Business various competitive advantages.

The Business' Cativa® technology, has been continuously optimized and commercially operated in multiple plants since first being deployed 25 years ago. The latest development, Cativa® XL process, offers advantaged capital efficiency through reduced process complexity and variable cost improvements through efficient heat integration leading to reduced steam consumption.

Competition

The Acetyls business is the second largest producer globally of acetic acid and the largest producer of acetic anhydride in Western Europe. The Business' acetic acid producing assets compete with all the major global acetic acid producers, including Celanese, Sopo, Huayi, Eastman Chemicals, Sinopec and Shangdong Yangco. The Acetyls Business's primary acetic anhydride competitors include Cerdia and Lonza.

Sales, Marketing and Distribution

The Acetyls business is characterized by a relatively small number of large volume B2B customers, with a small portion of sales managed through distributors. Each region has a dedicated commercial team focused on delivering the customer offer and maximizing margin contribution.

Each regional commercial team consists of:

- A sales team consisting of experienced account managers who own the direct relationship with the customer. Typically, each region has between three to five account managers.

- A business team consisting of production planners, customer service representatives, logistics coordinators and business analysts who provide performance insights and market intelligence to the commercial team.

- A logistics contracts team focused on creating a robust set of third-party providers focused on driving a highly efficient logistics network fully aligned with the customer offer. Across the global business, products are sold via canal, road, rail and sea containers or a combination thereof.

Our Facilities

Overview

We are a geographically diverse global producer of various styrenics, vinyls, aromatics and acetyls products. We are present in all key industry regions and, as of December 31, 2022, operated (including joint ventures) a total of 45 manufacturing facilities in 19 countries. Our plants are well maintained, and we believe they constitute an industry benchmark for world class facilities as they rank among the most cost efficient globally.

Our facilities are located in the Americas, Europe and Asia. We own most of our facilities and we have lease agreements for buildings and/or equipment for the facilities we do not wholly own. With these facilities, we believe we offer customers throughout the world a high standard of service as well as consistent product quality. Most of our facilities are situated on integrated chemical sites, facilitating the secure and efficient delivery of our principal raw materials.

Styrolution Facilities

As of December 31, 2022, the Styrolution Business operated a total of 16 manufacturing facilities in 9 countries. The following table sets forth the product, location and actual capacity as of December 31, 2022 of each of our styrenics production facilities.

Styrolution production facility capacities (December 31, 2022)

REGION	COUNTRY	FACILITY	SM (kilo-tonnes)	PS (kilo-tonnes)	ABS Standard (kilo-tonnes)	SBC (kilo-tonnes)	Other Specialties[1] (kilo-tonnes)	Other products contributed
EMEA	Belgium	Antwerp	**560**	**475**	**260**	**65**	—	**EB (350 kilotons), SAN**
	France	Wingles	—	**116**	**50**	—	—	
	Germany	Cologne	—	—	—	—	**125**	**SAN**
	Germany	Ludwigshafen	—	—	—	—	**227**	
	Germany	Schwarzheide	—	—	—	—	(*)	**(*) compounding of Specialties (55 kilotons)**
Americas	Canada	Sarnia	**445**	—	—	—	—	
	Mexico	Altamira	—	**175**	**110**	**45**	**70**	**SAN**
	U.S.	Bayport[2]	**771**	—	—	—	—	
	U.S.	Channahon	—	**399**	—	—	—	
	U.S.	Decatur	—	**193**	—	—	—	**SMMA**
	U.S.	Texas City	**454**	—	—	—	—	
Asia	South Korea	Ulsan	—	**266**	**244**	—	**43**	**SAN**
	South Korea	Yeosu	—	—	—	**55**	—	
	China	Foshan	—	**200**	—	—	—	
	China	Ningbo[4]	—	**200**	—	—	—	
	Thailand	Map Ta Phut	—	—	—	—	**117**	
TOTAL			**2,230**	**2,024**	**664**	**165**	**582**	

Source: Company information; NexantECA

(1) ABS (Novodur), SAN (Luran), ASA (Luran S), MABS (Terlux), PA+ABS (Terblend N).

(2) This facility will be home to the new 100 kilotons ASA production site that is currently under construction, and is expected to be completed by mid 2023.

INOVYN Facilities

The INOVYN Business currently operates a total of 15 manufacturing sites in eight countries. Our Runcorn, Rafnes, Stenungsund, Antwerp/Lillo, Antwerp/Zandvliet, Jemeppe, Rheinberg and Rosignano facilities all have tri-modal logistical capability (or road, rail and water access). With these facilities, we believe we are able to offer customers throughout the world a high standard of service, as well as products of consistent quality. Most of our facilities are situated on integrated chemical sites, facilitating the secure and efficient delivery of our principal raw materials. All of our production facilities are owned unless otherwise indicated in the table below. As of December 31, 2022, our INOVYN facilities had a total replacement value of €11.4 billion for insurance purposes.

The following table sets forth the product, location and production capacity as of December 31, 2022 for each of our production facilities.

INOVYN production facility capacities (December 31, 2022)

Product by Facility	Country	Capacity (kilotons per annum[1])
Vinyls Businesses		
Suspension PVC		
Jemeppe	Belgium	525
Tavaux	France	200
Rheinberg	Germany	240
Porsgrunn	Norway	155
Martorell	Spain	280
Stenungsund	Sweden	145
Newton Aycliffe	U.K.	300
Total		**1,845**
Emulsion PVC		
Tavaux	France	75
Rheinberg	Germany	45
Porsgrunn	Norway	55
Stenungsund	Sweden	90
Total		**265**
VCM		
Jemeppe	Belgium	525
Tavaux	France	320
Rheinberg	Germany	310
Rafnes	Norway	570
Martorell	Spain	290
Stenungsund	Sweden	160
Total		**2,175**
Organic Chlorine Derivatives and Sulphur Business		
Tavaux (chloromethanes, ECH and perchloroethylene)	France	125
Rheinberg (ECH and other allylics)	Germany	63
Rosignano (chloromethanes)	Italy	35
Runcorn (chlorinated paraffin)	U.K.	56
Total		**279**
Chlor-Alkali Business		
Caustic Soda and Caustic Potash		
Jemeppe	Belgium	182
Antwerp/Lillo (Caustic soda)	Belgium	443
Antwerp/Lillo (Caustic potash)	Belgium	150
Tavaux[(4)]	France	396
Rheinberg	Germany	120
Rosignano	Italy	165
Rafnes	Norway	353
Stenungsund	Sweden	146
Runcorn[(2)]	U.K.	281
Total	U.K.	**2,236**

Product by Facility	Country	Capacity (kilotons per annum[1])
Chlor-Alkali Business (continued)		
Chlorine		
Jemeppe	Belgium	165
Antwerp/Lillo	Belgium	500
Tavaux	France	360
Rheinberg	Germany	180
Rosignano	Italy	150
Rafnes	Norway	320
Stenungsund	Sweden	130
Runcorn[(2)]	U.K.	255
Total		**2,060**
Ethylene and Propylene		
Feyzin[(3)]	France	170
Brine and Water		
Northwich	U.K.	11,000
Salt		
Jemeppe	Belgium	510
Runcorn	U.K.	650
Total		**1,160**

(1) Except for brine production, which is presented in m^3 per annum.

(2) The Runcorn MCP site in the U.K. is 50% owned by INOVYN; capacity figures represent our percentage of ownership interest in the facility.

(3) 42.5% owned by INOVYN; capacity figures represent 42.5% of total capacity.

(4) Includes 106 kilotons of solid caustic soda capacity.

Aromatics Facilities

As of December 31, 2022, our Aromatics Business had material regional businesses in all key global demand centers and operated a total of 6 manufacturing facilities in 5 countries, including the joint venture in Taiwan. The Aromatics Business's plants are well maintained and we believe they constitute an industry benchmark for world-class facilities as they rank among some of the most cost-efficient globally and some of the lowest cost profiles across the three regions and positioning in the first quartile of the industry's cost curve within their respective market regions. The Aromatics Business's facilities are located in North America, Europe and Asia. With these facilities, we believe the Aromatics Business offer customers throughout the world a high standard of service as well as consistent product quality. Many of the facilities are situated on integrated chemical sites, facilitating the secure and efficient delivery of the businesses' principal raw materials and products to customers.

The following tables sets forth the product, location and capacity based on equity shareholdings as of December 31, 2022 of the Aromatics Business' production facilities.

Aromatics production facility capacities based on equity shareholdings (December 31, 2022)

REGION	COUNTRY	FACILITY (Ownership Share)	PTA (kilo-tonnes)	PX (kilo-tonnes)	Other products contributed
Europe	Belgium	Geel (100%)	1,400	670	BZ (90 kilotons)
Americas	U.S.	Texas City (100%)	—	925	MX (130 kilotons)
	U.S.	Cooper River (100%)	1,400	—	
Asia	China	Zhuhai (92%)	2,500	—	
	Taiwan	CAPCO (61%)	500	—	
	Indonesia	Merak (100%))	575	—	
TOTAL			5,985	1,595	

Acetyls Facilities

As of December 31, 2022, our Acetyls Business had material regional businesses in all key global demand centers and operated a total of 8 manufacturing facilities in 7 countries. In the Acetyls Business, the combination of the leading Cativa® technology, strong cost base and feedstock positions as well as co-location on large petrochemical sites allows the business to offer among the lowest cost units in the markets in which it operates. The Acetyls Business's facilities are located in North America and Europe, with joint venture interests in Asia and Trinidad and Tobago. With these facilities, we believe the Acetyls Business offer customers throughout the world a high standard of service as well as consistent product quality. Many of the facilities are situated on integrated chemical sites, facilitating the secure and efficient delivery of the businesses' principal raw materials and products to customers.

The following tables sets forth the product, location and capacity based on equity shareholdings as of December 31, 2022 of each of the Acetyls Business' production facilities.

Acetyls production facility capacities based on equity shareholdings (December 31, 2022)

REGION	COUNTRY	FACILITY (Ownership Share)	AA[1] (kilo-tonnes)	ANH (kilo-tonnes)	Other products contributed
Europe	U.K.	Hull (100%)	550	165	
Americas	Trinidad and Tobago	Point Lisas (37%)	—	—	MN (690 kilotons)
	U.S.	Texas City (100%)	600	—	
Asia	Malaysia	Kerteh (70%)	390	—	
	Taiwan	Mai Lao (50%)	190	—	
	China	Nanjing (50%)	275	—	
	China	Chongqing (51%)	260	—	EA (80 kilotons)
	South Korea	Ulsan (51%)[2]	355	—	VAM (245 kilotons)
TOTAL[3]			2,620	165	

Source: Company information

(1) AA (Acetic Acid), ANH (Acetic Anhydride), MX (Metaxylene), BZ (Benzene), EA (Ethyl Acetate), MN (Methanol), VAM (Vinyl Acetate Monomer).

(2) A new vinyl acetate monomer plant was commissioned in 2020. The site now has 700 kilotons of acetic acid capacity and 480 kilotons of vinyl acetate monomer capacity. A project to convert feedstock from LSFO to natural gas is underway and is expected to improve the feedstock cost position from 2024.

(3) Accounts for equity shareholdings.

Turnarounds

Our manufacturing facilities are periodically shut down for scheduled turnarounds to carry out necessary inspections and testing, to comply with industry regulations and to carry out any necessary maintenance activities. SM facilities typically undergo major turnarounds every three to five years, with each turnaround lasting four to eight weeks. PS, ABS and Specialties facilities are subject to a somewhat shorter shutdown cycle. VCM crackers typically undergo major turnarounds every two to four years, with each turnaround lasting six weeks. Similarly, cellrooms used in chlor-alkali production typically undergo major turnarounds lasting two to four weeks every one to three years. Chlorine derivative plants have turnarounds every two to three years lasting three to four weeks. Turnarounds for PVC plants are more frequent, typically every one to two years, but generally last only one to two weeks, with one exception which is every three years and lasts three weeks. PTA facilities typically undergo major turnarounds every 24 to 30 months, with each turnaround lasting about 4 weeks. Extending this period to 36 months is possible, but not without reliability penalty. Our PX facilities typically undergo major turnarounds every 5 years, with aspiration to extend the period to six. Each turnaround of our PX facilities typically lasts 4 to 5 weeks. Acetic acid facilities typically undergo major turnarounds every 2 to 3 years, with each turnaround lasting 8 to 9 weeks.

Health, Safety, Security and Environment

Overview

Our facilities and operations are subject to a wide range of HSSE laws and regulations in all of the jurisdictions in which we operate. These requirements govern, among other things, the manufacture, storage, handling, treatment, transportation and disposal of hazardous substances and wastes, wastewater discharges, air emissions (including GHG emissions), noise emissions, operation and closure of landfills, human health and safety, process safety and risk management and the clean-up of contaminated sites. Many of our operations require permits and controls to monitor or prevent pollution. We have incurred, and will continue to incur, substantial ongoing capital and operating expenditures to ensure compliance with current and future HSSE laws, regulations and permits or the enforcement of such requirements.

Violations of HSSE requirements may result in substantial fines or penalties, the imposition of other civil or criminal sanctions, cleanup costs, claims for personal injury, health or property damages, requirements to install additional pollution control equipment, or restrictions on, or the suspension of, our operating permits or activities. At certain sites where we operate, regulators have alleged or we have otherwise identified potential or actual non-compliance with HSSE laws and/or the permits which authorize operations at these sites. Some of these allegations or instances of non-compliance are ongoing, and substantial amounts may need to be spent to attain and/or maintain compliance. In addition, we have in the past paid, and in the future may pay, penalties to resolve such matters. Our businesses and facilities have experienced, and in certain cases, are in the process of investigating or remediating, hazardous materials in the soil and groundwater at locations where we operate and/or adjacent properties and/or natural resources at public and private lands not owned by us. We continually investigate and remediate contamination at certain sites where our facilities dispose of hazardous wastes. In addition, HSSE laws and regulations can impose various financial responsibility requirements on us, and pursuant to these requirements we may be required to post bonds, create trust funds or provide other assurances that we will be able to address contamination at our sites and comply with our decommissioning obligations once our facilities reach the end of their useful lives.

Other HSSE laws and regulations may impose restrictions upon product or raw material use, import or sale by us or our customers. For example, it is possible that certain of our products or by- products or the raw materials we use may, in the future, be classified as hazardous or harmful, which could impact our production or demand for our products and, in turn, could materially and adversely affect our business and/or results of operations.

We believe that our operations are nonetheless currently in material compliance with all HSSE laws, regulations and permits. We actively address compliance issues in connection with our operations and properties and we believe that we have systems in place to ensure that environmental costs and liabilities will not have a material adverse impact on us. Nevertheless, estimates of future environmental costs and liabilities are inherently imprecise, and the imposition of unanticipated costs or obligations could have a material adverse effect on our business, financial condition or results of operations in any period in which those costs are incurred.

Greenhouse Gas and Other Air Emissions Regulations

Our operations in Europe are covered by the European Union Emissions Trading Scheme (the "**EU ETS**"), an EU-wide system for industrial greenhouse gas ("**GHG**") emissions. Industrial sites receive or purchase allowances ("**EUAs**") to emit GHGs and must surrender one allowance for each ton of carbon dioxide or equivalent amount of other GHGs emitted. Companies that have lower GHG emissions than their allowances cover are able to sell the excess allowances, whereas those that emit more must buy additional allowances through the EU ETS. We receive fewer free allowances than our actual emissions and as a consequence are required to purchase additional allowances from the traded

market. Going forward, we expect continued reduction in the number of free allowances granted to industrial sites that emit GHGs. In addition, as a result of the Paris Agreement, the European Union committed in December 2020 to reduce GHG emissions in its member states to no more than 55% of 1990 levels by 2030 (on a like-for-like basis), on the condition that other major economies undertake to do their part in the global attempt to reduce emissions and commit to taking steps to achieve Net Zero GHG emissions in the EU by 2050. The European Climate Law, adopted by the European Union in July 2021, includes legally binding targets to achieve climate neutrality by 2050 and to reduce net GHG emissions by at least 55% by 2030 (on a like-for-like basis). Such targets are binding on all EU member states.

As a consequence of Brexit, the U.K. government is no longer subject to the EU legislation that commits EU member states to reducing carbon emissions, increasing energy efficiency and increasing renewable energy production, including in respect of the European Climate Law recently adopted by the European Commission. In addition, the United Kingdom is no longer a participant in the EU ETS. In January 2021, the U.K. implemented a U.K. Emissions Trading Scheme ("**U.K. ETS**"). Like the EU ETS, the U.K. ETS has industrial sites receiving or purchasing allowances to emit GHGs and surrendering one allowance for each ton of carbon dioxide emitted. Companies which emit less GHGs than their allowances cover are able to sell the excess allowances, whereas those which emit more must buy additional allowances through the U.K. ETS. At present, no agreement to link the carbon pricing systems in the EU and the U.K. has been formalized. In addition, as a result of the Paris Agreement, in June 2019, the U.K. government enacted legislation requiring reduction of emissions to Net Zero by 2050, including a target to reduce emissions by 68% of 1990 levels by 2030, and more recently committed to a target to reduce emissions by 78% of 1990 levels by 2035. In connection with Brexit, the U.K. government also introduced legislation designed to transfer responsibility for the Industrial Emissions Directive ("**IED**"), which takes an integrated approach to controlling pollution and sets strict industry standards for the most polluting industries, and the BAT Conclusion, which contain emissions limits associated with Best Available Techniques ("BAT"), to competent authorities in the U.K. and to put in place a process for determining future U.K. BAT Conclusions for industrial emissions. The U.K. government's Clean Air Strategy for England sets out actions for determining future U.K. BAT for industrial emissions. Our operations in the U.K. will continue to operate under the legislative framework applied in the U.K. On January 30, 2020 a bill to make provision about targets, plans and policies for improving the natural environment and certain other matters, including provisions relating to air quality, was introduced in the House of Commons (the "**Environment Bill**"). The Environmental Bill has passed its third reading speech and is before the House of Commons to consider any amendments. Once any amendments are agreed between the House of Commons and the House of Lords the Environment Bill will receive Royal Assent and become law in the United Kingdom. This is not currently anticipated to be material to our businesses.

Air emissions regulations in the U.S. and Canada include, among other things, emissions control monitoring and reporting of GHG and other air emissions at certain facilities, including those that produce and distribute petrochemical and other products. We actively monitor state, regional, provincial and federal GHG initiatives and other regulatory developments in anticipation of any potential impacts on or costs to our operations. In January 2021 the U.S. rejoined the Paris Agreement. The Paris Agreement's metric for tracking emissions targets is country specific "nationally determined contributions" (NDC's). The agreement mandates NDC targets change every five years and reflect each country's "highest possible ambition". NDC's are reported to the United Nations Framework Convention on Climate Change Secretariat and filed into an official public registry. As such the U.S. Congress will need to consider comprehensive federal legislation regarding climate change, and consequently various regional initiative regarding emissions associated with climate change are in effect or proposed. The nature, scope and timing of any proposed legislation, including climate change legislation and/or other proposed rules regulating GHGs, is highly uncertain and, currently, we do not know what precise effect, if any, such legislation will have on our financial condition and operations.

In the U.S., stringent controls on certain air emissions, including the need to purchase nitrogen oxide emissions credits for certain of our facilities in Texas, impact our operations and, indirectly, the cost of our products. Credit pricing is subject to general economic conditions, but we believe such credits should remain available and affordable. The USEPA issued revised ozone standards in late 2015, which require states to restrict or prohibit emissions that "significantly contribute" to non-attainment of, or interfere with a state's ability to maintain, the revised ozone standard in other "downwind" states. After consideration to reverse its position and retain the original standard, in December 2020, the USEPA decided to retain the existing 2015 ozone NAAQS standard citing that the current NAAQS protects the public health, with an adequate margin of safety, including the health of at-risk populations, and protect the public welfare from adverse effects. At this time, it is not clear whether further regulatory changes to be issued by states and/or the federal government will contain stricter limits for nitrogen oxides, including best available control technology, or other operating limitations that could cause us to incur additional compliance and/or capital costs and/or adversely impact our production and our results of operations.

In Ontario, Canada, the Petrochemical Industry Standard (PCIS) came into effect on July 1, 2016. We have taken measures in our capital investment plan to upgrade our Ontario operations to reduce benzene emissions in accordance with the requirements set out under this standard. We do not expect that the costs of implementing such measures will have a material adverse effect on our financial position or operations.

In South Korea, we are subject to the Framework Act on Low Carbon Green Growth, requiring us to prepare an emissions inventory and, in cooperation with the national government, to set and comply with carbon emissions reductions targets. We are currently conducting an inventory as well as an engineering study to evaluate options for reducing carbon emissions. It is not expected that the costs involved in implementing these measures will have a material adverse effect on our competitive or financial position or our ongoing results of operations. South Korea has proposed or is considering additional regulations on air emissions and we are actively monitoring the progress of those legislative initiatives.

Chemical Regulation and Product Stewardship

The EU regulates chemical products within the EU by imposing on all affected industries the responsibility for ensuring and demonstrating the safe production, use and disposal of chemicals. The Registration, Evaluation, Authorization and Restriction of Chemicals ("**REACH**") Regulation requires the registration of all chemicals produced or imported into the EU (either alone, in mixtures, or in certain cases, in articles) with the European Chemicals Agency ("**ECHA**"). Our U.K. operations are now subject to an equivalent U.K. version of the REACH regulation: U.K.-REACH, with the U.K. Health and Safety Executive fulfilling the role of ECHA. The regulation requires formal documentation in the form of a dossier of the hazard data for each substance registered, as well as risk assessments for their registered uses. Most uses of high hazard substances such as those classified as carcinogens or "substances of very high concern," will require authorization by the ECHA. REACH also requires extensive toxicological testing, documentation and risk assessments of the substances we produce and of many of our raw materials, though the responsibilities for dossier submission are typically handled by our suppliers.

We manufacture various hazardous products and by-products and we continuously engage with the ECHA to ensure that the hazard status of the substances is consistent with the available data. We believe that we are currently in material compliance with the requirements of the REACH regulation. Methyl chloride, carbon tetrachloride, methylene chloride and medium-chain chlorinated paraffins have undergone substance evaluation as part of the Community Rolling Action Plan. Some hazard clarifications may change in the future or result in restrictions in certain consumer uses.

For example, under the REACH Regulation, VCM and EDC, as well as other substances we use in our production processes or products, are designated as "Substances of Very High Concern" ("**SVHC**"). Accordingly, there are additional risks, costs and requirements associated with the processing, distribution, sale and transport of these substances, although we believe that our on-going strategies to evolve our manufacturing towards large, fully integrated (chlorine to EDC to VCM to PVC) sites reduces such risks to the business. Companies that use EDC as a solvent are required to obtain prior authorization. However, the use of EDC to manufacture VCM is exempted from the authorization procedure since it is for intermediate use only. INOVYN's Medium Chain Chlorinated Paraffin products are now designated as SVHC and as a result we are engaging with the ECHA on the development of a restriction to its manufacture, use and placing on the market. This restriction is due to be published in the second quarter of 2024 with a minimum of 24 months for restrictions under discussion to come into force. Additionally, EDC is subject to the EU Prior Informed Consent ("**PIC**") Regulation, meaning that exports of it from the EU are subject to licensing by ECHA. The U.K. has implemented a mirror PIC scheme following the BREXIT process for exports of EDC from the U.K.. INOVYN is registered with the relevant IT systems with the European Chemicals Agency and U.K. equivalent to obtain PIC licenses for any such shipment. We are also participating in further studies on the Mode of Action study for breast cancer for EDC, the outcome of which will be important for the determination of exposure limits for EDC. Whilst we will incur costs in connection with the foregoing, we do not expect additional capital expenditures to be material.

In addition to being extensively used in the chemicals industry, acetic anhydride is a category 2A drug precursor and therefore is subject to stricter regulations to prevent its use in illicit narcotic substances. The Acetyls Business is required to have End User Declarations (EUDs) and valid Customer Registration documents from the competent authorities prior to any sale.

As a corollary to the REACH Regulation, the EU has adopted the Classification, Labeling and Packaging Regulation ("CLP") to harmonize the EU's system of classifying, labeling and packaging chemical substances with the United Nation's Globally Harmonized System. This regulation standardizes communication of hazard information of chemicals and promotes regulatory efficiency. It introduces new classification criteria, hazard symbols and labeling phrases, while taking account of elements that are part of the current EU legislation. We believe we are in material compliance with applicable regulations under CLP, which affects many of our products, including products imported into the EU. In Europe there is a broad policy initiative titled as the Chemical Strategy for Sustainability("CSS") covering a complete overhaul of chemical legislation, encompassing polymers requiring regulation referred to above, but many other aspects, such as initiatives introducing sustainability by design and new classification categories covering, for example, endocrine substances. The political objective is summarized in the Green Deal with the aim of developing a toxic free environment through improved regulation. The EU has now commenced a review of the CLP regulation as part of the CSS in which new hazard classifications are proposed and we engage in relevant industry associations to participate in consultations on this and will evaluate proposals as they come.

In the U.S., our products are subject to environmental, health and industrial hygiene regulations of TSCA requiring the registration and safety analysis of the substances contained in them. Pursuant to the Frank R Lautenberg Chemical Safety for the 21st Century Act, passed in 2016, the USEPA is currently revising TSCA regulations to comply with the new law which may result in additional or more stringent regulatory testing, labelling and notification requirements; risk screening of certain of our products by USEPA; and new or more stringent regulatory obligations and/or restrictions, including, potentially, prohibitions on manufacture and sale of certain products. USEPA has published lists of chemical substances that are the subject of USEPA's initial chemical risk evaluations, as required by TSCA, which includes chemicals that we manufacture. In addition, while styrene and ethylbenzene were not among the first 40 chemicals for prioritization identified in March 2019, their review is expected as they were on the previous TSCA chemical Work Plan list. The next U.S. EPA prioritization is expected in the first quarter of 2024 and it is possible that the EPA could order styrene/ethylbenzene testing to support prioritization. Moreover, we are engaged in ongoing discussions with the USEPA regarding risk reduction measures in relation to the use of medium-chain chlorinated paraffins and long-chain chlorinated paraffins and have signed up to a new testing program with other manufacturers to assess the risks and hazards associated with these substances. There is a possibility that the results of these tests may result in restrictions on uses for such products in the U.S. market, which could have an adverse effect on our business, financial condition or results of operations.

Styrene monomer and Ethylbenzene, in particular, require specialized handling procedures due to their acute and chronic toxicity. In the U.S., the National Toxicity Program of the Department of Health and Human Services has classified styrene as "reasonably anticipated" to be a human carcinogen. In addition, the USEPA has been reviewing ethylbenzene toxicology and environmental exposure through its Integrated Risk Information System ("**IRIS**"). ECHA has also classified styrene as a substance "suspected of damaging the unborn child" and as causing "damage to hearing organs" through prolonged or repeated exposure under the REACH and CLP Regulations.

The International Agency for Research on Cancer has also classified styrene as "probably" carcinogenic to humans. Subsequently, the European Commission mandated the European Food Safety Authority (the "**EFSA**") to review styrene regarding its use to make plastics used in food contact applications. The EFSA has issued an initial opinion on styrene. It was stated in the opinion that concern for genotoxicity associated with oral exposure to styrene could not be ruled out. Following this, the European Commission is developing risk management precautionary measures for styrene, with a Specific Migration Limit, which could restrict certain applications for these plastics. This is expected to be concluded in 2023. A further mandate is expected for EFSA to continue their review on genotoxicity. This is expected to take a further two to three years.

In 2019, the American Conference of Governmental Industrial Hygienists adopted a new Occupational Exposure level of 10 ppm for styrene. A similar process is planned in Europe . Classification of styrene as "probably" carcinogenic to humans, along with tightening occupational exposure legislation related to styrene and other monomers, could result in additional restrictions on our manufacturing operations, including more burdensome requirements for additional ventilation or protective equipment for workers at our plants, or on our sale or distribution of styrene, including relevant warnings on our material safety data sheets or on the packaging for our products, as well as legal action relating to product and other liabilities. Other jurisdictions could enact similar legislation. In addition, acrylonitrile has recently been reviewed in Europe with a substantially lower occupational exposure limit concluded and a similar review is starting for butadiene.

Butadiene has been classified as a known human carcinogen by the IARC, the NTP and USEPA. The U.S. Occupational Safety and Health Administration currently limits the permissible employee exposure to butadiene. If future studies on the health effects of butadiene result in additional regulations in the U.S. or new regulations in Europe that further restrict or prohibit the use of, and exposure to, butadiene, we could be required to change our operations, which could affect the quality of our products and increase our costs. Other jurisdictions could enact similar legislation.

Several states in the U.S. are, or are in the process of, including chemicals of concern relating to our monomer products and polymer products, such as styrene and ethylbenzene, in their safety legislation, requiring additional declarations, labelling or reporting requirements. In addition, in the EU, additional requirements under REACH are contemplated which would specifically regulate polymers, in addition to the existing regulation that covers the registration of substances. If enacted, this could lead to an increased regulatory burden or new constraints for production or use of styrenic polymers. Discussions are at an early stage and it is unclear currently how our polymers may be affected.

Other jurisdictions across the world are considering, or have proposed or enacted, similar chemical control legislation to the EU REACH regulation or simpler Global Inventory legislation. For example, South Korea and Turkey have enacted similar legislation to REACH. In Ontario, Canada, on December 31, 2021, the Toxics Reduction Act was repealed in favor of the federal Chemicals Management Program. We have submitted numerous pre-registrations under Turkey's REACH regulation ("KKDIK") and are developing registration processes for full registration. We have also pre-registered products under the Eurasia REACH scheme. For the U.K., we have a combination of grandfathered registrations from the EU but have also submitted numerous inquiry and notification dossiers to ensure maximum flexibility of supply to the U.K. market.

Our polymer products have widespread end uses in a variety of tightly regulated consumer industries, including food packaging and medical applications. Regulations relating to sensitive end consumer applications such as food contact and toys are evolving rapidly in several jurisdictions. This is giving increasing concern related to residual monomer levels, such as acrylonitrile and butadiene, with some of our products. This is also imposing increasing requirements for improved risk assessments of our products. For example, an amendment to the EU Plastics Food Contact Regulation with an application date for March 2021 for new products and articles and September 2022 for existing products and articles has been introduced. This requires that all substances where genotoxicity has not been ruled out be communicated to the customer in the document of compliance. Previously, industry applied a level of 10ppb for their risk assessment work as a practical analytical limit. This new requirement has a substantially lower limit of 0.15ppb. For the time being, the risks associated with this legislation have been mitigated, with only limited restrictions on our grade range. Further risks remain and are being monitored.

Prevention of Major Accidents and Process Safety

Risks are inherent in the chemical and petrochemical businesses, particularly risks associated with safety, health and the environment, and each of our facilities actively assesses and manages such risks as required by law. Within the European Union, an EU directive on the control of major accident hazards (the "Seveso III Directive"), regulates facilities that present a risk of accidents involving dangerous substances and imposes specific plans and procedures on them, particularly for the storage of such substances. The Seveso III Directive, which replaced the previous Seveso II Directive on June 1, 2015, provides for control measures aimed at preventing and limiting the consequences of major accidents. All of our major production sites are in the top tier of regulation under the Seveso III Directive due to the quantity of dangerous substances stored at them. As such, we must establish a major accident prevention policy, safety reporting system, safety management system and emergency plan compliant with the requirements of the Seveso III Directive.

In the United States, our manufacturing facilities are subject to the U.S. EPA's Risk Management Program ("RMP"), which requires facilities that produce, handle, process, distribute or store certain highly hazardous chemicals to develop a risk management plan and program in the event of an accidental release of such chemicals. RMP also requires facilities to assess potential impacts to off-site populations in the event of a credible worst-case release and to document the policies, procedures, equipment and work practices in place to mitigate identified risks. Similar risk management requirements are imposed upon our facilities under the Emergency Planning and Community Right-to-Know Act, which contains chemical emergency response planning, accident release and other reporting and notification requirements applicable to our U.S. manufacturing facilities. The U.S. EPA finalized the change to the RMP regulations in 2016 that became effective in September 2018 and some further changes were made in December 2019. While the changes impact some RMP-covered sites, they are not significant enough to create a burden or increase costs for our facilities.

In addition, our U.S. facilities are subject to standards including the OSHA Process Safety Management ("PSM") standard, which requires development of a program to manage workplace risks associated with highly hazardous chemicals. To better manage risks and process safety we pursue certifications within OSHA's Voluntary Protection Program ("VPP"), and our Battleground (Houston) and Chocolate Bayou sites are certified to Star status, the highest level achievable. Star level means that the site has successfully implemented a safety and health management system and achieved a combined injury and illness rate that is below the industry rate nationwide. In addition, many of our U.S. sites also report PSM incidents as required by API 754 as part of the database maintained by the American Fuel and Petrochemical Manufacturers association.

Programs employed to manage PSM risks include instrumentation and overpressure relief devices. Industry standards such as ISA 84, an international standard that addresses the application of safety- instrumented systems for process industries with IEC 61508/511 being the European equivalent, are used. Our pressure relief systems are reviewed and designed to relevant legal (OSHA, ASME, NFPA, PED, ISO), industry (API, DIERS) and internal standards. In addition, all of our businesses are aware that effective safety management is consciously required to address and deal with major accident and process safety risks.

For locations outside the EU and U.S., country specific regulations continue to develop for the prevention of major process safety accidents. Pertinent for our operations, these countries include Korea, Thailand and China.

We promote personal leadership for the management of these risks and the Board of Directors for each business operates a "Letter of Assurance" process whereby each of the Operations Directors/Site Managers reviews compliance with local regulations and the effectiveness of the safety management system. They then formally inform their Executive Team and Chief Executive in writing about any issues about which they need to be concerned. This process is intended to provide assurance that all businesses are in compliance in all material respects with applicable health, safety and environmental laws in the countries in which they operate.

Security and Crisis Management

The U.S. Department of Homeland Security ("DHS") requires compliance by our facilities as defined in the Marine Transportation Security Act ("MTSA"), the Chemical Facilities Anti-Terrorism Standards (CFATS) and U.S. Department of Transportation Hazardous Materials regulations.

The DHS, the U.S. Federal Emergency Management Administration and individual state emergency management regulators require that all sites hosting emergency response teams train responders. It is required that the emergency response teams and incident management teams have the knowledge, skills and equipment to allow them to work in concert with local, state, and Federal agencies in a framework defined by the National Incident Management System ("NIMS"). NIMS or equivalent training is conducted at sites to meet the intent of NIMS requirements. This allows the site responders to join with the governmental group in cases of widespread emergencies, including pandemics, where multiple agencies and organizations are involved.

Proposed EU legislation would require similar actions at certain of our European facilities. Our facilities across all jurisdictions are periodically assessed to ensure that they meet appropriate security standards and safeguards and have appropriate systems for emergency response and crisis management.

The INOVYN business, following security assessments performed in previous years by external security experts is in the process of a capital investment program to improve closed circuit television, fencing and turnstile gate entry at its facilities. Similar to INOVYN, security audits (security vulnerability assessments) have been completed at Styrolution facilities worldwide. Corrective actions have been completed and Styrolution facilities are now in compliance with INEOS Group facility security guidelines.

Environmental Remediation and Closure Liabilities

Environmental laws and regulations may require us to investigate, remediate or otherwise address impacts resulting from the disposal or release of hazardous substances or wastes at our current or former sites or at other third-party properties or facilities used in connection with our business. Under some of these laws and regulations, including the U.S. Superfund law, a current or previous owner or operator of property, or a party who sent, or arranged to send, wastes to such a property, may be held liable for the costs related to clean-up of hazardous substances on that property regardless of whether that party knew of or caused the contamination and regardless of whether the practices that resulted in the contamination were legal at the time they occurred.

Some of our production and R&D sites, particularly those with an extended history of industrial use, have known or suspected soil and groundwater contamination, and in some cases, the contamination is believed to have migrated off site. We are currently, and from time to time have been or may be, required to investigate and remediate releases of hazardous substances or wastes at or migrating from certain of these sites, as well as properties we formerly owned, leased or operated. We are currently remediating a number of sites with known contamination and we are incurring, have in the past incurred, and may in the future incur, costs to investigate, remediate or contain such contamination. In addition, we are currently managing the phase-out of mercury at our chlor-alkali facilities. Our aim is to meet regulatory requirements with a risk-based approach according to the "Responsible care program of the chemical industry" supported by Euro Chlor. At certain locations, we are also investigating and/or remediating environmental impacts related to these historical operations. We have been and could, in the future, also be responsible for investigating and cleaning up mercury or other contamination at off-site locations where we or our predecessors disposed of or arranged for the disposal or treatment of hazardous substances or wastes. In addition, the sale, expansion or closure of our production and R&D sites could trigger obligations with respect to existing contamination that, but for the sale, expansion or closure, we would not otherwise be required to undertake. We are, from time to time, identified as a potentially responsible party at third-party or Superfund sites.

We may also be subject to claims alleging property damages or personal injuries, including those resulting from releases or migration of hazardous materials beyond the boundaries of our production or R&D sites and/or for the costs of addressing or repairing damages to public water bodies or other natural resources. In connection with contaminated properties, as well as our operations generally, we also could be subject to claims by government authorities, individuals and other third parties seeking damages for alleged personal injury or property or natural resources damages resulting from contamination by hazardous substances or wastes or human exposure to such materials that is caused by our operations, facilities or products. Baseline surveys of soil and groundwater conditions have already been conducted at many of our sites in the EU in connection with obtaining our Integrated Pollution Prevention and Control ("**IPPC**") permits and/or national or local contaminated land regulations. The data from those surveys have been reported to the relevant authorities. Local and national regulations on soil and groundwater contamination are strictly followed across all our sites. A monitoring of groundwater is implemented on a regular basis at our sites, when relevant, whether or not it is required by the environmental authority. In compliance with the Industrial Emissions Directive ("**IED**"), we are also conducting new baseline surveys when applicable.

The process of investigation and remediation can be lengthy, varies from site to site, and is subject to changing legal requirements and developing technologies over a number of years. According to the current rules stipulated by the national or local authorities, we believe that we are able to address any currently known contamination at, or under, our operating sites, and we do not expect unanticipated remedial work related to such conditions to be required or that the costs of environmental remediation will have a material adverse effect on our competitive or financial position or our ongoing results of operations. Nevertheless, the discovery of previously unknown contamination, or the imposition of new obligations to investigate or remediate known contamination at our facilities, including in connection with newly acquired properties, could result in substantial costs in excess of currently budgeted amounts for such matters. We could in the future be required to establish or substantially increase financial reserves to address such obligations or liabilities.

Employee Matters

As of December 31, 2022, the Styrolution, INOVYN, Aromatics and Acetyls Businesses had approximately 8,645 employees worldwide.

In part due to the technological and highly technical nature of our business, we put an emphasis on the acquisition and maintenance of skills and qualifications by our teams. Accordingly, we align our training programs to promote the development of our employees at all levels of our organization. Our remuneration policy consists of monetary and non-monetary components. We aim to pay our employees above market rates, including by providing for potentially large variable portions in annual compensation. We harmonize our local compensation practice with country-specific conditions, using chemical industry benchmarks for each of our locations.

Membership in trade unions varies in accordance with the business areas, local practice and countries in which we operate. Other than management and professional personnel, as well as head office staff, the majority of our employees are represented by local trade unions or works councils or employee fora and covered by collective bargaining agreements. These agreements typically govern, among other things, terms and conditions of employment and dispute resolution procedures. Terms and conditions of union agreements reflect the prevailing practices in each country.

Historically, we have enjoyed good labor relations, and we are committed to maintaining these relationships. There have been no material work stoppages or strikes at any of our sites during the past three years. We take a constructive approach to union relationships where there are unionized sites, and we have been able to secure the cooperation of both unions and the workforce with regard to significant changes and the process of continuous improvement of our businesses.

Insurance

Our wholly owned sites benefit from insurance coverage under the group-wide INEOS Group insurance programs, while our joint ventures are covered by separate insurance arrangements. Our plants, machinery, equipment, inventories and other assets are insured under such programs on an all risk basis for property damage, business interruption, machinery breakdown, public liability risks (*e.g.*, product liability and environmental risks), marine risks, construction risks and certain financial risks (*e.g.*, directors' and officers' liability insurance). The insurance policies were recently renewed.

Our major construction projects, defined as those with a total investment cost above €100 million, are insured separately with bespoke project insurance policies.

We believe our insurance policies are generally in accordance with customary industry practices, including deductibles and limits of coverage. Our broker, lead insurers and underwriters perform risk engineering surveys and routinely inspect all assets. Under the global INEOS Group insurance program, we have to regularly revalue our assets. Such periodic valuations, which are prepared by third parties, are used by our insurance broker to establish the estimated replacement value ("**ERV**") of our properties and compare the ERV to the values we have declared for such properties. Because the declared values are used to calculate insurance premia, if the declared value of a property is lower than the actual ERV established by a valuation report, any payout under the property damage policy may be proportionately reduced to reflect the underpayment of premia. Insurance coverage relating to environmental matters tends to be subject to significant limitations and exclusions. If INEOS were to cease to hold at least a 50% interest in our business, we may no longer be entitled to coverage under these policies.

Legal proceedings

Like our competitors, we are, and in the future may from time to time be, involved in proceedings or litigation arising in the ordinary course of business. We do not believe that the ultimate resolution of these matters will materially affect our financial condition or results of operations.

On September 28, 2019, a cargo of styrene monomer produced by INEOS Styrolution America LLC in Pasadena, Texas allegedly polymerized while aboard the Stolt Groenland resulting in an explosion while moored in Ulsan, South Korea. The styrene monomer had been sold FOB Pasadena, Texas to Samsung C&T America Inc. and loaded on August 17, 2019. The Marine Accident Investigation Branch ("**MAIB**") out of the U.K. investigated the incident. The MAIB also informed INEOS Styrolution America LLC that in, mid-November 2019, a separate cargo of styrene monomer produced by INEOS Styrolution America LLC in Pasadena, Texas allegedly showed signs of temperature increases while aboard the Stolt Focus. The temperature of the cargo was controlled by the Stolt Focus by separating the cargo into multiple cargoes and adding sea water. This styrene monomer had also been sold FOB Pasadena, Texas to Tricon and loaded on August 4, 2019. On November 9, 2020 the MAIB held a conference call to review the results of its investigation. The key issues discussed involved proximity of the load to other heated cargoes, the lack of review by ship personnel of temperature data/trends and the failure to adjust settings for temperature alarms on the ship. On July 16, 2021, the MAIB issued their final report on these matters which was consistent with the discussions held on the November 9, 2020 conference call. There has been no further activity on these matters since the issuance of the report, and by now, these matters are closed.

We have been the subject of a tax audit in Italy in 2019 relating to the years 2011 through 2017, which focused on whether certain of our German and Swiss subsidiaries entertained permanent establishments in Italy, which would have made them liable to pay certain taxes in Italy. Such audit also resulted in the initiation of a criminal investigation, with prosecutors alleging an unlawful failure to file tax returns in the relevant years. The Italian tax audit was concluded by settlement with the Italian tax authorities in December 2019, which included payment by the Group of €7.0 million in taxes, interest and penalties at the level of the local entity as a transfer price adjustment. The Italian authorities agreed in the settlement that the German and Swiss Styrolution entities did not entertain permanent establishments in Italy. The criminal proceedings were closed in 2021 by way of dismissal by the court without any penalties or other adverse results for Styrolution nor any of its representatives.

In 2017, INOVYN terminated a distribution agreement with its distributor, Leichem. In July 2017, Leichem alleging wrongful termination and abuse of dominance, initiated legal proceedings against INOVYN before the Commercial Court in Paris, France, claiming €48 million in damages. On June 12, 2018, the Commercial Court of Paris sentenced INOVYN to pay €0.7 million in damages for failure to comply with the notice requirement. Leichem subsequently filed various appeals, the last of which was rejected by the Supreme Court (Cour de Cassation) on September 8, 2022. No further appeal is possible by Leichem. In 2020, INOVYN's Swedish subsidiary, INOVYN Sverige AB filed a claim against ÅF-Industry AB (Engineering, Procurement and Construction Management contractor) for breach of its contractual obligations in the context of a cellroom conversion project in Stenungsund from July 2016 until 2019. INOVYN Sverige AB initiated proceedings before the Arbitration Institute of the Stockholm Chamber of Commerce on December 30, 2020, claiming for losses of €42 million. ÅF-Industry AB filed a counterclaim of €16.5 million. Final arbitral award is not expected before the fourth quarter of 2024.

The Acetyls business has recently been the subject of a tax audit in Trinidad and Tobago relating to the years 2005-2013, that focused on various fixed price contracts used to mitigate risk resulting from the volatile prices of products produced at the business joint venture site. A final hearing before the Trinidad and Tobago Tax Appeal Board was held on February 4, 2020. The decision of the Tax Appeal Board is appealable by the Acetyls Businesses and the Trinidad and Tobago Board of Inland Revenue. As of December 31, 2022, the Business' share of exposure as a result of this tax audit is approximately $309 million. As part of the transaction, BP has also given an indemnity with respect to this matter.

HSSE Principles

We remain very strongly committed to excellent HSSE performance and believe we are a top decile performer within the chemicals industry. In 2013, INEOS converted its safety performance monitoring to mirror the U.S. OSHA standard. This enabled a common platform for comparisons and increased the number and types of injury data collected and analyzed. Across the wider INEOS group, the OSHA rate for the combined INEOS and contractor workforce has decreased in recent years from a high of 0.52 injuries per 200,000 hours in 2013 to only 0.18 in 2021 and 0.16 in 2022. The OSHA for our Styrolution Business, INOVYN Business, Aromatics Business and Acetyls Business for the year ended December 31, 2022 was 0.12, 0.21, 0.00 and 0.23, respectively.

We strive to operate throughout the world with a commitment to doing what is needed to protect the environment and to comply with all applicable regulations in the countries in which we operate. Our focus is on prevention of process safety incidents and we have developed internal audit programs (20 HSSE principles) designed to monitor and correct any deviations from acceptable performance.

Our aim is to avoid injuries to the community, employees and contractors. We focus on reducing major plant losses of containment of chemicals with health and safety impact. Core to our HSSE standards is our HSSE policy, which promotes executive management and individual responsibility, adherence to operating procedures and training and requires our sites to be designed, operated and managed with the goal of preventing major incidents.

SUSTAINABILITY

Improving the sustainability of our business and operations is central to the way we work. It is of critical importance to our employees, to our partners and customers, to the communities in which we operate, and to our investors.

Our sustainability strategy is to develop and safely manufacture the products needed to address the evolving challenges of climate change, public health, resource scarcity, urbanisation and waste in a way which drives us all towards a net zero emissions economy by 2050. We will do so whilst reducing the impact of our operations. It is built on six key pillars:

1. Excellence in Safety Health & the Environment (SHE)
2. Climate change - delivery of a net zero business
3. Circular Economy – maximising the re-use and recycle of our products
4. People – ensuring an equal opportunity environment in which a diverse team of people can flourish and deliver the innovations we need
5. Communities and the Natural Environment – enhance the communities in which we operate
6. Governance – rigorously sustaining the highest standards oof ethics and compliance

Our efforts on sustainability, including our targets, our reporting of Green House Gas (GHG) and other emissions, of energy and water usage, and of waste generation, are published in our INEOS wide 2022 Sustainability Report (https://www.ineos.com/sustainability/sustainability-reports), which is aligned with the framework described in the Global Reporting Initiative (GRI). and UN sustainable development goals. Two key priorities, Climate Change and the Circular Economy, are summarized below.

CLIMATE CHANGE

Following the Paris Climate Agreement of 2015, most nation states have recognized the threat posed by climate change and have set the goal to achieve a net zero emission economy by 2050 and are adopting regulations and legislation to support this objective.

In response, INEOS implemented management of the risks posed by climate change to each of its businesses and the potential new business opportunities and threats arising from the transition. The assessments will be regularly updated in the context of three the Intergovernmental Panel on Climate Change (IPCC) climate change scenarios in which temperature rise compared to the pre-industrial period is limited to 2 C or less, 2-4.5 C, and 5-8.5 C respectively (see for example: https://www.ipcc.ch/report/ar6/wg3/downloads/report/ IPCC_ AR6_WGIII_Chapter03.pdf). An INEOS-wide target has been set to achieve 33% reduction in GHG emissions by 2030 (compared to 2019) and net zero emissions by 2050. In line with this, INEOS Quattro businesses have each developed a roadmap which outlines plans and key actions required to deliver the 2030 target of 33% reduction. INEOS wide, the company has earmarked over €6 billon capital investment to support the delivery of targets.

Actions include the following:

Continuous improvement of energy and process efficiency

We are working aggressively across all our business and sites to make important reductions in energy use and associated GHG emissions.

For example, the INOVYN business has a salt plant upgrade project in Tavaux, France which utilises best-in-class mechanical vapour recompression unit technology. The project is expected to be completed in 2024 and will reduce steam consumption by 360 kilo tonnes per annum which is equivalent to reducing the Tavaux site's footprint by 16%. Water consumption will also be reduced by 6%. The North Star project in Norway was commissioned in 2020 and consisted of major debottlenecking activities across both the electrochemical and VCM assets. This project has reduced steam consumption by 80 kilo tonnes annually.

Similarly, the Aromatics business' PTA technology allowed the latest PTA plant in Zhuhai to reduce GHG emissions by 65%, water discharge by 75% and solid waste disposal by 95% compared to conventional technologies.

The Acetyls business is continuing to roll out its retrofit of world leading CATIVA XL acetic acid production technology to its global assets. This technology package allows Acetyls plants to produce acid with 80% less heat input and 50% less electricity than generic technology. As part of this INEOS' innovative High Pressure Offgas Reinjection technology has now been rolled out to all applicable plants. This recycles carbon that was previously incinerated and re-injects it into the process where it is instead captured and reacted into product, reducing GHG emissions and reducing natural gas usage.

Investment in green hydrogen and blue hydrogen for use as a fuel on sites and as a feedstock

For example, the recent launch of our new clean hydrogen business in the INOVYN business allows us to use our existing capabilities to facilitate the use of hydrogen as a key part of the transition to net-zero. The recently announced commitment of €2 billion from INEOS Group will be coordinated by the newly created Hydrogen Business Function within the INOVYN business. The first plants will be built in Norway, Germany and Belgium in the next 10 years with investment also planned in the U.K. and France. INOVYN, is already Europe's largest existing operator of electrolysis, the critical technology necessary to produce green hydrogen for power generation, transportation, and industrial use. Our business also has extensive experience in the storage and handling of hydrogen which puts our company in a unique position to drive progress towards a carbon-free future based on hydrogen. The first unit to be built will be a 20MW electrolyzer to produce clean hydrogen through the electrolysis of water, powered by zero-carbon electricity in Norway. This project will lead to a minimum reduction of an estimated 22,000 tons of CO2 per year by reducing the carbon footprint of INEOS' operations at Rafnes and serving as a hub to provide hydrogen to the Norwegian transport sector.

The Acetyls business is undertaking a project to fuel switch to hydrogen at Hull site, the United Kingdom. The site has a large demand for heat that can only be met by burning fuel. Currently, this is done with natural gas, resulting in over 350,000 te of CO2 being emitted every year. The project will enable Hull assets to switch to using its own clean hydrogen instead of natural gas. Burning hydrogen will not release any CO2, decarbonising the site. This fuel switching will reduce scope 1 emissions by circa 80% - the equivalent of taking ~140,000 petrol cars off the road. The business will create a centre of expertise in hydrogen fuel switching, allowing further work to decarbonise Acetyls' global assets. This fuel switch project is also part of a wider roadmap for the Hull site which will see it become the world's first net-zero acetic acid production site by 2030.

Increased purchase of renewable energy to substitute for fossil derived energy of renewable energy

We have already signed power purchase agreements for a total of about 570 MW INEOS wide.

Use of bio-based feedstocks to reduce dependency on fossil-based materials and deliver bio-based products

In 2022, INOVYN continued to further expand its BIOVYN™ business and as well as increasing the number of audited manufacturing sites accredited to the Roundtable for Sustainable Biomaterials Standard ("RSB"), and also added the International Sustainability and Carbon Certification ("ISCC") to its product range. BIOVYN™ is the world's first bio-attributed PVC and represents a paradigm shift for the PVC industry. It delivers a greenhouse gas saving of over 90%, moving us towards a carbon-neutral, circular economy and offers customers an immediate choice should they wish to invest in a PVC resin with an almost zero carbon footprint. The feedstock from BIOVYN™ is derived from second generation biomass from the timber industry. This has the advantage of not competing with the food chain. A wide range of INOVYN customers are now taking delivery of BIOVYN™ feedstock for use in pipes, flooring, automotive as well as a wide range of other applications.

In 2021, the INOVYN business launched REODRIN™, a bio-attributed epichlorohydrin largely used in the process of manufacturing epoxy resins for use such as in wind turbines and composite materials and is made from non-fossil, circular feedstock. Manufactured at Tavaux, France, REODRIN™ is produced using a second generation, renewable feedstock that eliminates the use of energy crops and palm materials from the supply chain, therefore using 99% less land and water than conventional feedstocks. Furthermore, REODRIN™ is certified as enabling a greenhouse gas saving of almost 70% compared to fossil-based/palm-based epichlorohydrin.

PRODUCTS & THE CIRCULAR ECONOMY

INEOS believes that its products already make a critical contribution to society by providing the most sustainable options for a wide range of societal needs. Examples include preservation of food and clean water; provision of wind turbines, solar panels and other renewable technologies, construction of lighter and more efficient vehicles and aircraft, production of medical devices and applications, manufacture of clothing and apparel, materials for insulation and other industrial and home applications. Studies suggest that if polymers and plastics were to be replaced to the maximum extent in applications where they can be substituted, overall life-cycle greenhouse gas emissions would increase by more than 50% (https://denkstatt.eu/download/15971/).

However, it is generally accepted that a move towards a more circular economy, in which materials are reused and recycled to their maximum extent, is an important component of a more sustainable climate neutral economy. In certain regions, for example Europe and the UK, legislation is under development to incentivize recycling of materials, especially for packaging products. The company has therefore committed to achieving the following INEOS-wide targets by 2025.

- Offer a range of polyolefin products for packaging applications in Europe containing 50% or more recycled content.
- Incorporate at least 325 kta of recycled material into products.
- Ensure 100% of our polymer products can be recycled.

In addition, a new INEOS wide target to incorporate 825 kt of recycled or bio-sourced material into INEOS products by 2030.

We are dedicated to sustainability and the development of a circular economy for plastics is seen as a key strategic goal. Our Styrolution Business has already made successful advances toward this goal, which were recognized with the joint award in 2019 of an Independent Commodity Intelligence Services (ICIS) Innovation Award in the category "Innovation with Best Benefit for Environment and Sustainability". We were also nominated as a finalist by Chemical Week magazine for its 2020 Sustainability Awards under the category "best sustainability programme".

In addition, the Styrolution Business, the INOVYN Business and the INEOS Group as a whole have all undergone recent sustainability assessments by EcoVadis, the global independent assessor and sustainability rating provider. These are detailed assessments focused on environment, ethics, labour and human rights, and sustainable procurement. The INEOS Group has been granted a gold medal for all operations worldwide based on the 2021 reporting year. This places the INEOS into the top 8% of companies in the sector, demonstrating an advanced sustainability management system. Our Styrolution Business was awarded Silver Merit status in 2015 in an assessment of its Corporate Social Responsibility program by EcoVadis. Since then, it has improved its EcoVadis score, reaching Gold Merit in 2022. Our INOVYN Business was awarded Gold Merit status in 2018 in an assessment of its Corporate Social Responsibility program by EcoVadis and is rated annually thereafter. We are delighted to have achieved Gold Merit status in 2022 for the fourth consecutive year by EcoVadis with year-on-year improvements.

With its Gear Up strategy, our Styrolution Business aims at being a front-runner in the circular economy and offer sustainable premium products. In 2019, we introduced INEOS Styrolution ECO, our new family of sustainable products. It comprises products made from post-consumer recycled material as well as renewable feedstock and complements our existing strong portfolio of styrenics standard products and specialties. Our aim is to grow our ECO portfolio over time to make more sustainable solutions available on a commercial scale.

Our Styrolution Business is one of the founding members of Styrenics Circular Solutions (SCS), promoting circular solutions in the industry in collaboration with the complete value chain and has committed to enabling a circular economy for styrenics, further improving its resource efficiency and promoting sustainable operations throughout its entire value chain. Our Styrolution Business has also demonstrated the advanced recycling capabilities of PS with the first production of PS from SM made only of depolymerized material. This technology facilitates a full recycling loop for plastics, which we expect to be applicable even to food contact applications.

For ABS Standard, our Styrolution Business has developed mechanically recycled grades containing 50% or 70% comprising post-consumer recycled material that are commercially available today. These products meet the performance and quality levels of virgin materials. Our Styrolution Business has also established co-operations to secure high quality waste for polystyrene and ABS feedstock.

Our Styrolution Business is now offering the integration of renewable feedstock as a replacement for fossil fuel in upstream existing petrochemical installations. In 2020, we launched the world's first specialty styrenics materials made using renewable feedstock within the value chain. This feedstock does not compete with food and does not compete with land use. The renewable feedstock sources are certified by the Roundtable for Sustainable Biomaterials (RSB) or the International Sustainability and Carbon Certification (ISCC) to assess that they are managed and attributed in accordance with their sustainability criteria.

Globally, our Styrolution Business is collaborating with leading technology companies to implement technical and commercial solutions as well as beneficial life cycle assessments (LCA) and product carbon footprints (PCF) to close the loop for styrenics, thereby helping to reduce waste to landfill and incineration. We have proven excellent environmental footprint of our solutions, where the greenhouse gas (GHG) emissions is significantly lower compared with fossil production and has additional significant end-of-life savings.

INOVYN continues to have a pivotal role in the European-wide VinylPlus® voluntary industry initiative. In 2021, VinylPlus achieved 810 kilotons PVC recycling, slightly above on the original target of 800 kilotons. Approximately 7.3 million tons of PVC have now been recycled since the start of the PVC industry voluntary commitments over a 20-year horizon. In 2021 INOVYN was delighted to be a signatory to VinylPlus Pathways 2030, the new 10 year voluntary commitment of the European PVC value chain. The commitment consists of 3 Pathways; Circularity, Decarbonization and minimization of the environmental footprint and Partnerships. Each Pathway has its own set of priorities which consists of 12 action areas and 39 targets. In line with the European Circular Plastics Alliance, which commits to recycle 10 million tons of plastics by 2025, VinylPlus commits to 900 kilotons PVC recycling by 2025 which is proportional to the PVC demand versus other plastics in Europe. Progress does not stop with the VinylPlus initiative as INOVYN is also making key investments to address difficult-to-recycle PVC which cannot be easily recycled by mechanical means. This is being developed by INOVYN under Project Circle. We see closing the loop and ensuring PVC, an intrinsically low carbon polymer, continues to play a vital role in society as paramount to our future success. We are playing an active role in the development of advanced recycling technologies to treat PVC from various post-consumer waste streams and have launched Project Circle to support this development from laboratory scale-up to industrial units. We are confident that with progress on sorting and recycling technologies we will have advanced recycling industrial units on stream before 2030. INOVYN is committed to progressively incorporate in its product mix a significant part of recycled material coming from PVC and plastic recycling as our experience in this exciting technology develops. We are also committed to allocating resources to resolve legacy additives by means of advanced recycling, and are confident it can be achieved.

The Aromatics Business has developed Infinia, an enhanced chemical recycling technology, capable of processing currently unrecyclable forms of Polyethylene Terephthalate (PET) plastic waste by breaking the PET down into its two monomers from which high-quality recycled PET can be produced again. The unique feature of Infinia is that unlike mechanically recycled PET which degrades at the molecular level when recycled, the PET produced by the Aromatics Business's new process will be chemically the same as virgin PET. The business model for Infinia is supported by regulations being introduced in Europe in 2025 which will require PET bottles to be manufactured using at least 25% recycled PET. The quality of PET produced by the Infinia process is expected to position us with a product quality advantage in the market. A pilot plant is has been commissioned at the Aromatics Business's technology center in Naperville U.S. ahead of the construction of the first commercial plant.

In 2017, the Acetyls Business invested in TVUK, which as part of a consortium will build and operate the world's first Tricoya® wood elements acetylation plant at the Saltend Chemicals Park in Hull. In November 2022, the decision was made to exit TVUK in return for newly issued ordinary shares in Accsys Technologies plc. Making safety our first priority.

SUSTAINABILITY GOVERNANCE

The Chief Executive of each Business Division is accountable for development of a strategy and plans to ensure that the business remains sustainable in the longer term. The strategy is reviewed annually with the shareholders. Each business sets targets annually based on its business plan. Progress against targets is reported and reviewed at Executive Committee (EXCO) meetings with the shareholders at least six times per year.

In addition to the above, Business Divisions are subject to INEOS wide targets set by the Shareholders for Safety, Health & Environment, Green House Gas reductions, and, for the Polymers businesses, recycling targets.

In addition to formal governance processes, INEOS operates a Climate and Energy Network (CEN) which helps ensure coordination across all INEOS businesses on carbon, energy and resource matters. Cross business CEN teams share information and best practice on policy, advocacy, external developments, new business opportunities and innovation. The network also assembles data from the different businesses to provide business and INEOS wide views on GHG emissions, energy usage, water usage, and waste. The network has more than 1,000 active members across all businesses.

SUMMARY OF RISKS

Management has in place a number of actions to mitigate against climate and climate related risks, as well as other risks associated with developing legislation on sustainability and reporting. A summary of responses to key risks is summarized below.

PERCEIVED RISKS	ACTIONS
Transition to net zero risks	1. Management has committed to net zero and intermediate targets based on practical business roadmaps which contain actions to reduce GHG emissions whilst sustaining business profitability. 2. Management has identified new business opportunities, e.g. green and blue hydrogen, biobased products and recycled products. 3. Management is investing in technologies for new products such as recycled products and bio-based products to meet growing consumer demand for these lower carbon materials. 4. Management is acquiring more renewable energy and is investing in new assets, technologies, and infrastructure to reduce the carbon footprint of its products in line with evolving customer and consumer demands.
Policy and Legal transition risks	1. Management monitors evolving government policies and regulations, both independently and through its membership of industry associations, to ensure that plans and actions stay ahead of developing legislation. 2. Management has in place strict policies on ethical and legislative matters, and has implemented the appropriate governance and training mechanisms to ensure full compliance.
Market transition risks e.g. changing consumer trends resulting in products and services becoming obsolete	1. Management believes that its current chemical and polymer portfolio provides products which are essential to support the transition to a net zero economy by providing the most sustainable options for a wide number of industrial and consumer applications. 2. Management has set business wide targets consistent with legislation intended to drive the development of a circular economy. 3. Management is investing in technologies for new products such as recycled products and bio-based products to meet growing consumer demand for these materials. 4. Management has a policy for sustainable procurement to ensure that it acquires feedstocks and other materials of increasingly lower carbon footprint. 5. Management is acquiring more renewable energy and is investing in new assets, technologies, and infrastructure to reduce the carbon footprint of its products in line with evolving customer and consumer demands.
Financing risks	1. Management has committed to net zero and intermediate targets based on practical business roadmaps which combine GHG emissions reduction with sustainment of business profitability and addition of new business opportunities, e.g. green and blue hydrogen, biobased products and recycle products. 2. Management has incorporated the forward cost of carbon in Europe and potentially elsewhere into its capital investment decision making. 3. Management aspires to zero accidents in the workplace and has in place the policies targets, controls and audit systems to ensure the highest possible standards with regards to safety and the environment. 4. Management has significantly increased public disclosure on ESG issues, including provision of a detailed and public sustainability report, and has attained favourable ESG assessments from ECOVADIS relative to peers. 5. INEOS is a recognised respondent to CDP.

PERCEIVED RISKS	ACTIONS
Acute physical risks e.g. extreme weather events causing damage to equipment and supply chain disruption	1. Management is assessing risks to operations against three IPCC developed climate change scenarios – high, intermediate and low temperature rises. 2. Management has ensured that equipment and plant is designed to withstand extreme weather conditions as currently expected, and will continue to do so in the future. 3. Management has developed multiple feedstock and sales options to provide resilience to supply chain disruptions.
Reputation transition risks e.g. damage to reputation through failure to transition effectively to a lower-carbon economy	1. Management has announced the target to achieve net zero and is developing intermediate targets based on practical business roadmaps which contain actions to reduce GHG emissions and stay ahead of evolving regulations. 2. Management aspires to zero accidents in the workplace and has in place the policies targets, controls and audit systems to ensure the highest possible standards with regards to safety and the environment. 3. Management has significantly increased public communication and disclosure on targets, progress against targets, and ESG issues, including provision of a detailed and public sustainability report. 4. Management has established strong links with communities around INEOS sites to communicate plans and progress against objectives and invite feedback. 5. Management has submitted the business to detailed ESG assessments from ECOVADIS and received gold rating for the breadth of INEOS companies. 6. INEOS is a recognised respondent to CDP.

Our employees, contractors and on-site logistics personnel are our most valuable asset, which is why workplace safety is and remains our undisputed first priority. We are convinced that being a market leader goes hand-in-hand with an outstanding safety record. We take our responsibility for health, safety, security and environmental ("**HSSE**") matters very seriously and are fully committed to delivering a continually improving performance across all our operations.

We have established a HSSE culture of open dialogue, coaching and trust that reinforces our HSSE performance. We aim to minimize the impact our facilities have on local communities and local environments. This means working in close partnership with community groups and key stakeholders to ensure that we are a responsible neighbor and partner. We strive to meet, and where feasible exceed, strict safety and health performance targets. We publish our performance results locally and nationally, as required. We further strive for continuous improvement of our safety performance and aim to reach our annual overall safety target.

MANAGEMENT

Executive officers and directors of INEOS Limited

INEOS Limited, a company incorporated in the Isle of Man, is our ultimate parent undertaking. INEOS Limited was incorporated on March 24, 2016 and became the ultimate parent undertaking on December 1, 2016.

The following table sets forth the name, age (as of December 31, 2022) and principal position of each of our directors and officers:

Name	Age	Position
James A. Ratcliffe........	70	Chairman
Andrew Currie	67	Member of the Board
John Reece	65	Member of the Board
Graeme Leask	54	Member of the Board
Jim Dawson.................	79	Non-Executive Director of INEOS Capital

James A. Ratcliffe has been the Chairman of INEOS Capital since 1998. Mr. Ratcliffe, who has over 30 years of experience in the chemical industry, is experienced in managing buyouts of chemical companies. In 1992, he led the successful buyout of Inspec Group plc. In 1998, he left Inspec to lead the acquisition of INEOS plc (now INEOS Oxide) from Inspec. Mr. Ratcliffe started his career with Exxon Chemicals before moving to Courtaulds. He then completed his MBA at London Business School before joining Advent International and then Inspec.

Andrew Currie has been a director of INEOS Capital since 1999. He was previously Managing Director, Laporte Performance Chemicals, having served as a director of the Inspec Group from 1994 until the Laporte acquisition of Inspec in 1998. Mr. Currie has a degree in natural sciences from Cambridge University and spent the first 15 years of his career with BP Chemicals in various technical and business management functions.

John Reece joined INEOS Capital as Finance Director in January 2000. He was previously a partner with PricewaterhouseCoopers, where he advised companies in the chemical industry. Mr. Reece has a degree in economics from Cambridge University and is a Chartered Accountant.

Graeme Leask became a director of INEOS Limited in 2022. Mr. Leask joined the Group in 2002 and has been the CFO of IGH since 2006. He previously worked at PricewaterhouseCoopers, where he advised companies in the chemical industry in the United Kingdom and the United States. Mr. Leask has a degree in geography from Oxford University and is a Chartered Accountant.

Jim Dawson became a non-executive director of INEOS Capital in 2005. Dr. Dawson has been serving as a consultant to INEOS since 2001. Dr. Dawson served as a director of Shell International Chemicals until 2000. Dr. Dawson has a first degree in chemistry and a doctorate of philosophy from Oxford University.

INEOS Limited, provides operational management services to us.

All of the members of the board of directors and officers of INEOS Limited have their business address at First Names House, Victoria Road, Douglas, IM2 4DF, Isle of Man.

Executive Committee of the INEOS Quattro

The following table sets forth the name, age (as of the date of this annual report) and principal position of each of the principal Executive Committee members as at December 31, 2022.

Name	Age	Position
Kevin McQuade	66	Chairman, Styrolution & Aromatics
Robert Nevin	64	Chairman, INOVYN & Acetyls
Graeme Leask...	54	Chief Financial Officer

Executive Committee of the Styrolution Business

The Executive Committee is responsible for the day-to-day running of the Styrolution Business and meets on a regular basis to review the Styrolution Business's performance. The following table sets forth the name, age (as of the date of this annual report) and principal position of each of the principal Executive Committee members as at December 31, 2022.

Name	Age	Position
Steve Harrington	54	Chief Executive Officer
Markus Fieseler	58	Chief Financial Officer
Rob Buntinx	54	President, Asia-Pacific
Alexander Walter Glück	60	President, EMEA
Pierre Minguet	53	President, Operations
Greg Fordyce	56	President, Americas

Executive Committee of INOVYN

The Executive Committee of INOVYN is responsible for the day-to-day running of the INOVYN Business and meets on a regular basis to review the INOVYN Business's performance. The following table sets forth the names, ages and principal positions of each of the principal Executive Committee members as at December 31, 2022.

Name	Age	Position
Geir Tuft	56	Chief Executive Officer
David Horrocks	63	Chief Financial Officer
Paul Daniels	56	Operations Director
David De Clerck	43	Procurement Director
Arnaud Valenduc	51	Business Director
Wouter Bleukx	52	Hydrogen Business Director
Tony Moorcroft	64	HR Director

Executive Committee of the Aromatics Business

The Executive Committee of the Aromatics Business is responsible for the day-to-day running of the Aromatics Business and meets on a regular basis to review the Aromatics Business's performance. The following table sets forth the names, ages and principal positions of each of the principal Executive Committee members as at December 31, 2022.

Name	Age	Position
Steve Dossett	56	Chief Executive Officer
Gerry Hepburn	43	Chief Financial Officer
Wouter Van Engelandt	52	Operations Director
Graham Knights	53	Business Director Europe
Bill Zhao	56	Business Director Asia
Edgar Zwanink	50	HR Director

Executive Committee of the Acetyls Business

The Executive Committee of the Acetyls Business is responsible for the day-to-day running of the Acetyls Business and meets on a regular basis to review the Acetyls Business's performance. The following table sets forth the names, ages and principal positions of each of the principal Executive Committee members as at December 31, 2022.

Name	Age	Position
David Brooks	56	Chief Executive Officer
Gareth Anderson	49	Chief Financial Officer
Graeme Stewart	57	Operations Director
Declan Sealy	53	Business Director
Alison Mills	48	HR Director

Governance Structure of the Group

We utilize the same governance structure as has been successfully employed by INEOS for many years. The Styrolution Business, INOVYN, the Aromatics Business and the Acetyls Business are run independently with separate executive management teams and each business is reported separately in our accounts. The executive management teams of each of the businesses are led by the Chief Executive Officer and will be accountable for all business activities. The Chief Executive Officer reports to the designated Chairperson who represents the interests of the Group's shareholders.

Executive Committee meetings are held every four to six weeks and are chaired by the Chairperson and attended by the executive management teams and shareholders.

Governance matters are managed consistent with the governance practices of INEOS Group. Environmental, social and governance matters are covered at each Executive Committee meeting, starting with health, safety and environment. Day to day management of compliance and related matters are overseen by a compliance manager who reports to the executive management teams of each of the four businesses. Overall governance and assurance to the shareholders are provided by Group Treasury and Group Legal Compliance.

PRINCIPAL SHAREHOLDERS

As of December 31, 2022, all of the issued share capital of the Parent was held directly by INEOS Industries Holdings Limited. The issued share capital of INEOS Industries Holdings Limited is held by INEOS Industries Limited. The issued share capital of INEOS Industries Limited is held by INEOS Holdings AG. The issued share capital of INEOS Holdings AG is held by INEOS AG. Of the issued share capital of INEOS AG, 96.7% is held by INEOS Limited and 3.3% directly by Andrew Currie and John Reece. INEOS Limited became the ultimate parent undertaking of the Group on December 1, 2016. See also "*Management*" and "*Certain Relationships and Related Party Transactions*."

The following table sets forth information regarding the ownership of INEOS Limited's share capital, as of December 31, 2022, by the following:

- each person or group known by us to be the owner of 5% or more of the share capital of INEOS Limited; and
- all directors of INEOS Limited.

	Number of Ordinary Shares	Number of Preferred Tracker Shares	Percentage of Total INEOS Limited Share Capital
James Ratcliffe	2,295,391,680	3,397,127	61.84%
Andrew Currie	711,501,880	-	19.14%
John Reece	707,106,440	-	19.02%
TOTAL	3,714,000,000	3,397,127	100.00%

CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

We enter into transactions with certain related parties or our affiliates from time to time and in the ordinary course of our business. These transactions include, among others, the purchase of feedstock. We believe these agreements are on terms no more favorable to the related parties or our affiliates than what they would expect to negotiate with disinterested third parties.

Below is a summary of certain relationships with the INEOS Group and of our most relevant transactions between the Group and related parties.

Relationship with INEOS Limited and INEOS AG

James A. Ratcliffe, Andrew Currie and John Reece are shareholders in INEOS Limited, which provides operational management services to the Group through a management services agreement. These services are provided to the Group through a management services agreement with INEOS AG.

For the year ended December 31, 2022, INEOS Limited management fees of €59.5 million were charged to the Parent's income statement. For the year ended December 31, 2021, INEOS AG management fees of €55.3 million were charged to the Parent's income statement. There were no outstanding balances owed to INEOS AG or INEOS Limited as of December 31, 2022 and 2021.

James A. Ratcliffe, Andrew Currie and John Reece control INEOS Industries (and therefore the Parent) through their shareholdings in INEOS Limited. Messrs. Ratcliffe, Currie and Reece, through INEOS AG, also control (i) INEOS Group Holdings SA, which produces a range of chemicals including petrochemicals, (ii) INEOS Industries Limited, a portfolio of businesses, including the Group, INEOS Olefins & Polymers UK and INEOS Upstream Limited, an oil and gas exploration, production and transportation business, (iii) INEOS Enterprises Holdings Limited, a portfolio of businesses, including Pigments, Composites and Solvents and (iv) INEOS Technologies (Holdings) Ltd., which operates an electrolysis technology business.

Parent entities and their subsidiaries not included within the Group

Material trading and non-trading transactions by the Group with the entities controlled by INEOS Limited are as follows:

	Transaction value		**Balance outstanding**	
	Twelve-Months Period Ended		**Period Ended**	
	December 31, 2022	**December 31, 2021**	**December 31, 2022**	**December 31, 2021**
	(€ in millions)			
Sale of products	338.1	323.6	-	-
Purchase of raw materials	(1,488.1)	(1,229.3)	-	-
Cost recoveries	117.3	89.3	-	-
Services received	(223.9)	(139.7)	-	-
Net interest	(1.8)	(1.7)	-	-
Trade and other receivables	-	-	97.0	62.1
Loans receivable	-	-	500.8	-
Trade and other payables	-	-	(172.4)	(264.4)
Interest-bearing loans and borrowings	-	-	(41.7)	(39.8)

In general, all outstanding balances with INEOS companies are priced based on contractual arrangements and are to be settled in cash within two months of the reporting date, with the exception of the interest-bearing loans and borrowings. None of the balances are secured. The transactions were made on terms equivalent to those that prevail in arm's length transactions. There were no provisions for doubtful debt related to these entities as at 31 December 2022 (2021: €nil).

Jointly controlled entities and associated undertakings held within the Group

Material trading and non-trading transactions with these entities during the period were as follows:

	Transaction value		Balance outstanding	
	Twelve-Months Period Ended		Period Ended	
	December 31, 2022	**December 31, 2021**	**December 31, 2022**	**December 31, 2021**
	(€ in millions)			
Sale of products	88.6	79.8	-	-
Purchase of raw materials	(553.0)	(570.5)	-	-
Cost recoveries	236.1	191.5	-	-
Services received	(0.4)	-	-	-
Net interest	2.1	2.0	-	-
Trade and other receivables	-	-	77.8	46.7
Trade and other payables	-	-	(67.1)	(164.4)
Interest-bearing loans and borrowings	-	-	75.1	14.4

In general, all outstanding balances with these related parties are priced based on contractual arrangements and are to be settled in cash within two months of the reporting date with the exception of the interest-bearing loans and borrowings. None of the balances are secured. The transactions were made on terms equivalent to those that prevail in arm's length transactions. There were no provisions for doubtful debt related to these entities as at 31 December 2022 (2021: €nil).

Entities controlled by the shareholders of INEOS Limited

The partners of INEOS Capital Partners own a controlling interest in the share capital of INEOS Limited and Screencondor Limited. During the year ended December 31, 2021, the Group made no sales or purchases with these companies (2021: €nil). As at December 31, 2022, amounts owed by Screencondor Limited were €1.2 million (2021: €1.2 million).

Relationship with related parties

Many manufacturing sites in the INOVYN Business have ethylene supply agreements with indirect subsidiaries of INEOS Limited, representing more than 70% of total supplies. The INOVYN Business has an agreement with INEOS Olefins Norge A.S. to supply its Rafnes and Stenungsund sites with a total of approximately 280 kilotons of ethylene per year on contracts running to the end of 2023. The INOVYN Business's Jemeppe and Rheinberg have ethylene contracts totaling 220 kilotons per annum with the Olefins and Polymers division of INEOS, 150 kilotons of which is sourced from the U.S. under a contract running to the end of 2024. At its Runcorn facility, the INOVYN Business's U.K. ethylene requirements for the manufacture of EDC is sourced by INEOS Commercial Services Limited. The prices under all of the aforementioned agreements are generated by reference to market indicators, in particular, the monthly contract price for ethylene quoted in ICIS ethylene pricing reports and are on terms no less favorable to the INOVYN Business than what we would expect to negotiate with disinterested third parties.

The INOVYN Business's cellrooms in various countries are supplied with anodes, cathodes and membranes from INEOS Technologies Limited, and INOVYN sources oxychlorination catalysts and additives used in the manufacture of EDC and PVC from INEOS Technologies (Vinyls) Limited.

INOVYN has trading agreements in place for the supply of general purpose PVC, caustic soda and hydrochloric acid to the wider INEOS group.

At Lillo in Antwerp, Belgium, the INOVYN Business shares the manufacturing site with the Olefins and Polymers Europe division of INEOS Group and various recharges of utilities and services are made between both businesses as a consequence. For example, the INOVYN Business supplies the Olefins and Polymers division with electricity and water, and provides various site services such as fire brigade, pipe maintenance and internal railway. Conversely, the INOVYN Business is supplied with nitrogen and receives wastewater treatment and ambulance services. At Rafnes in Norway, the

INOVYN Business has similar arrangements with the INEOS Olefins & Polymers Europe business who also occupy the site.

Where possible, the INOVYN Business also sources certain production inputs and other products, such as information technology licenses, from certain affiliates in the INEOS Group in order to obtain volume rebates that it might not be entitled to if it purchased the inputs or products on its own. In particular, INOVYN's information technology has historically been highly integrated with the INEOS Group. The INOVYN Business also licenses certain of the intellectual property used in its business from certain of its affiliates in the INEOS Group.

The INOVYN Business owns a 60% shareholding in Runcorn TPS which operates a Combined Heat and Power Energy from Waste plant in the United Kingdom, from which INOVYN purchases both steam and electricity for the benefit of its Runcorn manufacturing operations. The INOVYN Business also derives income from the leasing of land to Runcorn TPS, and from the provision of management and administrative services to Runcorn TPS.

The Acetyls Businesses supply acetic acid to other parts of the INEOS group mainly to the INEOS EtAc plant in Hull and to the INEOS esters facilities in Antwerp and between the Aromatics and Acetyls Businesses. The INEOS EtAc plant in Hull and the esters facilities in Antwerp has historically relied on third-party shipping imports of acetic acid in their production processes. In addition, the Acetyls Business has historically sold a portion of its acetic acid production at relatively low margins via deep-sea exports. As with standard INEOS practice, these relationships will be based on references to market indicators and are on terms no less favorable to the Acetyls Business than what would be expected if negotiated with disinterested third parties.

The Styrolution Business has agreements for sales and/or purchase of goods and services with related INEOS businesses, primarily for raw materials and utilities. In addition, INEOS Styrolution acts as exclusive distributor for INEOS ABS (U.S.) in Addyston, Ohio, and has been the one face to the market for all its products since 2015. INEOS Styrolution supplies INEOS ABS (U.S.) LLC with styrene monomer for the ABS production and resales finished products to external parties. Significant risks and rewards associated with selling the finished goods as well as the inventory risk remain with INEOS ABS (U.S.) LLC, while INEOS Styrolution receives a distribution fee.

Service (Level) Agreements

Various service agreements and service-level agreements exist between us and members of the INEOS Group. These agreements cover services such as information technology, office use, management services and project services. Such services are rendered on a cost-plus basis. These agreements generally permit the recipient and the service provider the right to continue or terminate services with an agreed notice period, though the service provider does not have the right to terminate if no reasonable alternative service provider exists.

Raw Materials Purchase Agreements

We have several purchase agreements with the INEOS Group governing the purchase of raw materials. The agreements are usually based on similar forms, with jurisdiction- and site-specific differences, as well as certain commercial terms set out in separate term sheets. Absent certain extraordinary termination events, our strategic raw material contracts may generally not be terminated prior to the expiry of the term. These agreements require agreed notice periods prior to termination. Purchase volume levels are set forth in the agreements and unit prices are determined by market price indicators. These indicators are based on arm's-length principles and are in line with market benchmarks.

DESCRIPTION OF CERTAIN INDEBTEDNESS

The following summary of provisions of the documents listed below governing certain of our indebtedness does not purport to be complete and is subject to, and qualified in its entirety by reference to, the underlying documents.

2014 Term Loan Facilities Agreement

Overview

The 2014 Term Loan Facilities Agreement provides for term loans (the "**2027 Term Loans**") to INEOS Styrolution US Holding LLC ("**US Finco**") denominated in dollars (the "**2027 Dollar Term Loans**") and to INEOS Styrolution Group GmbH ("**ISGG**" and, together with US Finco, the "**2027 Term Loan Borrowers**") denominated in euro (the "**2027 Euro Term Loans**" and, together with the 2027 Dollar Term Loans, the "**2027 Term Loans**"), in an aggregate principal amount of $202,278,146.71 and €450,000,000.00, respectively. The 2027 Dollar Term Loans and the 2027 Euro Term Loans were made in a single drawing on January 31, 2020. At December 31, 2022, $196.7 million and €450.0 million were outstanding under the 2027 Dollar Term Loans and the 2027 Euro Term Loans, respectively.

Unless defined otherwise, capitalized terms used in this Section "—*2014 Term Loan Facilities Agreement*" have the meaning assigned to them in the 2014 Term Loan Facilities Agreement.

Interest and Fees

The outstanding 2027 Dollar Term Loans bear interest at a rate per annum equal to, at the option of US Finco, (a) the applicable Term SOFR plus 0.10% (subject to a floor of 0% per annum) plus the Applicable Margin specified below for such loans or (b) the Alternate Base Rate (subject to a floor of 1.00% per annum) plus the Applicable Margin specified below for such loans (the "**ABR Loans**"). The outstanding 2027 Euro Term Loans bear interest at a rate per annum equal to EURIBOR (subject to a floor of 0.50% per annum) plus the Applicable Margin specified below for such loans (together with the 2027 Dollar Term Loans bearing interest by reference to Term SOFR, the "**Term Benchmark Loans**").

The Applicable Margin is:

- in the case of 2027 Dollar Term Loans bearing interest at a rate determined by reference to Term SOFR, 2.00%;
- in the case of 2027 Dollar Term Loans bearing interest at a rate determined by reference to the Alternate Base Rate, 1.00%; and
- in the case of 2027 Euro Term Loans, 2.00%.

The Alternate Base Rate is a rate per annum determined as the highest of (a) a specified prime rate, (b) the Federal Funds rate plus 0.50% and (c) Term SOFR for an interest period of one month plus 0.10% (subject to a floor of 0% per annum) plus 1.00%.

Overdue amounts owing under the 2014 Term Loan Facilities Agreement bear interest (a) in the case of overdue principal or overdue interest, at the interest rate that would otherwise be applicable plus 2.00% per annum and (b) in the case of any overdue fee or premium, at the interest rate that would apply to ABR Loans plus 2.00% per annum.

Security and Guarantees

The 2027 Term Loans share the same security package as the 2027 Senior Secured Notes, the 2026 Senior Secured Notes, the 2026 Term Loans, the 2030 Term Loans and certain hedging liabilities (including certain metals arrangements) and certain cash management liabilities. The collateral includes:

Belgium

• share pledges in respect of the shares of the Guarantors organized in Belgium; and

• security interests in respect of certain receivables and the business assets (*handelszaak/fonds de commerce*) of certain of the Guarantors organized in Belgium;

Canada

• a pledge in respect of the shares of each Guarantor organized in Canada; and

• security interests over substantially all present and after-acquired personal property owned by each Guarantor organized in Canada and proceeds thereof;

England

• share charges in respect of the shares of certain of the Guarantors incorporated in England and Wales;

• charges over certain bank accounts located in England and Wales; and

• debentures over all or substantially all of the assets of certain of the Guarantors incorporated in England and Wales;

France

• share pledges (*nantissements de comptes de titres financiers*) in respect of the shares of INOVYN France SAS and INOVYN Olefines France SAS held by Kerling Newco 1 Limited;

• pledges over certain bank accounts (*nantissements de comptes bancaires*) of INOVYN France SAS and INOVYN Olefines France SAS located in France; and

• pledges over certain intra-group receivables (*nantissements de créances intragroupes*) of INOVYN France SAS and INOVYN Olefines France SAS;

Germany

• share pledges in respect of the shares of certain of the Guarantors organized in Germany;

• security interests in certain intercompany receivables owed from time to time to, or held by, certain of the Guarantors organized in Germany;

• security interests in certain fixed movable assets of certain Guarantors organized in Germany;

• a pledge over certain German bank accounts held by certain of the Guarantors; and

• security interests in certain intellectual property rights held by certain Guarantors organized in Germany;

Hong Kong

• a share charge in respect of the shares in the Guarantor organized in Hong Kong; and

• security interests over substantially all assets of the Guarantor organized in Hong Kong;

Korea

• a share pledge in respect of the shares of the Guarantor organized in Korea; and

• a Korean law pledge over certain equity interests owned by the Guarantor organized in Korea;

Mexico

• a first-ranking share pledge in respect of the shares of the Guarantor organized in Mexico; and

• a first-ranking non-possessory pledge (*prenda sin transmisión de posesión*) over substantially all moveable assets and inventory owned by the Guarantor organized in Mexico;

Norway

• a share pledge in respect of the shares of the Guarantor organized in Norway;

• security interests over certain assets owned by and certain bank accounts of the Guarantor organized in Norway; and

• security interests over the bank accounts located in Norway of the Guarantor incorporated in Sweden; and

Singapore

• a share charge creating security over the shares in the Guarantor incorporated under the laws of Singapore; and

• a debenture creating security over all the assets (with certain agreed exceptions) of the Guarantor incorporated under the laws of Singapore;

Sweden

• a share pledge in respect of the shares of the Guarantor incorporated in Sweden; and

• a pledge over a real estate mortgage certificate in respect of real property owned by the Guarantor incorporated in Sweden;

Switzerland

• a share pledge in respect of the shares of the Guarantor organized in Switzerland; and

• an undertaking to pledge, following an Event of Default, certain assets owned by the Guarantor organized in Switzerland; and

U.S.

• substantially all UCC Article 9 property (subject to certain exceptions) owned by certain Guarantors organized in Delaware;

• a pledge over certain LLC interests;

• an account pledge over a certain bank account;

• security interests in certain intellectual property owned by certain Guarantors organized in Delaware; and

• a mortgage over certain property of a certain Guarantor organized in Delaware.

The obligations under the 2027 Term Loans are jointly and severally guaranteed on a senior basis by the 2027 Term Loan Borrowers, the Parent, the Company and certain other subsidiaries of the Parent (collectively, the "**Guarantors**").

No later than 150 days after the end of the financial year of INEOS Quattro Holdings Limited (the "**Parent**") (or such longer period as the administrative agent under the 2014 Term Loan Facilities Agreement may agree to), (i) the Consolidated Adjusted EBITDA of the 2027 Term Loan Borrowers and Guarantors must be at least 85% of the Consolidated Adjusted EBITDA of the Parent, INEOS Quattro Financing Limited (the "**Company**") and its restricted subsidiaries (the "**Financial Group**") and (ii) the Total Assets of the 2027 Term Loan Borrowers and Guarantors must be at least 85% of the Total Assets of the Financial Group, in each case subject to certain exceptions.

Covenants

Subject to certain agreed exceptions, the 2014 Term Loan Facilities Agreement contains negative covenants substantially similar to the negative covenants applicable to the 2027 Senior Secured Notes and the 2026 Senior Secured Notes, including covenants restricting the ability of the 2027 Term Loan Borrowers, the Company, the Restricted Subsidiaries of the Company and, in certain cases, the Parent to:

- incur or guarantee additional indebtedness;
- layer debt;
- make restricted payments, including dividends or other distributions;
- prepay or redeem subordinated debt or equity;

- make certain investments;
- create or incur certain liens;
- transfer, lease or sell certain assets;
- enter into arrangements that impose restrictions on the ability of restricted subsidiaries to pay dividends or make other payments to the Company;
- engage in certain transactions with affiliates;
- designate unrestricted subsidiaries;
- consolidate, merge or transfer all or substantially all assets; and
- impair the security interests for the benefit of the 2027 Term Loan lenders.

The Parent is also subject to more stringent restrictions upon its activities (for example, in relation to the ownership of assets and the liabilities that it may incur).

The 2014 Term Loan Facilities Agreement also contains customary affirmative covenants, including covenants relating to:

- the provision of financial statements and certain other information and notices;
- inspections;
- maintenance of certain insurance;
- payment of taxes;
- preservation of existence and consolidated corporate franchises;
- compliance with laws (including environmental laws);
- anti-corruption laws and applicable sanctions;
- certain ERISA and pension matters;
- maintenance of certain properties;
- changes in fiscal years and fiscal quarters;
- additional guarantors and security;
- use of proceeds;
- further assurances;
- use of commercially reasonable efforts to maintain certain ratings;
- auditors, books and records; and
- certain other covenants, including a covenant relating to the Intercreditor Agreement and additional intercreditor agreements.

The 2014 Term Loan Facilities Agreement does not contain any financial maintenance covenants.

Repayment

The 2027 Dollar Term Loans are to be repaid in equal quarterly installments, in aggregate annual amounts equal to 1% of the original principal amount of the 2027 Dollar Term Loans (subject to adjustment as set forth below). The 2027 Euro Term Loans and the balance of the 2027 Dollar Term Loans are payable, subject to certain exceptions, on January 31, 2027. No amounts repaid by the 2027 Term Loan Borrowers in respect of the 2027 Term Loans may be reborrowed.

Prepayments

Mandatory prepayments of the 2027 Term Loans are required in an amount equal to:

- starting with the financial year ended on December 31, 2020, 50% (reduced to 25% when the Consolidated Total Net Leverage Ratio is less than or equal to 3.00 to 1.00 but greater than 2.50 to 1.00 and 0% when the Consolidated Total Net Leverage Ratio is less than or equal to 2.50 to 1.00) of annual excess cash flow of the Financial Group (subject to certain adjustments) (such amount the "**2027 Term Loan ECF Prepayment Amount**");

- 100% of the net cash proceeds from certain sales or other dispositions of material assets outside the ordinary course of business (subject to reinvestment rights and repayment of certain other senior debt); and

- 100% of the net cash proceeds from any issuance or incurrence of debt, other than debt permitted under the 2014 Term Loan Facilities Agreement.

All mandatory prepayments of the 2027 Term Loans will be made without premium or penalty (except for reimbursement of breakage and redeployment costs in the case of Term Benchmark Loans) and will be applied in such order as the applicable 2027 Term Loan Borrower may specify (or, absent such specification, in direct order of maturity). If, at the time any such mandatory prepayment of 2027 Term Loans is required, the Company or any of its Restricted Subsidiaries is required to prepay or repurchase (or offer to prepay or repurchase) any other Senior Secured Indebtedness with any portion of the 2027 Term Loan ECF Prepayment Amount pursuant to the terms of such other Senior Secured Indebtedness, then the applicable 2027 Term Loan Borrowers may apply such portion of the 2027 Term Loan ECF Prepayment Amount on a *pro rata* basis (subject to certain requirements and exceptions) to the prepayment or repurchase of such other Senior Secured Indebtedness and the amount of the prepayment of the 2027 Term Loans that would otherwise have been required.

Voluntary prepayments of the 2027 Term Loans will be permitted without premium or penalty (except for reimbursement of breakage and redeployment costs in the case of Term Benchmark Loans) and will be applied to the remaining scheduled amortization installments of principal of the 2027 Term Loans as directed by the 2027 Term Loan Borrowers (or, absent such specification, in direct order of maturity).

Events of Default

The 2014 Term Loan Facilities Agreement sets out certain events of default, the occurrence of which would allow the lenders to accelerate all outstanding loans, including, among other events and subject in certain cases to agreed to grace periods, thresholds and other qualifications:

- non-payment of amounts due under the 2027 Term Loans or under the other Senior Finance Documents;

- breach of covenants;

- inaccuracy of representations and warranties in any material respect;

- cross defaults to other indebtedness and certain judgment defaults (except those related to breach of financial covenants in such other indebtedness);

- invalidity or unlawfulness of the 2014 Term Loan Facilities Agreement and other Senior Finance Documents;

- certain bankruptcy and insolvency events and proceedings;

- the occurrence of certain ERISA-related events;

- the occurrence of a customary change of control; and

- certain breaches of the Intercreditor Agreement and related documents.

Miscellaneous

The 2014 Term Loan Facilities Agreement permits the 2027 Term Loan Borrowers to request the establishment of one or more additional tranches of term loans in principal amounts of not less than $25 million (or, if in euro, €25 million) individually, subject to certain conditions specified in the 2014 Term Loan Facilities Agreement.

The 2014 Term Loan Facilities Agreement permits the 2027 Term Loan Borrowers to request extensions of the final maturity of all or a portion of the 2027 Term Loans and, in that connection, there may be an increase in the interest rates and/or fees payable with respect to the extended 2027 Term Loans. Such extensions shall be subject to certain conditions described in the 2014 Term Loan Facilities Agreement.

The 2014 Term Loan Facilities Agreement contains customary "yank-a-bank" provisions allowing the 2027 Term Loan Borrowers to replace a lender in circumstances where such lender (a) is a non-consenting lender in connection with amendments and waivers requiring the consent of all lenders or all affected lenders so long as the required lenders have consented to such amendments or waivers, (b) requests to be compensated for increased costs, taxes and similar items or (c) is a defaulting lender.

The 2014 Term Loan Facilities Agreement contains customary loan buyback provisions, which will permit the Borrowers or affiliates to purchase 2027 Term Loans from lenders, subject to certain conditions, including, in the case of purchases by the Borrowers, a requirement that the loans purchased are automatically and permanently cancelled.

The 2014 Term Loan Facilities Agreement contains customary conversion provisions, which allow the lenders or the administrative agent, as applicable, to establish an alternate rate of interest to Term SOFR or EURIBOR in certain circumstances such as when (i) the administrative agent determines that the relevant interest benchmark is no longer available, (ii) the lenders incur increased costs or reductions in the amounts received or receivable with respect to any Term Benchmark Loan or (iii) the making or continuance of any Term Benchmark Loan becomes unlawful.

The 2014 Term Loan Facilities Agreement is governed by New York law.

2020 Term Loan Facilities Agreement

Overview

The 2020 Term Loan Facilities Agreement provides for (i) term loans B maturing in 2026 to INEOS US Petrochem LLC (the "**US Borrower**") denominated in dollars (the "**2026 Dollar Term Loans**") and to INEOS Quattro Holdings UK Limited (formerly INEOS 226 Limited) (the "**U.K. Borrower**" and, together with the US Borrower, the "**TL Borrowers**") denominated in euro (the "**2026 Euro Term Loans**" and, together with the 2026 Dollar Term Loans, the "**2026 Term Loans**"), in an aggregate principal amount of $2,000.0 million and €1,500.0 million, respectively; and (ii) term loans B maturing in 2030 to the US Borrower denominated in dollars (the "**2030 Dollar Term Loans**" and, together with the 2026 Dollar Term Loans, the "**Dollar Term Loans**") and to the UK Borrower denominated in euro (the "**2030 Euro Term Loans**" and, together with the 2030 Dollar Term Loans, the "**2030 Term Loans**"; the 2026 Term Loans and the 2030 Term Loans together, the "**Term Loans**"), in an aggregate principal amount of $500.0 million and €375.0 million, respectively.

On January 29, 2021, €180.0 million outstanding principal amount of term loans A maturing in 2025, which had been borrowed under the 2020 Term Loan Facilities Agreement, were repaid. On May 31, 2022, €120.0 million and $140 million outstanding principal amount of term loans A maturing in 2023 and $210 million outstanding principal amount of term loans A maturing in 2025, all of which had been borrowed under the 2020 Term Loan Facilities Agreement, were repaid. In addition, a $300.0 million revolving credit facility maturing in 2023 under the 2020 Term Loan Facilities Agreement was canceled in full on September 13, 2021.

The 2026 Term Loans were made in a single drawing on January 29, 2021. At December 31, 2022, $1,970.0 million and €1,500.0 million were outstanding under the 2026 Dollar Term Loans and the 2026 Euro Term Loans, respectively.

The 2030 Term Loans were made in a single drawing on March 14, 2023.

Unless defined otherwise, capitalized terms used in this Section "—*2020 Term Loan Facilities Agreement*" have the meaning assigned to them in the 2020 Term Loan Facilities Agreement.

Interest and Fees

The dollar-denominated Term Loans bear interest at a rate per annum equal to, at the option of the applicable TL Borrower, (a) applicable Term SOFR (plus certain credit spread adjustments between 0.11448% and 0.71513% and subject to a floor of 0.50% per annum in case of the 2026 Dollar Term Loans and plus a credit spread adjustment of 0.10% and subject to a floor of 0% per annum in all other cases) plus the Applicable Margin specified below for such loans or (b) the Alternate Base Rate (subject to a floor of 1.50% per annum in case of the 2026 Dollar Term Loans and 1.00% per annum in all other cases) plus the Applicable Margin specified below for such loans. The Term Loans denominated in euro bear interest at a rate per annum equal to EURIBOR (subject to a floor of 0% per annum) plus the Applicable Margin specified below for such loans (together with the Dollar Term Loans bearing interest by reference to Term SOFR, the "**Term Benchmark Loans**").

As of December 31, 2022, the Applicable Margin was:

- in the case of 2026 Dollar Term Loans bearing interest at a rate determined by reference to the Alternate Base Rate, 1.75%; and

- in the case of 2026 Dollar Term Loans bearing interest at a rate determined by reference to LIBOR and 2026 Euro Term Loans, 2.75%.

As of December 31, 2022, all of the 2026 Dollar Term Loans bore interest at a rate determined by reference to LIBOR.

As of the date of this annual report, the Applicable Margin is:

- in the case of 2026 Dollar Term Loans bearing interest at a rate determined by reference to the Alternate Base Rate, 1.75%;

- in the case of 2026 Dollar Term Loans bearing interest at a rate determined by reference to Term SOFR and 2026 Euro Term Loans, 2.75%;

- in the case of 2030 Dollar Term Loans bearing interest at a rate determined by reference to the Alternate Base Rate, 2.75%;

- in the case of 2030 Dollar Term Loans bearing interest at a rate determined by reference to Term SOFR, 3.75%; and

- in the case of 2030 Euro Term Loans, 4.00%.

The Alternate Base Rate will be a rate per annum determined as the highest of (a) a specified prime rate, (b) the Federal Funds rate plus 0.50% and (c) Term SOFR for an interest period of one month (subject to a floor of 0.50% per annum in case of the 2026 Dollar Term Loans and 0% per annum in all other cases) plus 1.00%.

Overdue amounts owing under the 2020 Term Loan Facilities Agreement bear interest (a) in the case of overdue principal or overdue interest, at the interest rate that would otherwise be applicable plus 2.00% per annum and (b) in the case of any overdue fee or premium, at the interest rate that would apply to Revolving Loans bearing interest at a rate determined by reference to the Alternate Base Rate plus 2.00% per annum.

Security and Guarantees

The 2026 Term Loans and the 2030 Term Loans share the same security package as the 2027 Term Loans, the 2026 Senior Secured Notes and the 2027 Senior Secured Notes and certain hedging liabilities (including certain metals arrangements) and certain cash management liabilities.

The obligations under the 2026 Term Loans and the 2030 Term Loans are jointly and severally guaranteed on a senior basis by the TL Borrowers and the Guarantors.

No later than 150 days after the end of the Parent's financial year (210 days after the end of the fiscal year ended December 31, 2020), commencing with the financial year ended on December 31, 2020 (or such longer period as the administrative agent under the 2020 Term Loan Facilities Agreement may agree to), (i) the Consolidated Adjusted EBITDA of the TL Borrowers and the Guarantors must be at least 85% of the Consolidated Adjusted EBITDA of the Financial Group and (ii) the Total Assets of the TL Borrowers and the Guarantors must be at least 85% of the Total Assets of the Financial Group, in each case subject to certain exceptions.

Covenants

Subject to certain agreed exceptions, the 2020 Term Loan Facilities Agreement contains negative covenants substantially similar to the negative covenants applicable to the 2027 Senior Secured Notes, the 2026 Senior Secured Notes and the 2014 Term Loan Facilities Agreement, including covenants restricting the ability of the TL Borrowers, the Company, the Restricted Subsidiaries of the Company and, in certain cases, the Parent, to:

- incur or guarantee additional indebtedness;
- layer debt;
- make restricted payments, including dividends or other distributions;
- prepay or redeem subordinated debt or equity;
- make certain investments;
- create or incur certain liens;
- transfer, lease or sell certain assets;
- enter into arrangements that impose restrictions on the ability of restricted subsidiaries to pay dividends or make other payments to the Company;
- engage in certain transactions with affiliates;
- designate unrestricted subsidiaries;
- consolidate, merge or transfer all or substantially all assets; and
- impair the security interests for the benefit of the lenders under the 2020 Term Loan Facilities Agreement.

The Parent is also subject to more stringent restrictions upon its activities (for example, in relation to the ownership of assets and the liabilities that it may incur).

The 2020 Term Loan Facilities Agreement also contains customary affirmative covenants, including covenants relating to:

- the provision of financial statements and certain other information and notices;
- inspections;
- maintenance of certain insurance;
- payment of taxes;
- preservation of existence and consolidated corporate franchises;
- compliance with laws (including environmental laws);
- anti-corruption laws and applicable sanctions;
- certain ERISA and pension matters;
- maintenance of certain properties;
- changes in fiscal years and fiscal quarters;
- additional guarantors and security;
- use of proceeds;

- further assurances;
- use of commercially reasonable efforts to maintain certain ratings;
- auditors, books and records; and
- certain other covenants, including a covenant relating to the Intercreditor Agreement and additional intercreditor agreements.

Repayment

The 2026 Dollar Term Loans and the 2030 Dollar Term Loans are to be repaid in quarterly installments beginning on September 30, 2021 and September 30, 2023, respectively, in aggregate principal amounts equal to 0.25% of the original aggregate principal amount of the 2026 Dollar Term Loans and the 2030 Dollar Term Loans, respectively (subject to adjustment as set forth below). The 2026 Euro Term Loans and the balance of the 2026 Dollar Term Loans are payable, subject to certain exceptions, on January 15, 2026. The 2030 Euro Term Loans and the balance of the 2030 Dollar Term Loans are payable, subject to certain exceptions, on March 14, 2030. No amounts repaid by the TL Borrowers in respect of the Term Loans may be reborrowed.

Prepayments

Mandatory prepayments of the Term Loans will be required (subject to certain exceptions) in an amount equal to:

- 50% (reduced to 25% if the Consolidated Total Net Leverage Ratio is less than or equal to 3.25 to 1.00 but greater than 2.75 to 1.00 and 0% if the Consolidated Total Net Leverage Ratio is less than or equal to 2.75 to 1.00) of annual excess cash flow of the Financial Group (subject to certain adjustments) (such amount, the "**ECF Prepayment Amount**");
- 100% of the net cash proceeds from certain sales or other dispositions of material assets outside the ordinary course of business (subject to reinvestment rights and repayment of certain other senior debt); and
- 100% of the net cash proceeds from any issuance or incurrence of debt, other than debt permitted under the 2020 Term Loan Facilities Agreement.

All mandatory prepayments of the Term Loans will be applied ratably among the classes of Term Loans. All mandatory prepayments of the Term Loans will be made without premium or penalty (except for reimbursement of breakage and certain redeployment costs) and will be applied in such order as the applicable TL Borrower may specify (or, absent such specification, in direct order of maturity). If, at the time any such mandatory prepayment of the Term Loans is required, the Company or any of its Restricted Subsidiaries is required to prepay or repurchase (or offer to prepay or repurchase) any other Senior Secured Indebtedness with any portion of the ECF Prepayment Amount pursuant to the terms of such other Senior Secured Indebtedness, then the applicable TL Borrowers may apply such portion of the ECF Prepayment Amount on a *pro rata* basis (subject to certain requirements and exceptions) to the prepayment or repurchase of such other Senior Secured Indebtedness and the amount of the prepayment of the Term Loans that would otherwise have been required.

Voluntary prepayments of the Term Loans will be permitted without premium or penalty (except for reimbursement of breakage and certain redeployment costs and, in respect to the 2030 Term Loans, in case of any Repricing Transaction on or prior to March 14, 2024, a 1.00% prepayment premium) and will be applied to the remaining scheduled amortization installments of principal of the Term Loans as directed by the TL Borrowers (or, absent such specification, in direct order of maturity).

Events of Default

The 2020 Term Loan Facilities Agreement sets out certain events of default, the occurrence of which would allow the lenders to accelerate all outstanding loans, including, among other events and subject in certain cases to agree to grace periods, thresholds and other qualifications:

- non-payment of amounts due under the 2020 Term Loan Facilities Agreement or under the other Senior Finance Documents;
- breach of covenants;
- inaccuracy of representations and warranties in any material respect;

- cross defaults to other indebtedness and certain judgment defaults (except related to breach of financial covenants in such other indebtedness);
- invalidity or unlawfulness of the 2020 Term Loan Facilities Agreement and other Senior Finance Documents;
- certain bankruptcy and insolvency events and proceedings;
- the occurrence of certain ERISA-related events;
- the occurrence of a customary change of control; and
- certain breaches of the Intercreditor Agreement and related documents.

Miscellaneous

The 2020 Term Loan Facilities Agreement will permit the TL Borrowers and such other borrowers as may be designated from time to time under the 2020 Term Loan Facilities Agreement to request the establishment of one or more additional tranches of term loans ("**Incremental Term Loans**") or revolving commitments in principal amounts of not less than $25 million (or, if in euro, €25 million) individually, subject to certain conditions specified in the 2020 Term Loan Facilities Agreement.

The 2020 Term Loan Facilities Agreement permits the TL Borrowers to request extensions of the final maturity of all or a portion of the Term Loans and, in that connection, there may be an increase in the interest rates and/or fees payable with respect to such extended Term Loans. Such extensions shall be subject to certain conditions described in the 2020 Term Loan Facilities Agreement.

The 2020 Term Loan Facilities Agreement contains customary "yank-a-bank" provisions allowing the TL Borrowers to replace a lender in circumstances where such lender (a) is a non-consenting lender in connection with amendments and waivers requiring the consent of all lenders or all affected lenders so long as the required lenders have consented to such amendments or waivers, (b) requests to be compensated for increased costs, taxes and similar items or (c) is a defaulting lender.

The 2020 Term Loan Facilities Agreement contains customary loan buyback provisions, which will permit the TL Borrowers or affiliates to purchase Term Loans from lenders, subject to certain conditions, including, in the case of purchases by the TL Borrowers, a requirement that the loans purchased are automatically and permanently cancelled.

The 2020 Term Loan Facilities Agreement contains customary conversion provisions, which allow the lenders or the administrative agent, as applicable, to establish an alternate rate of interest to Term SOFR or EURIBOR in certain circumstances such as when (i) the administrative agent determines that the relevant interest benchmark is no longer available, (ii) the lenders incur increased costs or reductions in the amounts received or receivable with respect to any Term Benchmark Loan or (iii) the making or continuance of any Term Benchmark Loan becomes unlawful.

The 2020 Term Loan Facilities Agreement is governed by New York law.

Senior Secured Notes due 2027

Overview

On January 31, 2020, ISGG issued €600,000,000 aggregate principal amount 2¼% Senior Secured Notes due 2027 (the "**2027 Senior Secured Notes**") under an indenture dated as of January 31, 2020 (the "**2027 Senior Secured Notes Indenture**"), among, *inter alios*, ISGG, as the issuer, the Guarantors named therein, as guarantors, The Bank of New York Mellon, London Branch, as trustee (as supplemented from time to time, the "**2027 Senior Secured Notes Trustee**"), The Bank of New York Mellon SA/NV, Luxembourg Branch, as registrar, paying agent and Luxembourg transfer agent and Barclays Bank PLC, as Security Agent. On April 29, 2021, HSBC Corporate Trust Company (UK) Limited succeeded Barclays Bank PLC as Security Agent under the 2027 Senior Secured Notes Indenture. As of December 31, 2022, there were €600,000,000 aggregate principal amount of the 2027 Senior Secured Notes issued and outstanding.

Unless defined otherwise, capitalized terms used in this Section "*—Senior Secured Notes due 2027*" have the meaning assigned to them in the 2027 Senior Secured Notes Indenture.

Ranking

The 2027 Senior Secured Notes are the general senior secured obligations of ISGG and rank *pari passu* in right of payment with its existing and future indebtedness that is not expressly subordinated to the 2027 Senior Secured Notes (including, without limitation, indebtedness under the 2014 Term Loan Facilities Agreement and the 2020 Term Loan Facilities Agreement (the "**Credit Facility Agreements**"), the 2026 Senior Secured Notes and certain hedging obligations and cash management arrangements), are guaranteed on a senior secured basis by the Guarantors, rank effectively senior to all existing and future indebtedness of ISGG that is unsecured or secured by liens ranking behind the liens securing the 2027 Senior Secured Notes to the extent of the value of the collateral securing the 2027 Senior Secured Notes and rank senior in right of payment to all existing and future obligations of ISGG expressly subordinated in right of payment to the 2027 Senior Secured Notes, including its guarantee of obligations under the Senior Notes. In addition, the 2027 Senior Secured Notes are effectively subordinated in right of payment to all existing and future indebtedness and other liabilities of, including trade payables and letters of credit issued by, the subsidiaries of ISGG that are not guarantors, and effectively subordinated to all existing and future indebtedness of ISGG that is secured by property or assets that do not secure the 2027 Senior Secured Notes to the extent of the value of the collateral securing such indebtedness.

Interest Rates, Payment Dates and Maturity

The 2027 Senior Secured Notes bear interest at a rate of $2^{1}/_{4}$% per annum. Interest on the 2027 Senior Secured Notes is payable semi-annually in arrears on January 15 and July 15 of each year, beginning July 15, 2020. The 2027 Senior Secured Notes will mature on January 16, 2027.

Guarantees

The 2027 Senior Secured Notes are jointly and severally guaranteed on a senior secured basis by the Guarantors.

The guarantee of each Guarantor is its general senior secured obligation and (i) ranks *pari passu* in right of payment with all existing and future obligations of such Guarantor that are not expressly subordinated in right of payment to such guarantee, including obligations under the 2014 Term Loan Facilities Agreement, the 2020 Term Loan Facilities Agreement, the 2026 Senior Secured Notes, certain hedging obligations and cash management arrangements and, in the case of INEOS Quattro Finance 1 Plc ("**IQF1**") and the Parent, the Senior Notes and the guarantee thereof, respectively, (ii) ranks effectively senior to all existing and future obligations of such Guarantor (including its obligations under the Senior Notes Indenture (as defined below)) that are unsecured or secured by liens ranking behind the liens securing the 2027 Senior Secured Notes to the extent of the value of the collateral securing the 2027 Senior Secured Notes, (iii) ranks senior in right of payment to all existing and future obligations of such Guarantor that are expressly subordinated in right of payment to such guarantee, including the guarantees of the Senior Notes (but not, in the case of IQF1 or the Parent, its obligations under the Senior Notes or guarantee thereof) and (iv) is effectively subordinated to any existing and future obligations of such Guarantor that are secured by liens senior to the liens securing such guarantee, or secured by property and assets that do not secure such guarantee, to the extent of the value of the property and assets securing such indebtedness and other liabilities and (v) is structurally subordinated to all liabilities (including trade payables) and preferred stock of each subsidiary of the applicable Guarantor that is not a guarantor of the 2027 Senior Secured Notes.

Security

The 2027 Senior Secured Notes and the related guarantees are secured by first priority liens (subject to certain exceptions) on the same assets that secure the obligations under the 2014 Term Loan Facilities Agreement, the 2020 Term Loan Facilities Agreement, the 2026 Senior Secured Notes and certain hedging obligations and cash management arrangements.

Optional Redemption and Change of Control

The 2027 Senior Secured Notes are subject to redemption at any time on or after January 15, 2023, at the option of ISGG, in whole or in part, at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the twelve-month period beginning on January 15 of the year indicated below:

Year	**2027 Senior Secured Notes Redemption Price**
2023	101.125%
2024	100.5625%
2025 and thereafter	100.000%

together with certain additional amounts, if applicable, and accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

In connection with any tender offer for, or other offer to purchase, all of the 2027 Senior Secured Notes, if holders of not less than 90% of the aggregate principal amount of the then outstanding 2027 Senior Secured Notes validly tender and do not validly withdraw such 2027 Senior Secured Notes in such tender offer and ISGG, or any other person making such tender offer in lieu of ISGG, purchases all of the 2027 Senior Secured Notes validly tendered and not validly withdrawn by such holders, ISGG or such other person will have the right, subject to certain notice requirements, to redeem all (but not less than all) 2027 Senior Secured Notes that remain outstanding following such purchase at a price equal to the highest price (excluding any early tender premium or similar payment, any accrued and unpaid interest and certain additional amounts) paid to each other holder in such tender offer, plus, to the extent not included in the tender offer payment, accrued and unpaid interest thereon and certain additional amounts, to, but not including, the date of such redemption (subject to the rights of holders of record on the relevant record dates to receive interest due on an interest payment date).

Upon the occurrence of certain change of control events, each holder of 2027 Senior Secured Notes may require ISGG to repurchase all or a portion of its 2027 Senior Secured Notes at a purchase price equal to 101% of the principal amount of such 2027 Senior Secured Notes, plus certain additional amounts and accrued and unpaid interest to, but not including, the date of purchase.

If the Company or any of its Restricted Subsidiaries sells assets under certain circumstances, it is required to make an offer to purchase the 2027 Senior Secured Notes at 100% of the principal amount of the 2027 Senior Secured Notes, plus accrued and unpaid interest to, but not including, the date of purchase, with the excess proceeds from the sale of the assets.

In addition, in the event that ISGG becomes obligated to pay Additional Amounts to holders of the 2027 Senior Secured Notes as a result of changes affecting withholding taxes applicable to payments on the 2027 Senior Secured Notes, it may redeem the 2027 Senior Secured Notes in whole but not in part at any time at 100% of the principal amount of the 2027 Senior Secured Notes plus accrued and unpaid interest, if any, to, but not including, the redemption date.

Covenants

The 2027 Senior Secured Notes Indenture contains covenants that, among other things, limit the ability of the Company and its Restricted Subsidiaries to:

- incur or guarantee additional indebtedness and issue certain preferred stock;
- layer debt;
- make restricted payments, including dividends or other distributions;
- prepay or redeem subordinated debt or equity;
- make certain investments;
- create or permit to exist certain liens;
- transfer, lease or sell certain assets;
- enter into arrangements that impose restrictions on the ability of the Company and its Restricted Subsidiaries to pay dividends or make other payments to the Company;
- engage in certain transactions with affiliates;
- consolidate, merge or transfer all or substantially all of the Company's assets and the assets of its Restricted Subsidiaries on a consolidated basis;
- impair the security interests for the benefit of the holders of the 2027 Senior Secured Notes; and
- amend certain documents.

These covenants are subject to a number of important limitations and exceptions.

Events of Default

The 2027 Senior Secured Notes Indenture contains customary events of default, including, among others, the non-payment of principal, interest or certain additional amounts on the 2027 Senior Secured Notes, certain failures to perform or observe any other obligation under the 2027 Senior Secured Notes Indenture or security documents, the failure to pay certain indebtedness or judgments and the bankruptcy or insolvency of ISGG, the Company or any Significant Restricted Subsidiary. The occurrence of any of the events of default would permit or require the acceleration of all obligations outstanding under the 2027 Senior Secured Notes.

Senior Secured Notes due 2026

Overview

On January 29, 2021, INEOS Quattro Finance 2 Plc ("**IQF2**") issued €800,000,000 aggregate principal amount $2^{1}/_{2}$% Senior Secured Notes due 2026 (the "**Euro 2026 Senior Secured Notes**") and $500,000,000 aggregate principal amount $3^{3}/_{8}$% Senior Secured Notes due 2026 (the "**Dollar 2026 Senior Secured Notes**" and, together with the Euro 2026 Senior Secured Notes, the "**2026 Senior Secured Notes**") under an indenture dated as of January 29, 2021 (as supplemented from time to time, the "**2026 Senior Secured Notes Indenture**"), among, *inter alios*, IQF2, as the issuer, the Guarantors named therein, as guarantors, HSBC Corporate Trustee Company (UK) Limited, as trustee (the "**2026 Senior Secured Notes Trustee**") and Barclays Bank PLC, as Security Agent. On April 29, 2021, HSBC Corporate Trust Company (UK) Limited succeeded Barclays Bank PLC as Security Agent under the 2026 Senior Secured Notes Indenture.

Unless defined otherwise, capitalized terms used in this Section "*—Senior Secured Notes due 2026*" have the meaning assigned to them in the 2026 Senior Secured Notes Indenture.

Ranking

The 2026 Senior Secured Notes are the general senior secured obligations of IQF2 and rank *pari passu* in right of payment with its existing and future indebtedness that is not expressly subordinated to the 2026 Senior Secured Notes (including, without limitation, indebtedness under the Credit Facility Agreements, the 2027 Senior Secured Notes and certain hedging obligations and cash management arrangements), are guaranteed on a senior secured basis by the Guarantors, rank effectively senior to all existing and future indebtedness of IQF2 that is unsecured or secured by liens ranking behind the liens securing the 2026 Senior Secured Notes to the extent of the value of the collateral securing the 2026 Senior Secured Notes and rank senior in right of payment to all existing and future obligations of IQF2 expressly subordinated in right of payment to the 2026 Senior Secured Notes, including its guarantee of obligations under the Senior Notes. In addition, the 2026 Senior Secured Notes are effectively subordinated in right of payment to all existing and future indebtedness and other liabilities of, including trade payables and letters of credit issued by, the subsidiaries of IQF2 that are not Guarantors, and effectively subordinated to all existing and future indebtedness of IQF2 that is secured by property or assets that do not secure the 2026 Senior Secured Notes to the extent of the value of the collateral securing such indebtedness.

Interest Rates, Payment Dates and Maturity

The Euro 2026 Senior Secured Notes bear interest at a rate of $2^{1}/_{2}$% per annum. The Dollar 2026 Senior Secured Notes bear interest at a rate of $3^{3}/_{8}$% per annum. Interest on the 2026 Senior Secured Notes is payable semi-annually in arrears on January 15 and July 15 of each year, beginning July 15, 2021. The 2026 Senior Secured Notes will mature on January 15, 2026.

Guarantees

The 2026 Senior Secured Notes are jointly and severally guaranteed on a senior secured basis by the Guarantors.

The guarantee of each Guarantor is its general senior secured obligation and (i) ranks *pari passu* in right of payment with all existing and future obligations of such Guarantor that are not expressly subordinated in right of payment to such guarantee, including obligations under the 2014 Term Loan Facilities Agreement, the 2020 Term Loan Facilities Agreement, the 2027 Senior Secured Notes, certain hedging obligations and cash management arrangements and, in the case of IQF1 and the Parent, the Senior Notes and the guarantee thereof, respectively, (ii) ranks effectively senior to all existing and future obligations of such Guarantor (including its obligations under the Senior Notes Indenture) that are unsecured or secured by liens ranking behind the liens securing the 2026 Senior Secured Notes to the extent of the value of the collateral securing the 2026 Senior Secured Notes, (iii) ranks senior in right of payment to all existing and future obligations of such Guarantor that are expressly subordinated in right of payment to such guarantee, including the guarantees of the Senior Notes (but not, in the case of IQF1 or the Parent, its obligations under the Senior Notes or guarantee

thereof) and (iv) is effectively subordinated to any existing and future obligations of such Guarantor that are secured by liens senior to the liens securing such guarantee, or secured by property and assets that do not secure such guarantee, to the extent of the value of the property and assets securing such indebtedness and other liabilities and (v) is structurally subordinated to all liabilities (including trade payables) and preferred stock of each subsidiary of the applicable Guarantor that is not a guarantor of the 2026 Senior Secured Notes.

Security

The 2026 Senior Secured Notes and the related guarantees are secured by first priority liens (subject to certain exceptions) on the same assets that secure the obligations under the Credit Facility Agreements, the 2027 Senior Secured Notes and certain hedging obligations and cash management arrangements.

Optional Redemption and Change of Control

The Euro 2026 Senior Secured Notes are subject to redemption at any time on or after January 15, 2023, at the option of IQF2, in whole or in part, at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the twelve-month period beginning on January 15 of the year indicated below:

Year	Euro 2026 Senior Secured Notes Redemption Price
2023	101.250%
2024	100.625%
2025 and thereafter	100.000%

together with certain additional amounts, if applicable, and accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

In connection with any tender offer for, or other offer to purchase, all of the Euro 2026 Senior Secured Notes, if holders of not less than 90% of the aggregate principal amount of the then outstanding Euro 2026 Senior Secured Notes validly tender and do not validly withdraw such Euro 2026 Senior Secured Notes in such tender offer and IQF2, or any other person making such tender offer in lieu of IQF2, purchases all of the Euro 2026 Senior Secured Notes validly tendered and not validly withdrawn by such holders, IQF2 or such other person will have the right, subject to certain notice requirements, to redeem all (but not less than all) Euro 2026 Senior Secured Notes that remain outstanding following such purchase at a price equal to the highest price (excluding any early tender premium or similar payment, any accrued and unpaid interest and certain additional amounts) paid to each other holder in such tender offer, plus, to the extent not included in the tender offer payment, accrued and unpaid interest thereon and certain additional amounts, to, but not including, the date of such redemption (subject to the rights of holders of record on the relevant record dates to receive interest due on an interest payment date).

The Dollar 2026 Senior Secured Notes are subject to redemption at any time on or after January 15, 2023, at the option of IQF2, in whole or in part, at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the twelve-month period beginning on January 15 of the year indicated below:

Year	Dollar 2026 Senior Secured Notes Redemption Price
2023	101.6875%
2024	100.84375%
2025 and thereafter	100.000%

together with certain additional amounts, if applicable, and accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

In connection with any tender offer for, or other offer to purchase, all of the Dollar 2026 Senior Secured Notes, if holders of not less than 90% of the aggregate principal amount of the then outstanding Dollar 2026 Senior Secured Notes validly tender and do not validly withdraw such Dollar 2026 Senior Secured Notes in such tender offer and IQF2, or any other person making such tender offer in lieu of IQF2, purchases all of the Dollar 2026 Senior Secured Notes validly

tendered and not validly withdrawn by such holders, IQF2 or such other person will have the right, subject to certain notice requirements, to redeem all (but not less than all) Dollar 2026 Senior Secured Notes that remain outstanding following such purchase at a price equal to the highest price (excluding any early tender premium or similar payment, any accrued and unpaid interest and certain additional amounts) paid to each other holder in such tender offer, plus, to the extent not included in the tender offer payment, accrued and unpaid interest thereon and certain additional amounts, to, but not including, the date of such redemption (subject to the rights of holders of record on the relevant record dates to receive interest due on an interest payment date).

Upon the occurrence of certain change of control events, each holder of 2026 Senior Secured Notes may require IQF2 to repurchase all or a portion of its 2026 Senior Secured Notes at a purchase price equal to 101% of the principal amount of such 2026 Senior Secured Notes, plus certain additional amounts and accrued and unpaid interest to, but not including, the date of purchase.

If the Company or its Restricted Subsidiaries sells assets under certain circumstances, IQF2 is required to make an offer to purchase the 2026 Senior Secured Notes at 100% of the principal amount of the 2026 Senior Secured Notes, plus accrued and unpaid interest to, but not including, the date of purchase, with the excess proceeds from the sale of the assets.

In addition, in the event that IQF2 becomes obligated to pay Additional Amounts to holders of the 2026 Senior Secured Notes of any series as a result of changes affecting withholding taxes applicable to payments on the 2026 Senior Secured Notes, it may redeem the relevant series of 2026 Senior Secured Notes in whole but not in part at any time at 100% of the principal amount of such series of 2026 Senior Secured Notes plus accrued and unpaid interest, if any, to, but not including, the redemption date.

Covenants

The 2026 Senior Secured Notes Indenture contains covenants that, among other things, limit the ability of the Company and its Restricted Subsidiaries to:

- incur or guarantee additional indebtedness and issue certain preferred stock;
- layer debt;
- make restricted payments, including dividends or other distributions;
- prepay or redeem subordinated debt or equity;
- make certain investments;
- create or permit to exist certain liens;
- transfer, lease or sell certain assets;
- enter into arrangements that impose restrictions on the ability of the Company and its Restricted Subsidiaries to pay dividends or make other payments to the Company;
- engage in certain transactions with affiliates;
- consolidate, merge or transfer all or substantially all of the Company’s assets and the assets of its Restricted Subsidiaries on a consolidated basis;
- impair the security interests for the benefit of the holders of the 2026 Senior Secured Notes; and
- amend certain documents.

These covenants are subject to a number of important limitations and exceptions.

Events of Default

The 2026 Senior Secured Notes Indenture contains customary events of default, including, among others, the non-payment of principal, interest or certain additional amounts on the 2026 Senior Secured Notes, certain failures to perform or observe any other obligation under the 2026 Senior Secured Notes Indenture or security documents, the failure to pay certain indebtedness or judgments and the bankruptcy or insolvency of the Company, IQF2 or any Significant Restricted Subsidiary. The occurrence of any of the events of default would permit or require the acceleration of all obligations outstanding under the 2026 Senior Secured Notes.

Senior Notes due 2026

Overview

On January 29, 2021, IQF1 issued €500,000,000 aggregate principal amount 3³/₄% Senior Notes due 2026 (the "**Senior Notes**") under an indenture dated as of January 29, 2021 (as supplemented from time to time, the "**Senior Notes Indenture**"), among, *inter alios*, IQF1, as the issuer, the guarantors named therein, as Guarantors, HSBC Corporate Trustee Company (UK) Limited, as trustee (the "**Senior Notes Trustee**") and Barclays Bank PLC, as Security Agent. On April 29, 2021, HSBC Corporate Trust Company (UK) Limited succeeded Barclays Bank PLC as Security Agent under the Senior Notes Indenture.

Unless defined otherwise, capitalized terms used in this Section "—*Senior Notes due 2026*" have the meaning assigned to them in the Senior Notes Indenture.

Ranking

The Senior Notes are the general senior obligations of IQF2 and rank *pari passu* in right of payment with its existing and future indebtedness that is not expressly subordinated to the Senior Notes, are guaranteed by the Guarantors on a senior subordinated basis (or, in the case of the guarantee by the Parent, on a senior basis), rank effectively subordinated to all existing and future indebtedness of IQF2 that is secured by liens on assets that do not secure the Senior Notes or by liens ranking behind the liens securing the Senior Notes, in each case to the extent of the value of such collateral (including, without limitation, IQF2's guarantees under the Credit Facility Agreements, the 2027 Senior Secured Notes Indenture, the 2026 Senior Secured Notes Indenture and certain hedging obligations and cash management arrangements) and rank senior in right of payment to all existing and future obligations of IQF2 expressly subordinated in right of payment to the Senior Notes. In addition, the Senior Notes are effectively subordinated in right of payment to all existing and future indebtedness and other liabilities of, including trade payables and letters of credit issued by, the subsidiaries of IQF2 that are not Guarantors.

Interest Rates, Payment Dates and Maturity

The Senior Notes bear interest at a rate of 3³/₄% per annum. Interest on the Senior Notes is payable semi-annually in arrears on January 15 and July 15 of each year, beginning July 15, 2021. The Senior Notes will mature on July 15, 2026.

Guarantees

The Senior Notes are jointly and severally guaranteed on a senior subordinated basis by the Guarantors (other than the Parent, which guarantees the Senior Notes on a senior basis).

The guarantee of each Guarantor (other than that of the Parent) is its general senior subordinated obligation and (i) ranks behind all of the existing and future senior obligations of such Guarantor, which includes the Guarantors' obligations under the 2014 Term Loan Facilities Agreement, the 2020 Term Loan Facilities Agreement, the 2027 Senior Secured Notes Indenture, the 2026 Senior Secured Notes Indenture, certain hedging obligations and cash management arrangements, (ii) ranks equally with the existing and future senior subordinated indebtedness of the Guarantors, (iii) ranks senior in right of payment to all existing and future obligations of such Guarantor that are expressly subordinated in right of payment to such guarantee, (iv) are effectively subordinated to all existing and future secured obligations of such Guarantor to the extent of the value of the collateral securing such obligations and (v) are structurally subordinated to all liabilities (including trade payables) and preferred stock of each subsidiary of the applicable Guarantor that is not a guarantor of the Senior Notes.

Security

The Senior Notes and the related guarantees are secured by second-ranking security interests (subject to certain exceptions) over the shares of the capital stock of the Company and the loan by IQF1 to the Company of the proceeds of the Senior Notes (the "**Senior Notes Proceeds Loan**") (the "**Senior Notes Collateral**"). These security interests rank behind the security interests granted over those assets in favor of the creditors of certain other indebtedness, including under the 2027 Senior Secured Notes Indenture, the 2026 Senior Secured Notes Indenture and the Credit Facility Agreements.

Optional Redemption and Change of Control

The Senior Notes are subject to redemption at any time on or after January 15, 2023, at the option of IQF1, in whole or in part, at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the twelve-month period beginning on January 15 of the year indicated below:

Year	**2026 Senior Notes Redemption Price**
2023	101.875%
2024	100.9375%
2025 and thereafter	100.000%

together with certain additional amounts, if applicable, and accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

In connection with any tender offer for, or other offer to purchase, all of the Senior Notes, if holders of not less than 90% of the aggregate principal amount of the then outstanding Senior Notes validly tender and do not validly withdraw such Senior Notes in such tender offer and IQF1, or any other person making such tender offer in lieu of IQF1, purchases all of the Senior Notes validly tendered and not validly withdrawn by such holders, IQF1 or such other person will have the right, subject to certain notice requirements, to redeem all (but not less than all) Senior Notes that remain outstanding following such purchase at a price equal to the highest price (excluding any early tender premium or similar payment, any accrued and unpaid interest and certain additional amounts) paid to each other holder in such tender offer, plus, to the extent not included in the tender offer payment, accrued and unpaid interest thereon and certain additional amounts, to, but not including, the date of such redemption (subject to the rights of holders of record on the relevant record dates to receive interest due on an interest payment date).

Upon the occurrence of certain change of control events, each holder of Senior Notes may require IQF1 to repurchase all or a portion of its Senior Notes at a purchase price equal to 101% of the principal amount of such Senior Notes, plus certain additional amounts and accrued and unpaid interest to, but not including, the date of purchase.

If the Parent or its any of its Restricted Subsidiaries sells assets under certain circumstances, IQF1 is required to make an offer to purchase the Senior Notes at 100% of the principal amount of the Senior Notes, plus accrued and unpaid interest to, but not including, the date of purchase, with the excess proceeds from the sale of the assets.

In addition, in the event that IQF1 becomes obligated to pay Additional Amounts (as defined in the Senior Notes Indenture) to holders of the Senior Notes as a result of changes affecting withholding taxes applicable to payments on the Senior Notes, it may redeem the Senior Notes in whole but not in part at any time at 100% of the principal amount of the Senior Notes plus accrued and unpaid interest, if any, to, but not including, the redemption date.

Covenants

The Senior Notes Indenture contains covenants that, among other things, limit the ability of the Parent and its Restricted Subsidiaries to:

- incur or guarantee additional indebtedness and issue certain preferred stock;
- layer debt;
- make restricted payments, including dividends or other distributions;
- prepay or redeem subordinated debt or equity;

- make certain investments;
- create or permit to exist certain liens;
- transfer, lease or sell certain assets;
- enter into arrangements that impose restrictions on the ability of the Parent and its Restricted Subsidiaries to pay dividends or make other payments to the Parent;
- engage in certain transactions with affiliates;
- consolidate, merge or transfer all or substantially all of the Parent's assets and the assets of its Restricted Subsidiaries on a consolidated basis;
- impair the security interests for the benefit of the holders of the Senior Notes; and
- amend certain documents.

These covenants are subject to a number of important limitations and exceptions.

Events of Default

The Senior Notes Indenture contains customary events of default, including, among others, the non-payment of principal, interest or certain additional amounts on the Senior Notes, certain failures to perform or observe any other obligation under the Senior Notes Indenture or security documents, the failure to pay certain indebtedness or judgments and the bankruptcy or insolvency of the Parent, IQF1 or any Significant Restricted Subsidiary (as defined in the Senior Notes Indenture). The occurrence of any of the events of default would permit or require the acceleration of all obligations outstanding under the Senior Notes.

The Styrolution Securitization Program

In 2011, ISGG and certain of its subsidiaries (the "**Sellers**") entered into a three-year €500.0 million trade receivables securitization (as amended, supplemented, varied, novated, extended or replaced from time to time, the "**Styrolution Securitization Program**"). The margins on amounts drawn and the commitment fee on amounts undrawn under the Styrolution Securitization Program have been amended from time to time, most recently on June 28, 2021. The Styrolution Securitization Program was updated to include a second banking partner pursuant to a joinder agreement dated as of July 12, 2018 and a further three banking partners joined the program on June 28, 2021. On July 12, 2018, the overall facility amount was reduced from €500.0 million to €450.0 million pursuant to the master deed of amendment dated July 12, 2018. On June 10, 2022, three new selling entities from the Aromatics and Acetyls Businesses joined the Styrolution Securitization Program, the number of banking partners was raised to five and the overall facility amount was increased from €450.0 million to €600.0 million. The scheduled termination date for the facility was extended to June 30, 2024. As of December 31, 2022, we had nil gross indebtedness outstanding under the Styrolution Securitization Program.

Under the Styrolution Securitization Program, all trade receivables originated by the Sellers (other than those receivables that are specifically identified as "excluded receivables") are sold to a bankruptcy remote special purpose vehicle incorporated under the laws of the Republic of Ireland, INEOS Styrolution Receivables Finance Designated Activity Company (DAC) (the "**SPV**"). The SPV finances these purchases from borrowings, primarily funded through an asset-backed commercial paper ("**ABCP**") conduit. The cost of funding for the ABCP conduit reflects the rating of the pooled financial assets in which they invest, thus allowing the Styrolution Securitization Program to benefit from financing costs that are not linked to our corporate rating.

The Styrolution Securitization Program is restricted to receivables denominated in specified currencies that are sold to the SPV at face value less a discount reflecting the funding cost until settlement. The SPV acquires title, on a non-recourse basis, to new receivables as they arise and settles its purchases with the Sellers on a daily basis. Cash received from customers is paid into segregated bank accounts in the name of the SPV or held on trust for the SPV. Responsibility for the administration of the receivables, including adherence to established credit and collection policies lies with ISGG as master servicer acting on behalf of the SPV, which delegates its servicing obligations to the Sellers.

The lenders' advance rate is adjusted each day to reflect the actual performance of the receivables portfolio according to standard rating agency methodology for calculating loss and dilution reserves and other potential shortfalls. The balance of the SPV's funding requirements to purchase receivables is provided by ISGG through a subordinated loan facility.

ISGG and certain of its subsidiaries grant security over collection accounts under the Styrolution Securitization Program, and the Styrolution Securitization Program contains customary terms and conditions applicable to trade receivable securitization facilities. The Styrolution Securitization Program does not contain any financial maintenance covenants.

The INOVYN Securitization Program

In November 2008, INOVYN Group Treasury Limited (the "**Master Servicer**") and certain of the other Kerling subsidiary companies in their capacity as sellers of receivables entered into a two-year €90.0 million trade receivables securitization (as amended, supplemented, varied, novated, extended or replaced from time to time, the "**INOVYN Securitization Program**").

The margins on amounts drawn and the commitment fee on amounts undrawn under the INOVYN Securitization Program have been amended from time to time, most recently on June 28, 2021. In addition, the INOVYN companies acting as sellers have been amended over time, such that as of December 31, 2019, only INOVYN ChlorVinyls Limited, INOVYN Group Treasury Limited, INOVYN Enterprises Limited, INOVYN Europe Limited (a U.K.-incorporated company with branches established throughout Europe) and INOVYN Deutschland GmbH were sellers (the "**INOVYN Sellers**"). INOVYN Trade Services SA/NV became an active seller in January 2021, after joining the Program in October 2019 but being an inactive seller until January 2021. The maximum amount available under the facility has also been changed from time to time, most recently to €240.0 million pursuant to an amendment deed dated June 29, 2018. The facility is subject to a borrowing limit that is adjusted periodically based on the amount of our eligible trade receivables at that time. The scheduled termination date for the facility has been extended from time to time, most recently to June 30, 2024. As of December 31, 2022, we had nil gross indebtedness outstanding under the INOVYN Securitization Program.

Under the INOVYN Securitization Program, all trade receivables originated by the INOVYN Sellers (other than those receivables that are specifically identified as "excluded receivables") are sold, pursuant to certain receivables purchase agreements, to INEOS Norway Finance Ireland Limited, a bankruptcy remote special purpose vehicle incorporated under the laws of the Republic of Ireland (the "**INOVYN SPV**"). Receivables denominated in currencies other than U.S. dollars, euro or pounds sterling are excluded. The purchase price in respect of receivables sold is available to the Sellers for their working capital and other financing requirements. The receivables purchase agreements contain customary representations, warranties and covenants and will terminate in the event of, among other things, certain INOVYN Seller change of control events.

In order to finance these purchases, the INOVYN SPV has entered into a receivables loan agreement with Barclays Bank PLC, ING Belgium SA/NV and HSBC Bank PLC acting as lenders, liquidity providers and program agents. These borrowings are primarily funded through asset-backed commercial paper ("**ABCP**") conduits. The cost of funding for the ABCP conduits reflects the rating of the pooled financial assets in which they invest, thus allowing the INOVYN Securitization Program to benefit from financing costs that are not linked to our corporate rating. The borrowing limit under this financing is adjusted periodically to reflect the actual value and performance of the eligible receivables portfolio and to take into account deductions reflecting an assumed level of dilutions and, among other things, over-exposure, beyond agreed concentration limits, to certain customers or jurisdictions. The balance of the SPV's funding requirements is provided by INOVYN Group Treasury Limited through a subordinated loan facility.

Receivables are sold to the INOVYN SPV at face value, less a small discount to reflect the carry cost until settlement. The INOVYN SPV is consolidated as a quasi-subsidiary since INOVYN gains the benefits and bears the inherent risks relating to the net assets of the INOVYN SPV. The INOVYN SPV acquires title, on a limited recourse basis, to new receivables and settles its purchases with the INOVYN Sellers on a weekly basis. Collections are paid into designated collection accounts over which the INOVYN SPV lenders have certain security interests. The INOVYN Sellers delegate to the Master Servicer responsibility for the collection and management of receivables and separately indemnify the Master Servicer for this role.

Other Financing

Finance Lease

In 2013, the Styrolution Business entered into a finance lease for a building with BASF for a 33-year term. We recorded the asset and liability at €8.3 million at inception.

Working Capital, Letter of Credit and Bank Guarantee Facilities

We have several short-term credit facilities with different local banks to fund our working capital requirements up to a total aggregate amount of €224.2 million equivalent as of December 31, 2022, in China, Malaysia, Singapore, South Korea, Thailand, and the United Kingdom. As of December 31, 2022, there was €197.8 million equivalent available under such facilities (with €26.4 million of certain trade finance facilities being utilized in China).

We also have letter of credit facilities in China, Malaysia, Indonesia, Mexico, Singapore, South Korea, Thailand, and the United Kingdom. As of December 31, 2022, the drawn amount under all letter of credit facilities was €16.0 million equivalent. The letters of credit are generally secured by current assets. The facilities also provide for a limited number of other financial services, such as bank guarantees and FX hedging lines. The facilities, which are at an agreed margin or the state bank advance rate, contain customary covenants and representations as well as termination events.

Renminbi Facility

On January 21, 2022, our then Unrestricted Subsidiary, INEOS Styrolution Advanced Materials (Ningbo) Pte Ltd ("**SAM**") entered into a 10-year RMB 3,300 million term loan facility (the "**Renminbi Facility**") to finance the development of the 600 kiloton ABS plant to be constructed in Ningbo, China and to refinance certain loans from members of the Group to SAM. The Renminbi Facility is secured by its assets (excluding those financed through the Export Credit Financing as specified below) and is guaranteed, on an unsecured basis, by the Company until the start of operations. On December 28, 2022, a subsidiary of the Group completed an equity transfer agreement with Sinopec relating to the sale and purchase of a 50% equity interest in SAM. As a result of this divesture, the obligations of the Group under the Renminbi Facility have been transferred to the newly created joint-venture with Sinopec and disposed of in the Group, and SAM has ceased to be an Unrestricted Subsidiary. As of December 31, 2022, the amount utilized under the facility was RMB 3,035.2 million (€408.2 million equivalent).

Export Credit Financing Guarantees

On September 7, 2022, our then Unrestricted Subsidiary SAM, as borrower, entered into a term loan facility agreement providing for the first (the "***Export Credit Facility I***") of up to four export credit facilities to finance the construction of the 600 kiloton ABS plant in Ningbo, China and certain fees in connection therewith. The size of the Export Credit Facility I is €6.5 million, which amount was fully drawn as of December 31, 2022. On December 28, 2022, SAM ceased to be an Unrestricted Subsidiary and became a joint venture, see "*—Renminbi Facility*". On January 16, 2023, SAM entered into a second term loan facility agreement providing for a loan of €77.6 million (the "***Export Credit Facility II***" and, together with the "***Export Credit Facility I***", the "***Export Credit Facilities***"). As of the date of this annual report, no amounts were drawn under the Export Credit Facility II. The Export Credit Facilities bear semi-annual interest at a rate per annum equal to 6-month EURIBOR (subject to a floor of 0% per annum) plus a margin. They are guaranteed by each of INEOS Styrolution America LLC, INEOS Styrolution Polymers (Foshan) Company Limited and INEOS Styrolution Polymers (Ningbo) Company Limited. The Export Credit Facilities will be amortized over 10 years, with the first of 20 equal semi-annual instalments being made no later than on May 31, 2024. Two additional export facility loan agreements on substantially similar terms as those of the Export Credit Facilities are expected to be entered into in the third quarter of 2023.

Intercreditor Agreement

The Intercreditor Agreement, which was entered into among, *inter alios*, the Parent, the Company, ISGG, the other Guarantors, Barclays Bank PLC, as administrative agent under the 2014 Term Loan Facilities Agreement (the "**Administrative Agent**") and Security Agent, was amended and restated on January 31, 2020. On July 31, 2020, the administrative agent under the 2020 Term Loan Facilities Agreement acceded to the Intercreditor Agreement as a Pari Passu Debt Representative. On January 29, 2021, the 2026 Senior Secured Notes Trustee acceded to the Intercreditor Agreement as a Pari Passu Debt Representative and the Senior Notes Trustee acceded to the Intercreditor Agreement as a Second Lien Debt Representative. On April 29, 2021, HSBC Corporate Trust Company (UK) Limited succeeded Barclays Bank PLC as Security Agent under the Intercreditor Agreement. Under the Intercreditor Agreement, the 2026 Senior Secured Notes, the 2027 Senior Secured Notes and the obligations under the 2020 Term Loan Facilities Agreement are Pari Passu Debt (as described below), and the Senior Notes are Second Lien Debt (as described below). The Intercreditor Agreement governs the relationships and relative priorities among: (a) the lenders under the 2014 Term Loan Facilities Agreement; (b) any persons that accede to the Intercreditor Agreement as counterparties to certain hedging agreements (collectively, the "**Hedge Agreements**" and any persons that accede to the Intercreditor Agreement as counterparties to the Hedge Agreements are referred to in such capacity as the "**Hedge Counterparties**"); (c) (i) the 2026 Senior Secured Notes Trustee, on its behalf and on behalf of the holders of the 2026 Senior Secured Notes, the 2027 Senior Secured Notes Trustee, on its behalf and on behalf of the holders of the 2027 Senior Secured Notes, (iii) the agent under the 2020 Term Loan Facilities Agreement and (iv) any other representative (together with the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the agent under the 2020 Term Loan Facilities Agreement, each a "**Pari Passu**

Debt Representative") on its behalf and on behalf of the holders of debt ranking *pari passu* with the 2026 Senior Secured Notes, the 2027 Senior Secured Notes, the obligations under the 2014 Term Loan Facilities Agreement and the obligations under the Term Loan A and B Facilities Agreement and benefiting from liens on the Collateral (the "**Transaction Security**" and the agreements such Transaction Security is documented under, the "**Transaction Security Documents**") ranking *pari passu* with the liens on the Collateral securing the 2026 Senior Secured Notes, the 2027 Senior Secured Notes and the loans under the Credit Facility Agreements (together with the 2026 Senior Secured Notes, the 2027 Senior Secured Notes and the loans under the 2020 Term Loan Facilities Agreement, the "**Pari Passu Debt**," the creditors of such debt being "**Pari Passu Creditors**" and the obligations thereunder the "**Pari Passu Debt Obligations**"); (d) any creditors of debt secured by liens on the Collateral ranking junior in payment priority to the obligations under the 2014 Term Loan Facilities Agreement and the Pari Passu Debt, including the Senior Notes (the "**Second Lien Debt**" and the creditors of such debt being "**Second Lien Debt Creditors**"); (e) any persons that accede to the Intercreditor Agreement as counterparties to certain cash management agreements (collectively, the "**Cash Management Agreements**" and any persons that accede to the Intercreditor Agreement as counterparties to the Cash Management Agreements are referred to in such capacity as the "**Cash Management Providers**"); (f) the Security Agent; (g) the Representatives (as defined below under "—*Amendments*"); (h) intra-group creditors and debtors; and (i) certain subordinated creditors.

The Parent, the Company, the restricted subsidiaries of the Company (together with the Company, the "**Group**" (for purposes of this Intercreditor Agreement description)), any holding company of the Company that is a subsidiary of the Parent and any issuer/borrower of Second Lien Debt that is a holding company of the Company that is not a member of the Group or is a finance subsidiary of such holding company (including IQF1) that incur any liability or provide any guarantee under the 2014 Term Loan Facilities Agreement, any Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement) or any Second Lien Debt documents (including the Senior Notes Indenture) are each referred to in this description as a "**Debtor**" and are referred to collectively as the "**Debtors**".

The Intercreditor Agreement sets out, among other things:

(a) the relative ranking of certain indebtedness of the Debtors;

(b) when payments can be made in respect of certain indebtedness of the Debtors;

(c) when enforcement actions can be taken in respect of that indebtedness;

(d) the terms pursuant to which that indebtedness will be subordinated upon the occurrence of certain insolvency events;

(e) turnover provisions; and

(f) when security and guarantees will be released, including to permit a sale of any Collateral or any merger, consolidation, amalgamation, reorganization or combination of the foregoing which relates to (by disposal or otherwise) any asset which is subject to the Transaction Security which are permitted or not prohibited under the Debt Documents (as defined below).

The obligations under the Intercreditor Agreement are subject to the relevant jurisdiction's guarantee limitations and other local law considerations. The Intercreditor Agreement, the 2014 Term Loan Facilities Agreement, the Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2020 Term Loan Facilities Agreement and the 2027 Senior Secured Notes Indenture), the Hedge Agreements, the Cash Management Agreements, the Second Lien Debt documents (including the Senior Notes Indenture), the Transaction Security Documents, any document granting a security interest in favor of the Secured Parties (as defined below), any agreement in respect of certain intra-group obligations and subordinated obligations are collectively referred to herein as the "**Debt Documents**". The Obligations (as defined below) of the Debtors to the lenders under the 2014 Term Loan Facilities Agreement and the other finance documents designated thereunder, including the Intercreditor Agreement and the Transaction Security Documents (the "**Senior Secured Facilities Obligations**"), together with the Hedging Obligations, the Cash Management Obligations, the Obligations of the Debtors under the Pari Passu Debt Obligations (including the 2026 Senior Secured Notes, the obligations under the 2020 Term Loan Facilities Agreement and the 2027 Senior Secured Notes), the Agent Obligations (as defined below), and the Security Agent Obligations (as defined below) except in respect of parallel debt in respect of Second Lien Debt and the Second Lien Debt Representative Amounts, but in each case excluding certain swap obligations are the "**Senior Secured Obligations**". The obligations of the Debtors under the Hedge Agreements (the "**Hedging Obligations**"), the obligations of the Debtors under the Cash Management Agreements (the "**Cash Management Obligations**"), the obligations under the Second Lien Debt Documents (including the Senior Notes) and certain proceeds loans (the "**Second Lien Debt Obligations**"), the obligations of the Debtors to the Representatives (as defined below) (the "**Representative Obligations**"), including the obligations of the Debtors to the creditor representative(s) of Pari Passu Debt (including, in respect of the 2026 Senior Secured Notes, the 2026 Senior Secured Notes Trustee, in respect of the 2027 Senior Secured Notes, the 2027 Senior

Secured Notes Trustee and the loans under the Term Loan A and B Facility, the administrative agent thereunder) (the "**Pari Passu Debt Representative Amounts**"), the obligations of the Debtors to each creditor representative of the Second Lien Debt (including, in respect of the Senior Notes, the Senior Notes Trustee) (the "**Second Lien Debt Representative Amounts**"), the obligations of the Debtors to the Security Agent (the "**Security Agent Obligations**"), the fees, costs and expenses of the Debtors to the Administrative Agent and arrangers and any other agent parties under the Senior Secured Facilities documents (the "**Agent Obligations**") are, together with Senior Secured Facilities Obligations and the Pari Passu Debt Obligations (including the 2026 Senior Secured Notes, the 2027 Senior Secured Notes and the loans under the 2020 Term Loan Facilities Agreement), collectively referred to as the "**Secured Obligations**".

Ranking and Priority

The Intercreditor Agreement provides, subject to the provisions in respect of the ranking of Transaction Security described below, that the obligations of the Debtors (other than the Parent, any holding company of the Company that is a subsidiary of the Parent (a "**Parent Intermediate Holdco**") or any issuer/borrower of Second Lien Debt (including IQF1)) under the Debt Documents will rank in right and priority of payment in the following order and are postponed and subordinated to any prior ranking obligations:

i. first, the Security Agent Obligations (other than with respect to parallel debt), the Agent Obligations, the Pari Passu Debt Representative Amounts and the Second Lien Debt Representative Amounts *pari passu* and without any preference between them;

ii. second, the Senior Secured Obligations (to the extent not included in clause (i) above) *pari passu* and without any preference between them; and

iii. third, the Second Lien Debt Obligations (to the extent not included in clause (i) above) *pari passu* and without any preference between them.

The obligations of the Parent, any Parent Intermediate Holdco and any issuer/borrower of Second Lien Debt (including IQF1) will rank in right and priority of payment in the following order and are postponed and subordinated to any prior ranking obligations:

i. first, the Security Agent Obligations (other than with respect to parallel debt), the Agent Obligations, the Pari Passu Debt Representative Amounts and the Second Lien Debt Representative Amounts *pari passu* and without any preference between them; and

ii. second, the Senior Secured Obligations and the Second Lien Debt Obligations (in each case, to the extent not included in clause (i) above) *pari passu* and without any preference between them.

The Transaction Security will rank and secure (only to the extent that the Transaction Security is expressed to secure those Obligations) the following Obligations, and, in the case of the Hedging Obligations, Cash Management Obligations, Senior Secured Facilities Obligations, Pari Passu Debt Obligations and Second Lien Debt Obligations, without prejudice to the sections described herein under "*—Loss Sharing*", in the following order:

(a) first, the Security Agent Obligations (other than with respect to parallel debt), the Agent Obligations, the Pari Passu Debt Representative Amounts and the Second Lien Debt Representative Amounts *pari passu* and without any preference between them;

(b) second, the Senior Secured Obligations (in each case, to the extent not included in clause (a) above) *pari passu* and without any preference between them; and

(c) third, the Second Lien Debt Obligations (in each case, to the extent not included in clause (a) above and excluding obligations of the Company in respect of any Second Lien Debt proceeds loan) *pari passu* and without any preference between them,

in each case irrespective of (i) the order of execution, creation, registration, notice, enforcement or otherwise, (ii) the date on which any such Obligation arose, and (iii) any fluctuation in the amount, or any intermediate discharge in whole or in part, of any such Obligation.

Limitations of Enforcement

For the purpose of this paragraph:

"**Enforcement Action**" means (a) in relation to any Obligations (i) the acceleration of any Obligations or the making of any declaration that any Obligations are prematurely due and payable (other than as a result of it becoming unlawful for a creditor under the Secured Obligations (each a "**Primary Creditor**") to perform its obligations under, or of any voluntary or mandatory prepayment or redemption arising under, the Debt Documents), (ii) the making of any declaration that any Obligations are payable on demand (except in respect of any intra-Group Obligations, other than when a Distress Event (as defined below under "—*Proceeds of Disposals*") has occurred and is continuing), (iii) the making of a demand in relation to an Obligation that is payable on demand (except in respect of any intra-Group Obligations, other than when a Distress Event has occurred and is continuing), (iv) the making of any demand against any Debtor in relation to any guarantee Obligations of that Debtor (except in respect of any intra-Group Obligations, other than when a Distress Event has occurred and is continuing), (v) the exercise of any right to require any member of the Group to acquire any Obligation (including exercising any put or call option against any member of the Group for the redemption or purchase of any Obligation) (it being understood that open market purchases or debt buybacks or voluntary tender or exchange offers or redemptions or prepayments or similar or equivalent arrangements by any Debtor or any member of the Group with respect to any Senior Secured Obligations or Second Lien Debt Obligations permitted under the Debt Documents shall not constitute the exercise of a right to require any Debtor or any member of the Group to acquire any Obligation) and other than in connection with any mandatory offer arising on or as a result of a change of control or asset sale (however described) as set out in the documents governing the Senior Secured Obligations (the "**Senior Secured documents**") or the Second Lien Debt documents or mandatory prepayments (or any other similar or equivalent provision of any of the Debt Documents) by any Debtor or member of the Group, (vi) the exercise of any right of set-off, account combination or payment netting against any member of the Group in respect of any Obligations other than the exercise of any such right (A) by way of netting by a Hedge Counterparty, (B) which is otherwise permitted under the 2014 Term Loan Facilities Agreement, any Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement), or any Second Lien Debt documents (including the Senior Notes Indenture) to the extent that the exercise of that right gives effect to a payment permitted pursuant to the Intercreditor Agreement to be made in respect of the Obligations, or (C) in respect of any intra-Group Obligations prior to the occurrence of a Distress Event, and (vii) the suing for, commencing or joining of any legal or arbitration proceedings against any member of the Group to recover any Obligations; (b) the premature termination or close-out of any hedging transaction under any Hedge Agreement or any cash management arrangement under any Cash Management Agreement save to the extent permitted under the Intercreditor Agreement; (c) the taking of any steps to enforce or require the enforcement of any Transaction Security (including the crystallization of any floating charge forming part of the Transaction Security); (d) the entering into of any composition, compromise, assignment or arrangement with any Debtor or member of the Group which owes any Obligations, or has given any lien, guarantee or indemnity or other assurance against loss in respect of the Obligations other than ((A) any action permitted under the provisions of the Intercreditor Agreement relating to changes to the parties thereto, (B) any consensual amendments to and/or waivers of the Debt Documents agreed between any Debtor or any member of the Group and the relevant creditors where that amendment or waiver does not constitute a Default under the 2014 Term Loan Facilities Agreement, any Pari Passu Debt document (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement) or any Second Lien Debt document (including the Senior Notes Indenture) which is not the subject of that amendment or waiver or (C) any such action constituting an acquisition of intra-Group Obligations which are permitted under the Intercreditor Agreement); or (e) the petitioning, applying or voting for, or the taking of any formal steps (including the appointment of any liquidator, receiver, administrator or similar officer) in relation to, the winding up, suspension of payments, a moratorium of any indebtedness, dissolution, administration or involuntary reorganization of the Parent, any Parent Intermediate Holdco, any member of the Group or any issuer/borrower of Second Lien Debt (including IQF1) which owes any Obligations, or has given any lien, guarantee, indemnity or other assurance against loss in respect of any of the Obligations, or any of the Parent's, such Parent Intermediate Holdco's, such member of the Group's or issuer/borrower's of Second Lien Debt assets or any suspension of payments or moratorium of any indebtedness of the Parent, such Parent Intermediate Holdco, such member of the Group or such issuer/borrower of Second Lien Debt or any analogous procedure in any jurisdiction); except that the following shall not constitute Enforcement Action, (i) the taking of any action falling within (a) (ii), (iii), (iv) and (vii) or (e) above prior to any proceedings under the German Insolvency Code (*Insolvenzordnung*) which is necessary (but only to the extent necessary) to preserve the validity, existence or priority of claims in respect of Obligations, including the registration of such claims before any court or governmental authority and the bringing, supporting or joining of proceedings to prevent any loss of the right to bring, support or join proceedings by reason of applicable limitation periods, (ii) any Primary Creditor bringing legal proceedings against any person solely for the purpose of (A) obtaining injunctive relief (or any analogous remedy) to restrain any actual or putative breach of any Debt Document to which it is party, (B) obtaining specific performance (other than specific performance of an obligation to make a payment) with no claim for damages; or (C) requesting judicial interpretation of any provision of any Debt Document to which it is party with no claim for damages, (iii) any intra-Group Obligations or certain Obligations owed to direct and indirect shareholders of the Company ("**Subordinated Obligations**") of a member of the Group being released or discharged in consideration for the issue of shares in that person prior to an acceleration event in respect of the Secured Obligations or (iv) to the extent entitled

by law, the taking of any action against any creditor (or any agent, trustee or receiver acting on behalf of that creditor) to challenge the basis on which any sale or disposal is to take place pursuant to the powers granted to those persons under any relevant documentation; or (D) bringing legal proceedings against any person in connection with any fraud, securities violation or securities or listing regulations; or (E) allegations of material misstatements or omissions made in connection with the offering materials relating to any Pari Passu Debt or Second Lien Debt in the form of notes (including the Notes) or in reports furnished to the creditors in respect thereof (including the holders of the Notes) or any exchange on which the such notes (including the Notes) are listed by a member of the Group, the Parent, an issuer/borrower of Second Lien Debt or certain direct and indirect shareholders of the Parent pursuant to the information and reporting requirements under the relevant Pari Passu Debt documents or Second Lien Debt documents.

"**Obligations**" means all present and future liabilities and obligations at any time of any Debtor to any creditor under the Debt Documents, both actual and contingent and whether incurred solely or jointly or in any other capacity, together with certain matters relating to or arising in respect of those liabilities and obligations, including in respect of refinancing, novation, deferral or extension, claim for breach of representation, warranty or undertaking or on an event of default or under any indemnity given under or in connection with any document or agreement evidencing or constituting any other liability or obligation falling within this definition, (c) any claim for damages or restitution, any claim as a result of any recovery by any Debtor of a payment on the grounds of preference or otherwise and any amounts which would be included in any of the above but for any discharge, non-provability, unenforceability or non-allowance of those amounts in any insolvency proceeding or other proceedings.

Senior Secured Facilities Documents and Pari Passu Debt Documents

The Intercreditor Agreement allows the relevant Senior Secured Lenders and the Pari Passu Creditors and the Debtors to amend or waive the terms of the Senior Secured Facilities Documents and the Pari Passu Debt Documents in accordance with their terms (and subject to any consent required under them) at any time, provided that the terms thereof may not be amended or waived if such amendment or waiver would conflict with the provisions of the Intercreditor Agreement.

Security and Guarantees—Senior Secured Lenders and Pari Passu Creditors

The Intercreditor Agreement provides that the Senior Secured Lenders and the Pari Passu Creditors may take, accept or receive the benefit of (a) any lien from any member of the Group in respect of the Senior Secured Facilities Obligations or the Pari Passu Debt Obligations in addition to the Transaction Security granted under the Transaction Security Documents if and to the extent legally possible (and subject to and in accordance with the Security Principles) at the same time it is also offered (in the case of the Second Lien Debt Obligations, only to the extent required in the relevant Second Lien Debt documents) either: (i) to the Security Agent as trustee and/or security agent for the other Secured Parties in respect of the Obligations owed to them and/or as creditor under a parallel debt or equivalent structure corresponding to such Obligations; or (ii) in the case of any jurisdiction in which effective liens cannot be granted in favor of the Security Agent as trustee and/or security agent for the Secured Parties, (A) to the other Secured Parties in respect of the Obligations owed to them or (B) to the Security Agent under a parallel debt structure corresponding to the Obligations owed to all the Secured Parties and, in each case of clause (i) and (ii), ranks in the same order of priority as described in the section "—*Ranking and Priority*"; and (b) any guarantee, indemnity or other assurance against loss from any member of the Group in respect of the Senior Secured Facilities Obligations or the Pari Passu Debt Obligations (as applicable) in addition to those in (i) the Intercreditor Agreement, (ii) any guarantee, indemnity or other assurance against loss in respect of any of the Obligations, the benefit of which is, to the extent legally possible and subject to the security principles set forth in the 2014 Term Loan Facilities Agreement (the "**Security Principles**"), given to all the Secured Parties in respect of the Obligations owed to them by any member of the Group, or (iii) the 2014 Term Loan Facilities Agreement, if and to the extent legally possible (and subject to and in accordance with the Security Principles) at the same time it is also offered (in the case of the Second Lien Debt Obligations, only to the extent required in the relevant Second Lien Debt Documents) to the other Secured Parties in respect of the Obligations owed to them and ranks in the same order of priority as described in the section "—*Ranking and Priority*".

Limitations on Enforcement—Senior Secured Lenders and Pari Passu Creditors

The Intercreditor Agreement provides that a lender under the 2014 Term Loan Facilities Agreement (a "**Senior Secured Lender**") or Pari Passu Creditor (including a holder of the 2026 Senior Secured Notes, a holder of the 2027 Senior Secured Notes or a lender under the 2020 Term Loan Facilities Agreement) may not take any Enforcement Action under clause (c) or (to the extent such action is directly related to the enforcement of Transaction Security) under clause (e) of the definition thereof without the prior written consent of the Majority Senior Secured Creditors (defined below under "—*Amendments*"). However, after the occurrence of an insolvency event in relation to a Debtor, each Senior Secured Lender and Pari Passu Creditor may, to the extent it is able to do so under the relevant Senior Secured documents, take Enforcement Action under paragraph (e) of the definition thereof and/or claim in the winding up, dissolution, administration, reorganization or similar insolvency event of that Debtor for Senior Secured Obligations owing to it (but, for the avoidance

of doubt, may not direct the Security Agent to enforce the Transaction Security in any manner without the prior consent of the Majority Senior Secured Creditors).

Intercreditor Matters between Senior Secured Lenders and Pari Passu Creditors

The Intercreditor Agreement does not restrict the entry into other intercreditor and/or subordination agreements (including agreements establishing additional first and second lien tranches) by and among any Senior Secured Lenders and Pari Passu Creditors (including holders of the 2026 Senior Secured Notes, holders of the 2027 Senior Secured Notes and lenders under the 2020 Term Loan Facilities Agreement) to the extent the terms of such agreement address (i) matters relating to the payment priority as between such parties (or their representatives), (ii) the ability to exercise any rights granted under the Intercreditor Agreement to such creditors, (iii) other matters customary for intercreditor agreements of such type and/or (iv) any other matters related thereto; provided, that such agreement shall not conflict with the terms of the Intercreditor Agreement.

Second Lien Debt Creditors and Second Lien Debt Documents

The Intercreditor Agreement allows the relevant Second Lien Debt Creditors (including holders of the Senior Notes) and the Debtors to amend or waive the terms of the Second Lien Debt documents (other than the Intercreditor Agreement and any Shared Security document) in accordance with their terms (and, any relevant consent required in any of them, as applicable) at any time, provided that the terms thereof may not be amended or waived if such amendment or waiver would conflict with the provisions the Intercreditor Agreement, the terms of the Senior Secured Facilities documents (unless approved in writing by the Administrative Agent) or the Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement) (unless approved in writing by the relevant Pari Passu Debt Representative(s) (in the case of the 2026 Senior Secured Notes Indenture, the 2026 Senior Secured Notes Trustee, in the case of the 2027 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Trustee and, in the case of the 2020 Term Loan Facilities Agreement, the administrative agent thereunder)).

Security and Guarantees—Second Lien Debt Creditors

The Intercreditor Agreement provides that except with the prior consent of the Majority Senior Secured Creditors, the Second Lien Debt Creditors may only take, accept or receive the benefit of (a) any lien from any member of the Group in respect of the Second Lien Debt Obligations in addition to the Transaction Security if and to the extent legally possible, at the same time it is also offered either: (i) to the Security Agent as agent for the Senior Secured Creditors and the other Second Lien Debt Creditors; or (ii) in the case of any jurisdiction in which an effective lien cannot be granted in favor of the Security Agent as agent for the Secured Parties (defined below): (A) to the Senior Secured Creditors and the other Second Lien Debt Creditors in respect of the Obligations owed to them; (B) to the Security Agent as agent for the Senior Secured Creditors and the other Second Lien Debt Creditors in respect of the Obligations owed to them; and/or (C) to the Security Agent under a parallel debt or equivalent structure corresponding to the relevant Obligations owed to the Senior Secured Creditors and the other Second Lien Debt Creditors, and ranks in the same order of priority as described in the section "—*Ranking and Priority*"; and (b) any guarantee, indemnity or other assurance against loss from any member of the Group in respect of the Second Lien Debt Obligations in addition to those in: (i) the original form of any Second Lien Debt document; or (ii) the Intercreditor Agreement, if and to the extent legally possible and subject to any Security Principles, at the same time it is also offered to the Senior Secured Creditors and the other Second Lien Debt Creditors in respect of the Obligations owed to them and ranks in the same order of priority as described in the section "—*Ranking and Priority*".

The Intercreditor Agreement does not purport to restrict any Second Lien Debt Creditor from taking, accepting or receiving the benefit of any lien, guarantee, indemnity or other assurance against loss from any person which is not a member of the Group in respect of the Second Lien Debt Obligations or any liabilities of any issuer/borrower of Second Lien Debt or any person which is not a member of the Group arising under or in connection with any Second Lien Debt documents.

Restriction on Payment and Dealings: Second Lien Debt Obligations

Under the Intercreditor Agreement, until the discharge date for Senior Secured Obligations (the "**Senior Secured Discharge Date**") except with the prior consent of (a) the Administrative Agent (to the extent otherwise prohibited under the 2014 Term Loan Facilities Agreement and the relevant Pari Passu Debt Representative(s) (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement) (to the extent not prohibited under the relevant Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement)), the Company will ensure that no member of the Group will:

(a) pay, repay, prepay, redeem, acquire or defease any principal, interest or other amount on or in respect of, or make any distribution in respect of, any Second Lien Debt Obligations in cash or in kind or apply any such money or property in or towards discharge of any Second Lien Debt Obligations except as permitted by the sections of the Intercreditor Agreement described herein under "*—Permitted Second Lien Debt Payments*", "*—Permitted Second Lien Debt Enforcement*", "*—Refinancing of Senior Secured Obligations and Second Lien Debt Obligations*" or "*—Filing of Claims*"); or

(b) exercise any set-off against any Second Lien Debt Obligations except as permitted by the sections of the Intercreditor Agreement described herein under "*—Permitted Second Lien Debt Payments*", "*—Permitted Second Lien Debt Enforcement*" or "*—Filing of Claims*").

Permitted Second Lien Debt Payments

The Intercreditor Agreement provides that the Debtors may:

(a) prior to the Senior Secured Discharge Date, make payments to the Second Lien Debt Creditors in respect of the Second Lien Debt Obligations (including the Senior Notes) then due in accordance with the Second Lien Debt documents (i) if: (A) the payment is of: (I) any of the principal amount (including capitalized interest, if any) of the Second Lien Debt Obligations which is permitted to be paid by the 2014 Term Loan Facilities Agreement (if the Senior Secured Facilities Discharge Date has not occurred) and the Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement) (if the Pari Passu Debt Discharge Date has not occurred); or (II) any other amount which is not an amount of principal or capitalized interest which is permitted to be made by the Senior Secured Facilities documents and the Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement); (B) no Second Lien Debt Payment Stop Notice (defined below under "*—Issue of Second Lien Debt Payment Stop Notice*") is outstanding; and (C) no payment default (subject to a €1 million *de minimis* exception) in respect of Senior Secured Obligations has occurred and is continuing; (ii) if the Administrative Agent and the Pari Passu Debt Representative(s) (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement), as applicable, give prior consent to that payment being made to the extent the relevant Debt Documents prohibit such payment from being made; (iii) if the payment is of a Second Lien Debt Representative Amount; (iv) if the payment is of costs, commissions, tax (including amounts payable by way of gross-up for tax), consent fees, premiums, original issue discount and upfront fees, premiums and expenses incurred in respect of (or reasonably incidental to) the Second Lien Debt documents (including in relation to any reporting or listing requirements under the Second Lien Debt documents); (v) if the payment is of costs, commissions, tax (including amounts payable by way of gross-up for tax), consent fees, original issue discount and upfront fees, premiums and any expenses incurred in respect of (or reasonably incidental to) any refinancing of any Second Lien Debt in compliance with the sections of the Intercreditor Agreement described herein under "*—Refinancing of Senior Secured Obligations and Second Lien Debt Obligations*"; (vi) if the payment is by the Parent, any Parent Intermediate Holdco or issuer/borrower of Second Lien Debt (including IQF1) any of its obligations under the Second Lien Debt documents (including the Senior Notes) and such payment is not financed by a payment to the Parent, any Parent Intermediate Holdco or issuer/borrower of Second Lien Debt (including IQF1) from a member of the Group that was prohibited by the Senior Secured Facilities documents or the Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement) pursuant to which any Senior Secured Obligations are outstanding; (vii) if the payment is of any other amount not exceeding €1 million in aggregate in any twelve-month period; or (viii) if the payment is of the principal amount (including capitalized interest, if any) of the Second Lien Debt Obligations on or after the final maturity date of the relevant Second Lien Debt Obligations (provided that such maturity date is (x) after the final maturity date of the Senior Secured Facilities and (y) complies with any restrictions on the maturity date of the relevant Second Lien Debt Obligations set forth in the 2014 Term Loan Facilities Agreement or any other Senior Secured Document); and

(b) on or after the Senior Secured Discharge Date, make payments to or with respect to the Second Lien Debt Creditors in respect of the Second Lien Debt Obligations in accordance with the Second Lien Debt documents.

Issue of Second Lien Debt Payment Stop Notice

(a) Under the Intercreditor Agreement, until the Senior Secured Discharge Date, except with the prior consent of (i) the Administrative Agent (to the extent either (A) not permitted or prohibited under any

Senior Secured Facilities document or (B) after the commencement of any Enforcement Action permitted by the terms of the Intercreditor Agreement) and (ii) the relevant Pari Passu Debt Representative(s) (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement) (to the extent either (A) not permitted or prohibited under the relevant Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement) or (B) after the commencement of any Enforcement Action permitted by the terms of the Intercreditor Agreement), and subject to the sections of the Intercreditor Agreement described herein under "*—Effect of Insolvency Event*", the Company will procure that no member of the Group will make, and no Second Lien Debt creditor (including holders of the Senior Notes) may receive from any member of the Group, any payment in respect of Second Lien Debt (other than those in clauses (a)(ii) and/or (a)(iii) under*—Permitted Second Lien Debt Payments*) if:

(1) a payment default in respect of the Senior Secured Obligations has occurred and is continuing; or

(2) an event of default in respect of the Senior Secured Obligations (a "**Senior Secured Event of Default**") (other than a payment default) has occurred and is continuing, from the date on which the Administrative Agent or any Pari Passu Debt Representative (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement) (as the case may be) (the "**Relevant Representative**") delivers a notice (a "**Second Lien Debt Payment Stop Notice**") specifying the event or circumstance in relation to that Senior Secured Event of Default to the Company, the Security Agent and the Second Lien Debt Representative(s) until the earliest of:

(a) the date falling 179 days after delivery of that Second Lien Debt Payment Stop Notice;

(b) in relation to payments of Second Lien Debt Obligations, if a Second Lien Debt Standstill Period is in effect at any time after delivery of that Second Lien Debt Payment Stop Notice, the date on which that Second Lien Debt Standstill Period expires;

(c) the date on which the relevant Senior Secured Event of Default is no longer continuing and, if the relevant obligations of Senior Secured Creditors have been accelerated, such acceleration has been rescinded, revoked or waived in accordance with the Senior Secured documents;

(d) the date on which the Relevant Representative delivers a notice to the Company, the Security Agent, each of the Senior Creditors and the Second Lien Debt Representative(s) (including the Senior Notes Trustee) cancelling the Second Lien Debt Payment Stop Notice it delivered;

(e) the Senior Secured Discharge Date; and

(f) the date on which any Second Lien Debt Creditor takes any Enforcement Action that it is permitted to take under the sections of the Intercreditor Agreement described herein under "*—Restrictions on Enforcement by Second Lien Debt Creditors*" and "*Permitted Second Lien Debt Enforcement*".

(b) Unless the relevant Second Lien Debt Representative waives this requirement: (i) a new Second Lien Debt Payment Stop Notice may not be delivered unless and until 360 days have elapsed since the delivery of the immediately prior Second Lien Debt Payment Stop Notice; and (ii) no Second Lien Debt Payment Stop Notice may be delivered in reliance on a Senior Secured Event of Default more than 45 days after the date on which the Administrative Agent and each Pari Passu Debt Representative (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement) received notice of that Senior Secured Event of Default.

(c) The Administrative Agent and the Pari Passu Debt Representative(s) (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement) may serve only one Second Lien Debt Payment Stop Notice with respect to the same event or set of circumstances. Subject to paragraph (b) above, this shall not affect the right of the Administrative Agent or the Pari Passu Debt Representative(s) (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term

Loan Facilities Agreement) to issue a Second Lien Debt Payment Stop Notice in respect of any other event or set of circumstances.

(d) No Second Lien Debt Payment Stop Notice may be served by the Administrative Agent or the Pari Passu Debt Representative(s) (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement) in respect of a Senior Secured Event of Default which had been notified to the Administrative Agent or the Pari Passu Debt Representative(s) (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement), as relevant, at the time at which an earlier Second Lien Debt Payment Stop Notice was issued.

(e) These provisions of the Intercreditor Agreement (i) act as a suspension of payment and not as a waiver of the right to receive payment on the date such payments are due; (ii) will not prevent the accrual or capitalization of interest (including default interest) in accordance with any Second Lien Debt documents; (iii) will not prevent the payment of the amounts described in clause (a)(ii) and (a)(iii) in the section "—*Permitted Second Lien Debt Payments*"); (iv) will not prevent the payment of audit fees, directors' fees, taxes, securities and listing fees and other proper and incidental expenses required to maintain existence; and (v) will not prevent the Parent, any Parent Intermediate Holdco or any issuer/borrower of Second Lien Debt (including IQF1) from making a payment from its own assets if such payment is of any of the Parent's, such Parent Intermediate Holdco's or such issuer/borrower's obligations under the Second Lien Debt documents (including the Senior Notes Indenture) and, for the avoidance of doubt, such payment is not financed by a payment to the Parent, such Parent Intermediate Holdco or such issuer/borrower of Second Lien Debt from a member of the Group which was prohibited by the Senior Secured Facilities documents or the Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement).

Effect of Second Lien Debt Payment Stop Notice or Senior Secured Payment Default

Under the Intercreditor Agreement, any failure to make a payment due under the Second Lien Debt documents as a result of the issue of a Second Lien Debt Payment Stop Notice or the occurrence of a Senior Secured Payment Default or by operation of the sections of the Intercreditor Agreement described herein under "*—Restriction on Payment and Dealings: Second Lien Debt Obligations*" and "*Issue of Second Lien Debt Payment Stop Notice*":

(a) will not prevent the occurrence of an event of default as a consequence of that failure to make a payment in relation to the relevant Second Lien Debt documents;

(b) will not prevent the issue of a Second Lien Debt Enforcement Notice (defined below) on behalf of the Second Lien Debt Creditors;

(c) will act as a suspension of payment and not as a waiver of the right to receive payment on the date such payments are due;

(d) will not release any Debtor from the liability to make any payment under any Second Lien Debt document and will not prevent the accrual or capitalization of interest (including default interest) in accordance with the relevant Second Lien Debt documents;

(e) will not prevent the payment of audit fees, directors' fees, due and payable taxes and other proper and incidental expenses required to maintain existence; and

(f) will not prevent the payment of Representative Obligations due and payable to the Second Lien Debt Representative(s).

Payment obligations and capitalization of interest continue

The Intercreditor Agreement provides that no Debtor shall be released from the liability to make any payment (including of default interest, which shall continue to accrue) under any Second Lien Debt document by operation of the sections of the Intercreditor Agreement described herein under "*—Restriction on Payment and Dealings: Second Lien Debt Obligations*", "*—Issue of Second Lien Debt Payment Stop Notice*" and "*Issue of Second Lien Debt Payment Stop Notice*" even if its obligation to make that payment is restricted at any time by the terms of any of such sections of the Intercreditor Agreement. The accrual and capitalization of interest (if any) in accordance with the Second Lien Debt documents (as the case may be) shall continue notwithstanding the issue of a Second Lien Debt Payment Stop Notice.

Restrictions on Enforcement by Second Lien Debt Creditors

The Intercreditor Agreement provides that, subject to enforcement permitted as described in the section "—*Permitted Second Lien Debt Enforcement*", until the Senior Secured Discharge Date, except with the prior consent of, or as required by, an Instructing Group (or, in respect of the Transaction Security securing the Senior Secured Obligations of the Parent, any Parent Intermediate Holdco and the Company and its Restricted Subsidiaries shared with the Second Lien Debt Creditors (the "**Shared Security**"), the Majority Second Lien Debt Creditors to the extent permitted pursuant to the section of the Intercreditor Agreement described hereunder under "—*Enforcement of Transaction Security—Enforcement Instructions*"), no Second Lien Debt Creditor shall be entitled to take, or direct the Security Agent to take, any Enforcement Action against any member of the Group in respect of any of the Second Lien Debt Obligations or against any member of the Group, any Parent Intermediate Holdco, the Parent or any issuer/borrower of Second Lien Debt in respect of any Transaction Security granted by any member of the Group or, in respect of any Shared Security only, the Parent, any Parent Intermediate Holdco or any issuer/borrower of Second Lien Debt or to give instructions to the Security Agent to enforce or to refrain or cease from enforcing the Transaction Security.

Permitted Second Lien Debt Enforcement

Subject to the section of the Intercreditor Agreement described hereunder under "—*Enforcement on Behalf of Second Lien Debt Creditors*", the restrictions in section of the Intercreditor Agreement described herein under "—*Restrictions on Enforcement by Second Lien Debt Creditors*" will not apply:

(a) if: (i) an event of default under the Second Lien Debt documents (the "**Relevant Second Lien Debt Default**") is continuing; (ii) the Security Agent has received a notice of the Relevant Second Lien Debt Default specifying the event or circumstance in relation to the Relevant Second Lien Debt Default from the relevant Second Lien Debt Representative; (iii) a Second Lien Debt Standstill Period has elapsed; and (iv) the Relevant Second Lien Debt Default is continuing at the end of the relevant Second Lien Debt Standstill Period;

(b) in the circumstance where the Senior Secured Creditors take any Enforcement Action in relation to a particular Debtor which owes any Second Lien Debt Obligations, provided that the Second Lien Debt Creditors may only take the same Enforcement Action in relation to such Debtor as the Enforcement Action taken by the Senior Secured Creditors against such Debtor and not against any other Debtor or any other member of the Group;

(c) in respect of Enforcement Action in relation to the Company, the Parent, any Parent Intermediate Holdco, any other holding company of the Company or any member of the Group which is a guarantor or provides an indemnity to the Second Lien Debt Creditors (or any of them) for the Second Lien Debt Obligations (or any of them) under any Second Lien Debt Document (a "**Second Lien Debt Guarantor**") that is the subject of an insolvency event (but not, for the avoidance of doubt, against any other Debtor or any other member of the Group); or

(d) if an event of default under the Second Lien Debt documents has occurred resulting from a failure to pay the principal amount of the Second Lien Debt Obligations at the final maturity date of the relevant Second Lien Debt.

Promptly upon becoming aware of an event of default under the Second Lien Debt documents, the relevant Second Lien Debt Representative may by notice (a "**Second Lien Debt Enforcement Notice**") in writing notify the Security Agent of the existence of such event of default under the Second Lien Debt Finance Documents.

Second Lien Debt Standstill Period

In relation to a Relevant Second Lien Debt Default, a "**Second Lien Debt Standstill Period**" shall mean the period beginning on the date (the "**Second Lien Debt Standstill Start Date**") the relevant Second Lien Debt Representative serves a Second Lien Debt Enforcement Notice on the Security Agent in respect of such Relevant Second Lien Debt Default and ending on the earliest to occur of: (a) the date falling 179 days after the Second Lien Debt Standstill Start Date; (b) the date the Senior Secured Creditors take any Enforcement Action in relation to a particular Debtor which owes any Second Lien Debt Obligations; provided that in the case of this clause (b), (i) if a Second Lien Debt Standstill Period ends pursuant to this clause (b), the Second Lien Debt Creditors may only take the same Enforcement Action in relation to such Debtor as the Enforcement Action taken by the Senior Secured Creditors against such Debtor which owes Second Lien Debt Obligations and not against any other member of the Group and (ii) Enforcement Action for the purpose of this clause (b) shall not include action taken to preserve or protect any liens as opposed to realize it, (c) the date the relevant Instructing Group consents to the termination of the Second Lien Debt Standstill Period and (d) the expiry of any

other Second Lien Debt Standstill Period outstanding at the date such first mentioned Second Lien Debt Standstill Period commenced (unless that expiry occurs as a result of a cure, waiver or other permitted remedy).

Subsequent Second Lien Debt Defaults

The Intercreditor Agreement provides that the Second Lien Debt Creditors may take Enforcement Action (as described above in the section "—*Permitted Second Lien Debt Enforcement*") in relation to a Relevant Second Lien Debt Default even if, at the end of any relevant Second Lien Debt Standstill Period or at any later time, a further Second Lien Debt Standstill Period has begun as a result of any other event of default under the Second Lien Debt Finance Documents.

Enforcement on Behalf of Second Lien Debt Creditors

If the Security Agent has notified the Second Lien Debt Representative(s) that it is taking, or has been instructed by an Instructing Group to take, any Enforcement Action in relation to any Debtor or any part of the Transaction Security owned by a Debtor or its subsidiaries, the Intercreditor Agreement prohibits any Second Lien Debt Creditor from taking any action referred to in the section of the Intercreditor Agreement described herein under "—*Permitted Second Lien Debt Enforcement*" against any Debtor (but, in the case of the Parent, any Parent Intermediate Holdco or any issuer/borrower of Second Lien Debt (including IQF1), only to the extent relating to any Shared Security) while the Security Agent (i) has requested instructions from the applicable Instructing Group in relation to the enforcement of those liens and the relevant instructions have not been given or (ii) is taking steps to enforce liens or taking Enforcement Action in relation to a Debtor (but in the case of the Parent, any Parent Intermediate Holdco or any issuer/borrower of Second Lien Debt (including IQF1), only to the extent relating to any Shared Security), in each case, in accordance with the instructions of the Instructing Group (or, in respect of the Shared Security, the Majority Second Lien Debt Creditors to the extent permitted pursuant to the section of the Intercreditor Agreement described hereunder under "—*Enforcement of Transaction Security—Enforcement Instructions*") where such action, in the sole opinion of the Security Agent, might be reasonably likely to adversely affect such enforcement or Enforcement Action or the amount of proceeds to be derived therefrom.

The Intercreditor Agreement provides that if the Second Lien Debt Creditors are permitted to give instructions to the Security Agent to require the enforcement of the Transaction Security constituted pursuant to any Security Document, such enforcement of the Transaction Security must require the realization of the relevant Transaction Security by way of a sale or disposal conducted in compliance with the Distressed Disposal provisions of the Intercreditor Agreement (see the section "—*Distressed Disposals*").

"**Enforcement**" means the enforcement or disposal of the Transaction Security, the requesting of a Distressed Disposal and/or the release or disposal of claims and/or Transaction Security on a Distressed Disposal under the section of the Intercreditor Agreement described herein under "—*Distressed Disposals*", the giving of instructions as to actions in respect of any Transaction Security following an insolvency event and the taking of any other actions consequential on (or necessary to effect) any of the foregoing.

"**Instructing Group**" means either (a) in relation to any consent or instructions relating to Enforcement, (i) prior to the Senior Secured Discharge Date, the Majority Senior Secured Creditors (as defined below under "—*Amendments*"); or (ii) on or after the Senior Secured Discharge Date, but prior to the discharge date for Second Lien Debt (the "**Second Lien Debt Discharge Date**"), the Majority Second Lien Debt Creditors (as defined below under "—*Amendments*"); or (b) where any matter requires the consent of or instruction from (but excluding any consent or instruction in relation to Enforcement as set out in clause (a) above) (i) prior to the Senior Secured Discharge Date, the Majority Senior Secured Creditors and (with respect to any Parent Pari Passu Recoveries) the Majority Second Lien Debt Creditors (as defined below under "—*Amendments*"); and (ii) on or after the Senior Secured Discharge Date, but prior to the Second Lien Debt Discharge Date, the Majority Second Lien Debt Creditors.

Incremental Obligations and Refinancings

Additional Senior Secured Obligations and Additional Second Lien Debt Obligations

The Intercreditor Agreement provides that to the extent permitted by, and subject to compliance with the requirements of, the Intercreditor Agreement and the other Debt Documents: (a) the Senior Secured Lenders may increase the Senior Secured Facilities and make further loans and/or advances under such Senior Secured Facilities to members of the Group and each such advance or increased amount will be deemed to be made under the terms of the 2014 Term Loan Facilities Agreement and rank as Senior Secured Facilities Obligations in the manner described in the section "—*Ranking and Priority*"; (b) a Debtor may incur Pari Passu Debt Obligations under a Pari Passu Debt document (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement) which will rank as Pari Passu Debt Obligations in the manner described in the section "—*Ranking and Priority*"; and (c) a Debtor may incur Second Lien Debt Obligations under a Second Lien Debt document (including the Senior Notes

Indenture) which will rank as Second Lien Debt Obligations in the manner described in the section "—*Ranking and Priority*" (such Obligations under clauses (a), (b) and (c) above, the "**Additional Secured Obligations**").

Refinancing of Senior Secured Obligations and Second Lien Debt Obligations

The Intercreditor Agreement provides that the Senior Secured Obligations and Second Lien Debt Obligations, with the consent of the Parent, may be refinanced or replaced in whole or in part and in each case on terms and in a manner that does not breach the terms of the Intercreditor Agreement, the 2014 Term Loan Facilities Agreement, any Pari Passu Debt Document (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement) or any Second Lien Debt Document (including the Senior Notes Indenture) without the consent of any other Creditors and: (a) any Obligations incurred by any Debtor or other member of the Group pursuant to such refinancing or replacement of any Senior Secured Facilities Obligations (the "**Senior Secured Lender Refinancing Obligations**"), Pari Passu Debt Obligations (the "**Pari Passu Debt Refinancing Obligations**"), or Second Lien Debt Obligations (the "**Second Lien Debt Refinancing Obligations**" and, together with the Senior Secured Lender Refinancing Obligations and the Pari Passu Debt Refinancing Obligations, the "**Secured Refinancing Obligations**") will, to the extent so designated by the Parent: (i) in the case of Senior Secured Lender Refinancing Obligations, rank as Senior Secured Facilities Obligations in the manner described in the section "—*Ranking and Priority*"; (ii) in the case of Pari Passu Debt Refinancing Obligations, rank as Pari Passu Debt Obligations in the manner described in the section "—*Ranking and Priority*"; and (iii) in the case of Second Lien Debt Refinancing Obligations, rank as Second Lien Debt Obligations in the manner described in the section "—*Ranking and Priority*"; (b) subject to the Security Principles and to the section of the Intercreditor Agreement described under "—*Retaking of Liens*", the applicable Security Documents will secure the Secured Refinancing Obligations and in respect of such Security Documents and any new security granted by the Parent, any Parent Intermediate Holdco, any issuer/borrower of Second Lien Debt (including IQF1) or any member of the Group to secure such Secured Refinancing Obligations, such Secured Refinancing Obligations will: (i) in the case of Senior Secured Lender Refinancing Obligations, rank as Senior Secured Facilities Obligations in the manner described in the section "—*Ranking and Priority*"; and (ii) in the case of Pari Passu Debt Refinancing Obligations, rank as Pari Passu Debt Obligations in the manner described in the section "—*Ranking and Priority*"; and (iii) in the case of Second Lien Debt Refinancing Obligations, rank as Second Lien Debt Obligations in the manner described in the section "—*Ranking and Priority*"; and (c) the Intercreditor Agreement will be construed to permit the assumption of any Secured Refinancing Obligations and to give effect to the ranking set out in clauses (a) and (b) above, provided that: (i) any trustee or representative of the creditors of such Secured Refinancing Obligations (a "**Refinancing Representative**") becomes a party to the Intercreditor Agreement in accordance therewith as the applicable Creditor Representative; and (ii) each creditor in relation to such Secured Refinancing Obligations (that is not a Refinancing Representative) becomes a party to the Intercreditor Agreement in accordance therewith or is deemed to be a party to the Intercreditor Agreement pursuant to the terms of its relevant finance documents.

Retaking of Liens

The Intercreditor Agreement provides that if any Transaction Security over any asset under the applicable Security Document is required or requested by the Company to be amended, extended, renewed, restated, supplemented or otherwise modified, replaced or released to ensure that the Additional Secured Obligations or Secured Refinancing Obligations described herein can be secured with the ranking of such Obligations contemplated under the section of the Intercreditor Agreement described under "—*Retaking of Liens*" or "—*Refinancing of Senior Secured Obligations and Second Lien Debt Obligations*", as the case may be, then the Security Agent is authorized to effect such amendment, extension, renewal, restatement, supplement, modification, replacement or release the applicable Security Documents (as applicable); provided that (i) substantially concurrently with such release of Transaction Security (as determined in good faith by the Company, it being agreed that in making such determination the Company may take into account the occurrence of any related transactions and that the re-taking need not occur on the same day as the release), new Transaction Security shall be provided in favor of the providers of such Additional Secured Obligations or Secured Refinancing Obligations and the existing Senior Secured Creditors and Second Lien Debt Creditors on terms substantially the same as the terms of the applicable Security Documents so released and subject to the same ranking as set out in the Section of the Intercreditor Agreement described under "—*Ranking and Priority*"; and (ii) contemporaneously with such amendment, extension, replacement, restatement, supplement, modification, renewal or release (followed by the substantially concurrent retaking of liens in accordance with the preceding clause (i)) the Company delivers to the Security Agent either: (A) a solvency opinion, in form and substance reasonably satisfactory to the Security Agent from an accounting, appraisal or investment banking firm of national standing confirming the solvency of the Parent and its Restricted Subsidiaries, taken as a whole, after giving effect to any transactions related to such amendment, extension, renewal, restatement, supplement, modification or replacement or release and retaking; (B) a certificate from the chief financial officer or the board of directors of the Company or the Parent (acting in good faith) which confirms the solvency of the Parent and its Restricted Subsidiaries, taken as a whole, after giving effect to any transactions related to such amendment, extension, renewal, restatement, supplement, modification or replacement or release and retaking; or (C) an opinion of counsel, in form and substance reasonably satisfactory to the Security Agent (subject to customary exceptions and qualifications), confirming that, after giving effect to any transactions related to such amendment, extension, renewal, restatement, supplement,

modification, replacement or release and retaking, the Transaction Security created under the applicable Security Documents so amended, extended, renewed, restated, supplemented, modified, replaced or released and retaken is valid and perfected Transaction Security not otherwise subject to any limitation, imperfection or new hardening period, in equity or at law, that such Transaction Security was not otherwise subject to immediately prior to such amendment, extension, renewal, restatement, supplement, modification, replacement or release and retaking.

Second Lien Debt Required Holders

In connection with any issuance of Second Lien Debt, the Intercreditor Agreement provides that some or all of the references herein to the Majority Second Lien Debt Creditors (other than as relating to matters of enforcement) may be amended to refer to the Second Lien Debt Required Holders.

Effect of Insolvency Event

Payment of Distributions

The Intercreditor Agreement provides that after the occurrence of an insolvency event in relation to any Debtor, any member of the Group, or any issuer/borrower of Second Lien Debt (including IQF1), any party entitled to receive a distribution out of the assets of such Debtor, member of the Group or issuer/borrower of Second Lien Debt in respect of Obligations owed to that party shall, to the extent it is able to do so, direct the person responsible for the distribution of the assets of such Debtor or member of the Group or issuer/borrower of Second Lien Debt to pay that distribution to the Security Agent until the Obligations owing to the Secured Parties have been paid in full. The Security Agent shall apply distributions paid to it in accordance with the terms of the Intercreditor Agreement (see the section "—*Application of Proceeds*").

Set-Off

Under the Intercreditor Agreement, to the extent that the Obligations of any Debtor, member of the Group or issuer/borrower of Second Lien Debt (including IQF1) are discharged by way of set-off (mandatory or otherwise) after the occurrence of an insolvency event in relation to such Debtor, member of the Group or issuer/borrower of Second Lien Debt, any creditor which benefited from that set-off shall to the extent legally permissible, pay an amount equal to the amount of the Obligations owed to it which are discharged by that set-off to the Security Agent for application in accordance with the terms of the Intercreditor Agreement (see the section "—*Application of Proceeds*"). The set-off provisions in the Intercreditor Agreement shall not apply to certain netting by a Hedge Counterparty nor any set-off which gives effect to a payment permitted by the provisions of the Intercreditor Agreement in respect of enforcement by intra-Group lenders.

Non-cash Distributions

Under the Intercreditor Agreement, if the Security Agent or any other Primary Creditor receives a distribution in a form other than in cash in respect of any of the Obligations, the Obligations will not be reduced by that distribution until and except to the extent that the realization proceeds are actually applied towards the Obligations.

Filing of Claims

The Intercreditor Agreement provides that after the occurrence of an insolvency event in relation to any Debtor or member of the Group, each creditor of such person irrevocably authorizes the Security Agent (acting in accordance with the section of the Intercreditor Agreement described under "—*Security Agent Instructions*"), on its behalf, to: (a) take any Enforcement Action (in accordance with the terms of the Intercreditor Agreement and the relevant Debt Documents to which such creditor is a party) against such person; (b) demand, sue, prove and give receipt for any or all of such person's Obligations; (c) collect and receive all distributions on, or on account of, any or all of such person's Obligations; and (d) file claims, take proceedings and do all other things the Security Agent considers reasonably necessary to recover such person's Obligations.

Further Assurance—Insolvency Event

The Intercreditor Agreement provides that each creditor will (a) do all things that the Security Agent (acting in accordance with the section of the Intercreditor Agreement described under "—*Security Agent Instructions*") reasonably requests in order to give effect to the section of the Intercreditor Agreement described under this section "*Effect of Insolvency Event*" and (b) if the Security Agent is not entitled to take any of the actions contemplated thereby or if the Security Agent (acting in accordance with the section of the Intercreditor Agreement described under "—*Security Agent Instructions*") reasonably requests that a creditor take that action, undertake such action in accordance with the instructions of the Security Agent (acting in accordance with the section of the Intercreditor Agreement described under "—*Security Agent Instructions*") or grant a power of attorney to the Security Agent (on such terms as the Security Agent (acting in

accordance with the section of the Intercreditor Agreement described under "—*Security Agent Instructions*") may reasonably require) to enable the Security Agent to take such action.

Security Agent Instructions

The Intercreditor Agreement provides that for the purposes of the sections of the Intercreditor Agreement described under "—*Payment of Distributions*", "—*Filing of Claims*", "—*Further Assurance—Insolvency Event*", the Security Agent shall act or shall refrain from acting (a) on the instructions of the relevant Instructing Group (or, in respect of the Shared Security, the instructions of the Majority Second Lien Debt Creditors to the extent permitted pursuant to the section of the Intercreditor Agreement described hereunder under "—*Enforcement of Transaction Security—Enforcement Instructions*") or (b) in the absence of any such instructions, as the Security Agent sees fit.

Turnover of Receipts

Turnover by the Creditors

The Intercreditor Agreement provides that, subject to certain exceptions, if at any time prior to the final discharge date of the Secured Obligations (the "**Final Discharge Date**"), any creditor receives or recovers (a) any payment or distribution of, or on account of or in relation to, any of the Obligations which is not either (i) a payment permitted under the Intercreditor Agreement or (ii) made in accordance with the application of proceeds waterfall (as described in the section "—*Application of Proceeds*"); (b) other than where set-off applies (as described in the section "—*Effect of Insolvency Event—Set-Off*"), any amount by way of set-off in respect of any of the Obligations owed to it which does not give effect to a payment permitted under the Intercreditor Agreement; (c) notwithstanding clauses (a) and (b) above, and other where set-off applies (as described in the section "—*Effect of Insolvency Event—Set-Off*"), any amount: (i) on account of, or in relation to, any of the Obligations: (A) during the continuation of a Distress Event; or (B) as a result of any other litigation or proceedings against a Debtor or member of the Group (other than during the continuation of an insolvency event in respect of such person); or (ii) by way of set-off in respect of any of the Obligations owed to it during the continuation of a Distress Event; (d) the proceeds of any enforcement of any Transaction Security or the proceeds of any Distressed Disposal, in each case, except in accordance with the application of proceeds waterfall (as described in the section "—*Application of Proceeds*"); or (e) other than where the section of the Intercreditor Agreement described under "—*Effect of Insolvency Event—Payment of Distributions*" or "—*Effect of Insolvency Event—Set-Off"* applies, any distribution in cash or in kind or payment of, or on account of or in relation to, any of the Obligations owed by any Debtor or any member of the Group which is not in accordance with the application of proceeds waterfall (as described in the section "—*Application of Proceeds*") and which is made as a result of, or after, the occurrence of an insolvency event in respect of such person, that creditor will (i) in relation to receipts and recoveries not received or recovered by way of set-off (A) hold an amount of that receipt or recovery equal to the Relevant Obligations (or if less, the amount received or recovered) on trust for the Security Agent and promptly pay that amount to the Security Agent for application in accordance with the terms of the Intercreditor Agreement and (B) promptly pay an amount equal to the amount (if any) by which the receipt or recovery exceeds the Relevant Obligations to the Security Agent for application in accordance with the terms of the Intercreditor Agreement and (ii) in relation to receipts and recoveries received or recovered by way of set-off, promptly pay an amount equal to that recovery or receipt to the Security Agent for application in accordance with the terms of the Intercreditor Agreement.

Deferral of Subrogation

Deferral of Subrogation

(a) Under the Intercreditor Agreement, subject to (c) below, if any Senior Secured Obligations are wholly or partly paid out of any proceeds received in respect of or on account of the Second Lien Debt Obligations owing to one or more Second Lien Debt Creditors, those Second Lien Debt Creditors will to that extent be subrogated to the Senior Secured Obligations so paid (and all securities and guarantees for those Senior Secured Obligations).

(b) Subject to clause (c) below, to the extent that any Second Lien Debt Creditor (each a "**Subrogated Creditor**") is entitled to exercise rights of subrogation, each other creditor (subject in each case to it being indemnified, secured and/or prefunded to its satisfaction against any resulting costs, expenses and liabilities) will give such assistance to enable such rights to be so exercised as such Subrogated Creditor may reasonably request.

(c) No creditor or Debtor will exercise any rights which it may have by reason of the performance by it of its obligations under the Debt Documents to take the benefit (in whole or in part and whether by way of subrogation or otherwise) of any rights under the Debt Documents of any creditor which ranks ahead of it in accordance with the priorities as described in the section "—*Ranking and Priority*" until such time

as all of the Obligations owing to each prior ranking creditor (or, in the case of any Debtor prior to the Final Discharge Date, owing to each creditor) have been irrevocably paid in full.

(d) Subject to certain exceptions, no Subordinated Creditor or shareholder of the Parent will exercise any rights which it may have to take the benefit (in whole or in part and whether by way of subrogation or otherwise) of any rights under the Debt Documents of any creditor until such time as all of the Obligations owing to each creditor (other than a Subordinated Creditor or shareholder of the Parent) have been irrevocably paid in full.

Enforcement of Transaction Security

Enforcement Instructions

(a) Under the Intercreditor Agreement, the Security Agent may refrain from enforcing the Transaction Security or taking any other Enforcement Action unless instructed otherwise by the relevant Instructing Group (or, in respect of the Shared Security, by the Majority Second Lien Debt Creditors pursuant to paragraph (c) below) at the relevant time that it is entitled to give instructions.

(b) After the Transaction Security has become enforceable in accordance with its terms, the Majority Senior Secured Creditors, or if required under paragraph (c) below, the Majority Second Lien Debt Creditors, may give or refrain from giving instructions to the Security Agent to enforce or refrain from enforcing the Transaction Security as they see fit.

(c) Prior to the Senior Secured Discharge Date and subject to the Transaction Security becoming enforceable in accordance with its terms: (i) if the relevant Instructing Group has instructed the Security Agent not to enforce or to cease enforcing the Transaction Security; or (ii) in the absence of instructions from an Instructing Group subject to any time period for the giving of instructions by an Instructing Group contained in the Intercreditor Agreement, and, in each case, the relevant Instructing Group has not required any Debtor to make a Distressed Disposal, the Security Agent shall give effect to any instructions to enforce the Transaction Security from the Majority Second Lien Debt Creditors who are then entitled to give enforcement instructions to the Security Agent under the section of the Intercreditor Agreement described under "—*Permitted Second Lien Debt Enforcement*".

Manner of enforcement

If the Transaction Security is being enforced pursuant to enforcement instructions described above under "—*Enforcement Instructions*", the Intercreditor Agreement provides that the Security Agent shall enforce the Transaction Security in such manner as the relevant Instructing Group (or, in respect of the Shared Security, the instructions of the Majority Second Lien Debt Creditors to the extent permitted pursuant to the section of the Intercreditor Agreement described under "—*Enforcement Instructions*") instructs or, in the absence of any such instructions, as the Security Agent (or, in respect of the Shared Security, the instructions of the Majority Second Lien Debt Creditors to the extent permitted pursuant to the section of the Intercreditor Agreement described under "—*Enforcement Instructions*") sees fit. For the avoidance of doubt, in the absence of instructions from the relevant Instructing Group, the Security Agent will not be required to take any action.

Exercise of voting rights

(a) Subject to paragraph (c) below, the Intercreditor Agreement provides that, to the extent permitted by applicable law, if any insolvency event has occurred and is continuing, each creditor (other than any Representative) will cast its vote in any proposal put to the vote by or under the supervision of any judicial or supervisory authority in respect of any proceedings relating to the Parent, any Parent Intermediate Holdco or any issuer/borrower of Second Lien Debt (including IQF1) (insofar as it relates to the enforcement, protection or preservation of the Shared Security) or any member of the Group subject to such insolvency event as instructed by the Security Agent (subject to certain exceptions in respect of U.S. insolvency proceedings).

(b) Subject to paragraph (c) below, the Intercreditor Agreement further provides that the Security Agent shall give instructions for the purposes of paragraph (a) above in accordance with any instructions given to it by the relevant Instructing Group (or, in respect of the Shared Security, the instructions of the Majority Second Lien Debt Creditors to the extent permitted pursuant to the section of the Intercreditor Agreement described under "—*Enforcement Instructions*").

(c) The Intercreditor Agreement further provides that nothing in the section of the Intercreditor Agreement described under this "*—Exercise of voting rights*" entitles any party to exercise or require any other Primary Creditor to exercise such power of voting or representation to waive, reduce, discharge, extend the due date for (or change the basis for accrual of any) payment of, or reschedule any of, the Obligations owed to that Primary Creditor.

Waiver of Rights

The Intercreditor Agreement provides that, to the extent permitted by applicable law and subject to the sections "*—Enforcement Instructions*", "*—Exercise of voting rights*", "*—Application of Proceeds*" and "*—Distressed Disposals*", each of the Secured Parties and the Debtors waives all rights it may otherwise have to require that the Transaction Security be enforced in any particular order or manner or at any particular time or that any sum received or recovered from any person, or by virtue of the enforcement of any of the Transaction Security or of any other security interest, which is capable of being applied in or towards discharge of any of the Secured Obligations is so applied.

Enforcement through Security Agent Only

Under the Intercreditor Agreement, the Secured Parties have no independent power to enforce, or have recourse to, any of the Transaction Security or to exercise any right, power, authority or discretion arising under the applicable Security Documents except through the Security Agent. Neither the Security Agent nor any Primary Creditors shall be responsible to any intra-Group lender, shareholder of the Parent, Subordinated Creditor or Debtor for any enforcement or failure to enforce or maximize the proceeds of any enforcement of the Security Documents, to an extent greater than as provided under any applicable governing law of the applicable Security Documents.

Alternative Enforcement Actions

The Intercreditor Agreement provides that after the Security Agent has commenced Enforcement, it shall not accept any subsequent instructions as to Enforcement (save for instructions as to Enforcement that the Second Lien Debt Creditors are entitled to give under the section of the Intercreditor Agreement described under "*—Permitted Second Lien Debt Enforcement*") from anyone other than the Instructing Group that instructed it to commence such enforcement of the Transaction Security, regarding any other enforcement of the Transaction Security over or relating to shares or assets directly or indirectly the subject of the enforcement of the Transaction Security which has been commenced (and, for the avoidance of doubt, during any enforcement of the Transaction Security only clause (a) of the definition of Instructing Group shall be applicable in relation to any instructions given to the Security Agent by the relevant Instructing Group under the Intercreditor Agreement).

Transaction Security

The Intercreditor Agreement provides that (a) the security interest granted pursuant to each of the Security Documents for the benefit of the Senior Secured Creditors and the Second Lien Debt Creditors is intended to be treated as two separate and distinct liens such that such security interest (i) for the benefit of the Senior Secured Creditors is intended to be a "first" priority senior security interest and (ii) for the benefit of the Second Lien Debt Creditors is intended to be a "second" priority security interest, fully junior, subordinated and subject to the security interest granted for the benefit of the Senior Secured Creditors on the terms and conditions set forth in the Intercreditor Agreement notwithstanding the fact that a single security interest may have been granted pursuant to such Security Document, (b) each grant of Transaction Security that is Shared Security or granted for the benefit of both the Senior Secured Creditors and the Second Lien Debt Creditors shall, to the extent possible under applicable law governing such Security Documents, include language to the effect set forth in clause (a), and (c) the Senior Secured Creditors shall be entitled to interest and fees that accrue on the Senior Secured Obligations after the commencement of any insolvency event determined as if the Second Lien Debt Obligations were secured by a separate second priority security interest.

Proceeds of Disposals

In this description of the Intercreditor Agreement:

"**Distressed Disposal**" means a disposal of capital stock of, or any asset of, a member of the Group which is being effected (a) at the request of the relevant Instructing Group (or, in respect of a disposal of any capital stock or asset subject to the Shared Security, the Majority Second Lien Debt Creditors to the extent permitted pursuant to the section of the Intercreditor Agreement described under "*—Enforcement of Transaction Security—Enforcement Instructions*") in circumstances where the Transaction Security has become enforceable, (b) by enforcement, or simultaneous with the enforcement, of the Transaction Security (including the disposal of any property of a member of the Group the capital stock of which has been subject to an appropriation which is expressly permitted by the terms of the relevant Transaction Security

Document) or (c) after the occurrence of a Distress Event, by or on behalf of a Debtor to a person or persons which is, or are, not a member, or members, of the Group.

"**Distress Event**" means an Acceleration Event or the enforcement of any Transaction Security in accordance with the Transaction Security Documents.

"**Secured Parties**" means the Security Agent, any receiver or delegate and each of the Senior Secured Creditors from time to time and each of the Second Lien Debt Creditors from time to time, but, in the case of the Senior Secured Creditors or the Second Lien Debt Creditors, only if it (or, in the case of any Senior Secured Lender, Pari Passu Creditor or Second Lien Debt Creditor, its Representative) is a party to the Intercreditor Agreement or has become a party to the Intercreditor Agreement, in the appropriate capacity.

Non-Distressed Disposals

The Intercreditor Agreement provides that (a) if, in respect of a disposal, sale or transfer other than a Distressed Disposal of an asset by a Debtor or any other transaction: (i) the Company certifies for the benefit of the Security Agent that that disposal, sale or transfer or other transaction where an asset is permitted to be released from the Collateral is permitted by the Senior Secured Facilities documents, the Pari Passu Debt documents and the Second Lien Debt documents (in each case, to the extent such Debt Documents have not been terminated in accordance with the provisions of the Intercreditor Agreement and thereof) or (ii) each relevant Representative authorizes the release in accordance with the terms of the applicable Debt Documents; the Security Agent is irrevocably authorized and obliged (provided that it is satisfied that it has adequate coverage for all costs, fees and expenses in relation to such action) at the cost of the Company and without any consent, sanction, authority or further confirmation from any creditor, other Secured Party or Debtor, but subject to clause (b) below: (A) to release the Transaction Security or any other claim (relating to a Debt Document) over the asset that is subject to the disposal, sale or transfer or other such transaction; (B) where that asset consists of shares in the capital of a Debtor, to release the Transaction Security or any other claim (relating to a Debt Document) over that Debtor's assets and, to the extent that they are at such time being disposed of, sold or transferred or otherwise subject to a release in accordance with this clause (a), the assets of any Subsidiary of that Debtor or against that Debtor and, to the extent that they are at such time being disposed of, sold or transferred or otherwise subject to a release in accordance with this clause (a), the subsidiaries of that Debtor and their respective assets; and (C) to execute and deliver or enter into any release of the Transaction Security or any claim described in clauses (A) and (B) above and issue any certificates of non-crystallization of any floating charge or any consent to dealing that may, in the discretion of the Security Agent (acting reasonably), be considered necessary or desirable or as reasonably requested by the Company. For the avoidance of doubt, the Security Agent may, in its absolute discretion, rely on a certification from the Company that the disposal, sale or transfer or other transaction is as described in each of the sub-clauses of this clause (a); and in no event shall this clause (a) be construed to impose any condition to the release of Transaction Security that, by the terms of the applicable Debt Documents, is released upon the disposal, sale or transfer of the applicable asset or consummation of the applicable transaction (including upon the release of a Guarantor's guarantee of the Senior Secured Obligations and the Second Lien Debt Obligations) (a "**Non-Distressed Disposal**") and (b) in the event of a Non-Disposal, each release of Transaction Security or any claim described in clause (a) shall be contingent upon that Non-Distressed Disposal being effected and the fulfillment of any conditions to such release described in clause (a) above, as applicable, and in the event that such Non-Distressed Disposal is not effected or the conditions for such release are not fulfilled, as applicable, the Transaction Security or claim subject to that release shall continue in full force and effect as if that release had not been effected.

The Intercreditor Agreement provides that if the proceeds of a Non-Distressed Disposal are required to be applied in mandatory prepayment of any of the Senior Secured Obligations or to be offered to Secured Parties pursuant to the terms of the relevant the Senior Secured documents or the Second Lien Debt documents (other than, in each case, the Intercreditor Agreement), as applicable, then such proceeds shall be applied in or towards payment of such Senior Secured Obligations or shall be offered to the relevant Secured Parties in accordance with the terms of the relevant Senior Secured Documents or Second Lien Debt Documents (other than the Intercreditor Agreement) and the consent of any other party shall not be required for that application.

Distressed Disposals

Subject to certain exceptions in respect of intra-Group Obligations owing to certain German intra-Group Lenders by a Debtor that is a holding company of such intra-Group Lender or a subsidiary of such Debtor (but not a subsidiary of that intra-Group Lender itself) and the provisions of the Intercreditor Agreement described in the third paragraph under this "*—Distressed Disposals*") section, if a Distressed Disposal is being effected, the Intercreditor Agreement provides that the Security Agent is irrevocably authorized (at the cost of the relevant Debtor or the Company) and without any consent, sanction, authority or further confirmation from any creditor, other Secured Party or any Debtor:

(a) to release the Transaction Security or any other claim over the asset subject to the Distressed Disposal and execute and deliver or enter into any release of that Transaction Security or claim and issue any

letters of non-crystallization of any floating charge or any consent to dealing that may, in the discretion of the Security Agent, be considered necessary or desirable;

(b) if the asset subject to the Distressed Disposal consists of shares in the capital of a Debtor, to release: (A) that Debtor and any subsidiary of that Debtor from all or any part of its borrowing Obligations; its guarantee Obligations; and its other Obligations; (B) any Transaction Security granted by (I) that Debtor or any subsidiary of that Debtor over any of its assets and/or (II) the direct holding company over the shares in the capital of that Debtor; and (C) any other claim of a shareholder of the Parent, a subordinated creditor, an intra-Group lender or another Debtor or other grantor of Transaction Security over that Debtor's assets or over the assets of any Subsidiary of that Debtor, on behalf of the relevant creditors, Debtors and Representatives;

(c) if the asset subject to the Distressed Disposal consists of shares in the capital of any holding company of a Debtor, to release: (A) that holding company and any subsidiary of that holding company from all or any part of: its borrowing Obligations; its guarantee Obligations; and its other Obligations; (B) any Transaction Security granted by that holding company and any subsidiary of that holding company over any of its assets; and (C) any other claim of a subordinated creditor, an intra-Group lender or another Debtor over the assets of that holding company and any subsidiary of that holding company, on behalf of the relevant creditors, Debtors and Representatives;

(d) if the asset subject to the Distressed Disposal consists of shares in the capital of a Debtor or the holding company of a Debtor and the Security Agent (acting in accordance with the provisions of the Intercreditor Agreement described in the fourth paragraph under this "*—Distressed Disposals*" section) decides to dispose of all or any part of: (A) the Obligations (other than the Agent Obligations) or (B) the Debtor Obligations, owed by that Debtor or holding company or any subsidiary of that Debtor or holding company then: (I) if the Security Agent (acting in accordance with the provisions of the Intercreditor Agreement described in the fourth paragraph under this "*—Distressed Disposals*" section) does not intend that any transferee of those Obligations or Debtor Obligations (the "**Transferee**") will be treated as a Primary Creditor or a Secured Party for the purposes of the Intercreditor Agreement, to execute and deliver or enter into any agreement to dispose of all or part of those Obligations or Debtor Obligations, *provided*, that notwithstanding any other provision of any Debt Document, the Transferee is not be treated as a Primary Creditor or a Secured Party for the purposes of the Intercreditor Agreement and (II) if the Security Agent (acting in accordance with the provisions of the Intercreditor Agreement described in the fourth paragraph under this "*—Distressed Disposals*" section) does intend that any Transferee will be treated as a Primary Creditor or a Secured Party for the purposes of the Intercreditor Agreement, to execute and deliver or enter into any agreement to dispose of: (1) all (and not part only) of the Obligations owed to the Primary Creditors; and (2) all or part of any other Obligations and the Debtor Obligations, on behalf of, in each case, the relevant creditors and Debtors; and/or

(e) if the asset subject to the Distressed Disposal consists of shares in the capital of a Debtor or the holding company of a Debtor (the "**Disposed Entity**") and the Security Agent (acting in accordance with the provisions of the Intercreditor Agreement described in the fourth paragraph under this "*—Distressed Disposals*" section) decides to transfer (to the extent permitted by applicable law) to another Debtor (the "**Receiving Entity**") all or any part of the Disposed Entity's obligations or any obligations of any subsidiary of that Disposed Entity in respect of: the intra-Group Obligations, the Debtor Obligations, or the Subordinated Obligations; to execute and deliver or enter into any agreement to: (I) agree to the transfer of all or part of the obligations in respect of those intra-Group Obligations, Debtor Obligations or Subordinated Obligations on behalf of the relevant Intra-Group lenders, Debtors or, as the case may be, the subordinated creditor to which those obligations are owed and on behalf of the Debtors which owe those obligations; and (II) to accept the transfer of all or part of the obligations in respect of those intra-Group Obligations, Debtor Obligations or Subordinated Obligations on behalf of the Receiving Entity or Receiving Entities to which the obligations in respect of those intra-Group Obligations, Debtor Obligations or Subordinated Obligations, as the case may be, are to be transferred.

The Intercreditor Agreement requires that the net proceeds of each Distressed Disposal (and the net proceeds of any disposal of Obligations or Debtor Obligations pursuant to clause (d) above) shall be paid to the Security Agent for application in accordance with the payment waterfall, as described below in the section "*—Application of Proceeds*" as if those proceeds were the proceeds of an enforcement of the Transaction Security and, to the extent that any disposal of Obligations or Debtor Obligations has occurred pursuant to clause (d)(II) above), as if that disposal of Obligations or Debtor Obligations had not occurred.

In the case of a Distressed Disposal or a disposal of Obligations of Debtor Obligations pursuant to clause (d) above effected by or at the request of the Security Agent (acting in accordance with the second succeeding paragraph

below), the Security Agent shall take reasonable care to obtain a fair market price in the prevailing market conditions (though the Security Agent shall not have any obligation to postpone any such Distressed Disposal or disposal of Obligations or Debtor Obligations in order to achieve a higher price).

If before the Second Lien Debt Discharge Date, a Distressed Disposal is being effected such that any Second Lien Debt Obligations or any Transaction Security will be released on the basis described above, it is a further condition to any such release that either (1) the Majority Second Lien Debt Creditors have approved the release or (2) each of the following conditions is satisfied: (A) the proceeds of such sale or disposal are in cash (or substantially in cash); (B) all claims of the Primary Creditors against any member of the Group and any subsidiary of that member of the Group whose shares that are owned by a Debtor and are pledged in favor of the Primary Creditors are sold or disposed of pursuant to such Distressed Disposal, are unconditionally released and discharged concurrently with such sale (and are not assumed by the purchaser or one of its affiliates), and all liens under the Security Documents in respect of the assets that are sold or disposed of are simultaneously and unconditionally released and discharged concurrently with such sale provided that in the event of a sale or disposal of any such claim (instead of a release or discharge): (I) the relevant Instructing Group determines, acting reasonably and in good faith, that the Security Agent will recover more than if such claim was released or discharged; and (II) the Representative(s) representing the relevant Instructing Group serve a notice on the Security Agent notifying the Security Agent of the same, in which case the Security Agent shall be entitled immediately to sell and transfer such claim to such purchaser (or an affiliate of such purchaser); (C) such sale, disposal or transfer is made: (I) pursuant to a Public Auction (as that term is defined in the Intercreditor Agreement); or (II) where a financial adviser confirms in an independent opinion that the sale, disposal or transfer price is fair from a financial point of view after taking into account all relevant circumstances giving rise to such sale, disposal or transfer; provided that there shall be no obligation to postpone any such sale, disposal or transfer in order to achieve a higher price; and (D) the proceeds are applied in accordance with the payment waterfall, as described below in the section "*—Application of Proceeds*".

The Intercreditor Agreement provides that for the purposes of immediately preceding two paragraphs, the Security Agent shall act: (i) on the instructions of the relevant Instructing Group (or, in respect of the Shared Security, the Majority Second Lien Debt Creditors to the extent permitted pursuant to the section of the Intercreditor Agreement described under "*—Enforcement of Transaction Security—Enforcement Instructions*"); or (ii) in the absence of any such instructions, as the Security Agent sees fit.

Release of Unrestricted Subsidiaries

The Intercreditor Agreement provides that where a member of the Group is designated as an Unrestricted Subsidiary in accordance with the terms of the Senior Secured Facilities documents, the Pari Passu Debt documents (including the 2026 Senior Secured Notes Indenture, the 2027 Senior Secured Notes Indenture and the 2020 Term Loan Facilities Agreement) and the Second Lien Debt documents (including the Senior Notes Indenture), the Security Agent is irrevocably authorized and obliged at the cost of the Company and without any consent, sanction, authority or further confirmation from any creditor, other Secured Party or any Debtor: (i) to release the Transaction Security or any other claim (relating to a Debt Document) over that member of the Group's assets and its shares; and (ii) to execute and deliver or enter into any release of the Transaction Security or any claim described in paragraph (i) above and issue any certificates of non-crystallization of any floating charge or any consent to dealing that may, in the discretion of the Security Agent, be considered necessary or as requested by the Company.

Application of Proceeds

The Intercreditor Agreement provides that, subject to certain exceptions, amounts received or recovered by the Security Agent pursuant to the Intercreditor Agreement and any other Debt Document, including all amounts recovered by the Security Agent (acting on the instructions of the relevant Instructing Group (or, in respect of the Shared Security, the Majority Second Lien Debt Creditors to the extent permitted pursuant to the section of the Intercreditor Agreement described under "*—Enforcement of Transaction Security—Enforcement Instructions*")) in connection with the realization or enforcement of all or any part of the Transaction Security or a transaction in lieu of enforcement of Transaction Security, the proceeds of any Distressed Disposal and all amounts received by the Security Agent from another creditor pursuant to the provisions of the Intercreditor Agreement described under "*—Effect of Insolvency Event*" and "*—Turnover of Receipts*" and the provisions of the Intercreditor Agreement relating to parallel debt (the "**Recoveries**") shall be held by the Security Agent on trust to apply them at any time as the Security Agent (in its discretion) sees fit, to the extent permitted by applicable law, in the following order of priority:

(a) first, in payment or distribution to: (i) the Security Agent, any receiver or any delegate for application towards the discharge of any sums owing to any of them from any party (except in respect of parallel debt); (ii) the Administrative Agent on its own behalf and on behalf of the other Agent parties for application towards the discharge of the Agent Obligations; (iii) each Pari Passu Debt Representative (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement) on its own behalf for application

towards the discharge of the Pari Passu Debt Representative Amounts; and (iv) each Second Lien Debt Representative (including the Senior Notes Trustee) on its own behalf for application towards the discharge of the Second Lien Debt Representative Amounts on a pro rata basis and ranking *pari passu* between them;

(b) second, in payment or distribution to the Secured Parties of all costs and expenses incurred by any of them in connection with any realization or enforcement of the Transaction Security, in each case undertaken in accordance with the terms of the Intercreditor Agreement;

(c) third, in payment or distribution to: (i) other than in the case of the Parent Pari Passu Recoveries, (A) the Administrative Agent on its own behalf and on behalf of the Senior Secured Lenders for which it is the Representative; (B) the Hedge Counterparties and the Cash Management Providers; and (C) each Pari Passu Debt Representative (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement) on behalf of the Pari Passu Creditors (including the holders of the 2026 Senior Secured Notes, the holders of the 2027 Senior Secured Notes and the lenders under the 2020 Term Loan Facilities Agreement) it represents, for application towards the relevant Senior Secured Obligations (to the extent not included in clause (a) or (b) above) on a pro rata basis and ranking *pari passu* between such Senior Secured Obligations and (ii) in the case of any Parent Pari Passu Recoveries, (A) the Administrative Agent on its own behalf and on behalf of the Senior Secured Lenders for which it is the Representative; (B) the Hedge Counterparties and the Cash Management Providers; (C) each Pari Passu Debt Representative (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement) on behalf of the Pari Passu Creditors (including holders of the 2026 Senior Secured Notes, the holders of the 2027 Senior Secured Notes and the lenders under the 2020 Term Loan Facilities Agreement) it represents, for application towards the relevant Senior Secured Obligations (to the extent not included in clause (a) or (b) above) and (D) each Second Lien Debt Representative (including the Senior Notes Trustee) on behalf of the Second Lien Debt Creditors it represents (excluding, for the avoidance of doubt, any Second Lien Debt Creditors (including any holder of the Senior Notes) in respect of any Second Lien Debt Proceeds Loan) for application towards the Second Lien Obligations (to the extent not included in clause (a) or (b) above), on a pro rata basis and ranking *pari passu* between such Secured Obligations;

(d) fourth, in payment or distribution to: each Second Lien Debt Representative (including the Senior Notes Trustee) on its own behalf and on behalf of the Second Lien Debt Creditors (including holders of the Senior Notes) for which it is the Representative, for application towards the Second Lien Debt Obligations (to the extent not included in clause (a), (b) or (c)(ii) above) on a pro rata basis and *pari passu* basis between such Second Lien Debt Obligations; and

(e) fifth, the balance, if any, in payment or distribution to the relevant Debtor or other person entitled to it.

Loss Sharing

If, for any reason, any Senior Secured Obligations remain unpaid after the first date (if any) on which a Senior Secured Creditor takes enforcement action of the type described in clauses (a)(i), (a)(iii), (a)(iv) or (c) of the definition of Enforcement Action in accordance with the terms of the Intercreditor Agreement (the "**Enforcement Date**") and after the application of Recoveries and the resulting losses are not borne by the Senior Secured Creditors in the proportions which their respective exposures in respect of Senior Secured Obligations at the Enforcement Date bore to the aggregate Senior Secured Creditor Obligations owed to all Senior Secured Creditors with respect to the Senior Secured Obligations at the Enforcement Date, the Intercreditor Agreement provides that the Senior Secured Creditors will make such payments amongst themselves as the Security Agent shall require to put the Senior Secured Creditors in such a position that (after taking into account such payments) those losses are borne in those proportions.

Amendments

"**Majority Second Lien Debt Creditors**" means, at any time, those Second Lien Debt Creditors whose Second Lien Debt Obligations (excluding Obligations owed by the Company under any Second Lien Debt Proceeds Loan) at that time aggregate more than 50% of the total Second Lien Debt Obligations (excluding Obligations owed by the Company under any Second Lien Debt Proceeds Loan) outstanding at that time.

"**Majority Senior Secured Creditors**" means, at any time, those Senior Secured Creditors whose Senior Secured Creditor Obligations at that time aggregate more than 50% of the total Senior Secured Creditor Obligations outstanding at that time; provided that, for purposes of this definition, Cash Management Providers shall not be considered Senior Secured Creditors and Cash Management Obligations shall not be included in the total amount of the then outstanding Senior

Secured Creditor Obligations unless, in each case, no Senior Secured Creditor Obligations other than Cash Management Obligations are then outstanding.

"**Senior Secured Creditors**" means each Senior Secured Lender, the Pari Passu Creditors (including each Pari Passu Debt Representative), each Hedge Counterparty (to the extent that it is owed Obligations in respect of Hedging Agreements), each Cash Management Provider (to the extent it is owed Obligations under Cash Management Agreements), certain agents under the 2014 Term Loan Facilities Agreement, the Administrative Agent, the Security Agent and each Second Lien Debt Representative (to the extent of the Second Lien Debt Representative Amounts).

"**Representative**" means the Administrative Agent, each other Agent Party, each Pari Passu Debt Representative (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement) and each Second Lien Debt Representative (including the Senior Notes Trustee).

"**Second Lien Debt Required Holders**" means, in respect of any direction, approval, consent or waiver, the Second Lien Debt Representative acting on behalf of the holders of the aggregate principal amount of relevant Second Lien Debt which is not less than the principal amount of such Second Lien Debt required under the terms of the relevant Second Lien Debt document to vote in favor of such direction, approval, consent or waiver or, if the required amount is not specified, the holders holding at least a majority of the principal amount of the then outstanding Second Lien Debt, in accordance with the relevant Second Lien Debt document. In determining whether the relevant Second Lien Debt Creditors holding a principal amount of relevant Second Lien Debt which is not less than the amount of Second Lien Debt required have concurred in any direction, approval, waiver or consent, Second Lien Debt owned by any Debtor, or by any person directly or indirectly controlling or controlled by or under direct or indirect common control with any Debtor, will be considered as though not outstanding in accordance with the relevant Second Lien Debt document.

The Intercreditor Agreement provides that it may be amended subject to certain exceptions as set out therein with only the consent the Company, the Majority Senior Secured Creditors (including by acting through their applicable Representatives), the Majority Second Lien Debt Creditors (including by acting through their applicable Second Lien Debt Representatives) and the Security Agent unless it is an amendment, waiver or consent that has the effect of changing or which relates to: (a) any amendment to the redistribution provisions, to the application of proceeds provisions or the consents, amendments and override provisions; or (b) the order of priority or subordination under the Intercreditor Agreement, which shall not be made without the consent of: (i) the Representatives; (ii) the Senior Secured Lenders (including by acting through the Administrative Agent); (iii) the Pari Passu Creditors (including holders of the 2026 Senior Secured Notes, holders of the 2027 Senior Secured Notes and lenders under the 2020 Term Loan Facilities Agreement) (including by acting through their Pari Passu Debt Representative(s) (including the 2026 Senior Secured Notes Trustee, the 2027 Senior Secured Notes Trustee and the administrative agent under the 2020 Term Loan Facilities Agreement)); (iv) the Second Lien Debt Creditors (including holders of the Senior Notes) (including by acting through their Second Lien Debt Representative(s) (including the Senior Notes Trustee); (v) the Hedge Counterparties (to the extent that the amendment or waiver would adversely affect such Hedge Counterparties); (vi) the Cash Management Providers (to the extent that the amendment or waiver would adversely affect such Cash Management Providers); (vii) the Security Agent; and (viii) the Company.

The Intercreditor Agreement further provides that an amendment or waiver that relates to the provisions of the Intercreditor Agreement described under "—*Enforcement of Transaction Security*" may be made by the Majority Senior Secured Creditors and the Majority Second Lien Debt Creditors, as applicable, acting through the relevant Representative and a waiver relating to such provisions may be made by the relevant Instructing Group.

Subject to certain exceptions, with respect to Transaction Security Documents, the Intercreditor Agreement provides that (unless expressly provided for otherwise in the relevant Debt Document) the Security Agent may, if authorized by each Representative of the Senior Secured Creditors (acting in accordance with the relevant Debt Documents) and, in the case of Shared Security only, each Representative of the Second Lien Debt Creditors (acting in accordance with the relevant Debt Documents and, for the avoidance of doubt, not including any Second Lien Debt Creditors in respect of any Second Lien Debt Proceeds Loan), and if the Company consents, amend the terms of, waive any of the requirements of or grant consents under, any of the Security Documents which shall be binding all parties.

Unless expressly stated otherwise in the Intercreditor Agreement, the Intercreditor Agreement overrides anything in the Debt Documents to the contrary. Notwithstanding anything to the contrary in the Intercreditor Agreement, the preceding sentence as between any creditor and any Debtor or any member of the Group will not cure, postpone, waive or negate in any manner any default or event of default (however described) under any Debt Document as provided in the relevant Debt Document.

Option to Purchase

Subject to certain conditions, Second Lien Debt Creditors holding at least the majority of the principal amount of the then-outstanding Second Lien Debt Obligations (the "**Purchasing Creditors**") may after a Distress Event, after having given all other Second Lien Debt Creditors the opportunity to participate in such purchase, by giving not less than 30 days' notice to the Security Agent, require the transfer to them (or to a nominee or nominees), in accordance with the Intercreditor Agreement, of all, but not part, of the rights, benefits and obligations in respect of the Senior Secured Facilities Obligations, the Agent Obligations, the Cash Management Obligations and the Pari Passu Debt Obligations (a "**Senior Secured Obligations Transfer**"). The Intercreditor Agreement provides that the Purchasing Creditors may only require a Senior Secured Obligations Transfer, if at the same time, they require a transfer, subject to certain conditions, of each Hedge Agreement and all rights in respect of the Hedging Obligations owed by the Debtors to each Hedge Counterparty and all the Hedge Counterparty Obligations owed by each Hedge Counterparty in accordance with the terms of the Intercreditor Agreement (a "**Hedge Transfer**"). The Purchasing Creditors and any Hedge Counterparty may agree (in respect of the Hedge Agreements (or one or more of them) to which that Hedge Counterparty is a party) that a Hedge Transfer otherwise required by the Purchasing Creditors pursuant to the Intercreditor Agreement shall not apply to that Hedge Agreement(s) or to the Hedging Obligations and Hedge Counterparty Obligations under that Hedge Agreement(s).

Governing Law

Except with respect to certain provisions relating to Belgian and German Transaction Security, the Intercreditor Agreement and any dispute, claim or controversy arising out of or relating to the Intercreditor Agreement shall be governed by and construed in accordance with the law of the State of New York.

GLOSSARY OF SELECTED TERMS

Term	Definition
Acetic Acid ("**AA**")	Acetic acid is an organic compound primarily used in the production of vinyl acetate monomer, PTA, ethyl acetate and other esters, acetic anhydride and monochloroacetic acid.
Acetic Anhydride ("**ANH**")	Acetic anhydride is an organic compound primarily used in the production of cellulose acetate and pharmaceuticals.
Acetylene	Acetylene is a chemical compound with the formula HC_2H. It is a hydrocarbon and the simplest alkyne. This colorless gas is widely used as a fuel and a chemical building block. It is unstable in pure form and thus is usually handled as a solution.
Acrylonitrile	Acrylonitrile is a petrochemical intermediate used in the production of SAN, ABS, ASA and alpha-methylstyrene acrylonitrile (AMSAN), as well as acrylic fiber, acrylonitrile butadiene rubber, acrylamide and adiponitrile (a nylon intermediate).
Acrylonitrile butadiene styrene ("**ABS**")	ABS is a tough, scratch-resistant material with high impact resistance, which can be readily processed by most thermoplastic fabrication techniques, including injection molding (used to produce a variety of consumable and industrial goods) and extrusion (used to produce, among other things, sheet, pipe and electrical conduit). ABS properties include rigidity, toughness, impact strength, heat resistance, chemical resistance, surface hardness, luster and the ability to be processed. ABS is often colored before use and customers typically choose to buy natural (uncolored) ABS if they have suitable self-coloring facilities or pre-colored ABS if they do not.
Acrylonitrile styrene acrylate ("**ASA**")	ASA is a styrene derivative produced by introducing a grafted acrylic ester elastomer (elastic polymer) during the copolymerization reaction between styrene and acrylonitrile. ASA has good toughness and rigidity, chemical resistance and thermal stability, outstanding resistance to weather, ageing and yellowing, and high gloss.
Advantaged feedstock	Feedstock that generates more product for the same cost as compared to another feedstock.
Alkane	A fully saturated (contains no double bonds) hydrocarbon.
Alkene	An unsaturated (contains a reactive carbon-to-carbon double bond) hydrocarbon.
Alkyne	An unsaturated (contains a very reactive carbon-to-carbon triple bond) hydrocarbon.
Benzene	Benzene is the main raw material for styrene (through its use in ethylbenzene) and is mainly produced from refinery processes or as a co-product of steam cracker operations.
Biodiesel	Biodiesel refers to a vegetable oil- or animal fat-based diesel fuel consisting of long-chain alkyl (methyl, propylorethyl) esters.
Biofuels	Biofuels are liquid fuels derived from plant materials.
Bitumen	Bitumen is a mixture of organic liquids that are highly viscous, black, sticky, entirely soluble in carbon disulfide, and composed primarily of highly condensed polycyclic aromatic hydrocarbons primarily used to produce paving materials, waterproofing products, including roofing felt, and for sealing flat roofs.
Benzene	Benzene is the main raw material for styrene (through its use in ethylbenzene) and is mainly produced from refinery processes or as a co-product of steam cracker operations.
Brine	Brine is a high concentration solution of salt in water. Brine is used as an essential raw material in a wide range of applications by the chemical industry, including the production of chlor alkali products, white salt for the food industry and for water softening, and soda ash.
Butadiene	Butadiene is a flammable, colorless gas used extensively in the rubber industry for various polymerizations for plastics manufacturing. It is the key input to polybutadiene (PB), which is used in the production of HIPS and is one of the three key inputs to ABS.
Butyl acrylate	Butyl acrylate is a petrochemical intermediate used in the production of polymers and other acrylic resins.

Carbon monoxide	Carbon monoxide is a key raw material in the production of acetic acid and is produced either by the reforming of simple hydrocarbons (e.g. natural Gas, fuel oil or coal) or via partial oxidation (POx) of hydrocarbons with oxygen.
Carbon tetrachloride	Carbon tetrachloride is an organic compound with the formula CCl_4. It is a reagent in synthetic chemistry and was formerly widely used in fire extinguishers, as a precursor to refrigerants, and as a cleaning agent. It is a colorless liquid with a "sweet" smell that can be detected at low levels.
Caustic Soda	Caustic Soda is known as sodium hydroxide, an inorganic compound which is produced, in water solution, in cellrooms by passing a powerful electric current through a NaCl brine solution. Caustic soda is a widely used industrial chemical, including in pulp and paper, detergents, packaging, agriculture, environmental protection, water treatment, foodstuffs, health, textiles and in the chemical, construction and car industries. Caustic soda comes in liquid and solid forms. Liquid caustic soda is a strong base used as a chemical reagent, a pH-regulator, an ion exchange resin regenerating agent, catalyst and etching and cleaning agent. Solid caustic soda has similar properties but is manufactured by evaporation of water from liquid caustic soda, followed by solidification into micro pearls.
Caustic Potash	Caustic Potash, also known as potassium hydroxide, is an inorganic compound which is produced in cellrooms by passing a powerful electric current through a KCl brine solution. Caustic potash is mainly used in the manufacture of other potassium salts for use in soaps and detergents, fertilizers, airport and aircraft de-icing fluids and batteries.
Chlorinated paraffin	Chlorinated paraffin is a chlorine derivative that can be used as a PVC plasticizer, an extreme pressure additive for metal working fluids, a fire retardant/plasticizer in paints, a fire retardant in other components, in polyurethane foams and in a range of rubbers and carbonless copying papers.
Chloroform	Chloroform is an organic compound with the formula $CHCl_3$. It is produced as a precursor to PTFE, as well as refrigerants.
Chlorine	Chlorine (Cl) is a chemical element. Elemental chlorine (Cl_2) is commercially produced by passing a powerful electric current through a brine solution, co-produced during caustic soda or caustic potash production. Chlorine is used in the manufacture of a wide range of consumer products, the main outlet is PVC.
Chloromethane	Chloromethane, also known as methyl chloride, is a chlorine derivative used as a vital intermediate in the manufacture of silicones and PTFE polymers, as well as refrigerants. The term chloromethanes is also sometimes used generically to describe the collection of all of the chlorinated methanes, such as: methyl chloride, methylene chloride, chloroform and carbon tetrachloride.
Copolymer	A copolymer is a material created by polymerizing two or more starting compounds (monomers).
Cracker	See "Olefins cracker."
Crude glycerin	Crude glycerin is a by-product of the biodiesel production process.
Electro-chemical unit ("**ECU**")	A caustic soda ECU is a measure for chlor-alkali production corresponding to one ton of chlorine and 1.1 tons of caustic soda.
Electrolysis	Electrolysis is a method of using an electric current to drive an otherwise non-spontaneous chemical reaction.
Epichlorohydrin ("**ECH**")	ECH is an organochlorine compound and an epoxide. It is a colorless liquid with a pungent odor. It is a chemical intermediate, mainly dedicated to the manufacturing of epoxy resins used in paints and coatings, composites, adhesives and electronics. It is also used in non-epoxy applications, such as pulp and paper chemicals, water treatment and healthcare products.
Esters	Esters are chemical compounds derived by reacting an oxoacid with a hydroxyl compound such as an alcohol or phenol.
Ethylbenzene	Ethylbenzene is an intermediate made from benzene and ethylene and used to make styrene. Virtually all worldwide ethylbenzene production is consumed in the production of styrene.

Ethylbenzene dehydrogenation ("**EB**" and "**EBSM**") .... EBSM is the more traditional method for producing styrene, where ethylene is alkylated with benzene to produce ethylbenzene, which is dehydrogenated to produce styrene. This basic method has been used commercially for about 50 years, during which time it has been adapted and refined to improve the quality of the end product and to minimize the amount of energy and other resources, such as electricity, fuel, steam and cooling water, used in its production. Both the EBSM and POSM processes are large scale and capital intensive. We use the EBSM method to produce our styrene because the alternative, the POSM process, is used only when the aim is to produce propylene oxide.

Ethylene... Ethylene is a flammable gas obtained in a process called cracking, in which hydrocarbons are briefly heated, causing chemical reactions that split the carbon-hydrogen or carbon-carbon bonds of the feedstock. Ethylene is a key building block of the petrochemical industry and is used to produce a large number of higher value added chemicals, including styrene.

Ethylene dichloride ("**EDC**") .... Ethylene dichloride, also known as dichloroethane (DCE), is a liquid used as an intermediate to make PVC. It is made from ethylene and chlorine.

Ethylene glycol ("**EG**") .... EG is an industrial chemical, primarily used in the manufacture of polyesters and antifreeze/coolants. It is produced from ethylene oxide.

Ethylene oxide ("**EO**") .... Ethylene oxide is a commodity monomer used as a building block for the manufacture of a wide range of products and intermediates in the chemical industry. EO is mainly used to produce EG and industrial detergents. The products derived from ethylene oxide have many familiar applications: coolants for auto engines, polyester fibers and film. It is manufactured from ethylene and oxygen.

Expandable polystyrene ("**EPS**") .... EPS is a polystyrene that, when heated, forms a lightweight foam used for packaging and insulation purposes. Styrene is the main feedstock to produce EPS.

Feedstock.. Raw materials required for an industrial process. Common feedstocks include natural gas liquids (such as naphtha), ethylene, propylene and other olefins.

Fluoroelastomer.................................. Fluoroelastomer is a special purpose fluorocarbon-based synthetic rubber. It has wide chemical resistance and superior performance, especially in high temperature applications in different media.

Fluoropolymer .... Fluoropolymer is a fluorocarbon-based polymer with multiple strong carbon-fluorine bonds. It is characterized by a high resistance to solvents, acids and bases.

General purpose polystyrene ("**GPPS**") .... GPPS is a clear, hard, usually colorless thermoplastic resin. GPPS products are crystal-clear amorphous polystyrenes utilized in packaging, foamed containers, foam insulation, cutlery, medical lab-ware, clear cups and containers, CD jewel cases and cassette boxes.

Glycerin.. See "Crude glycerin."

High density polyethylene ("**HDPE**"). HDPE is a type of polyethylene and is a relatively tough thermoplastic. Its most common household use is container plastics. HDPE is also commonly used for molding, pipe and thin film applications.

High impact polystyrene ("**HIPS**") ..... HIPS is one of the most widely used thermoplastics, with great dimensional strength, balanced properties of impact strength and heat resistance, is easily machined, and is relatively low in cost. HIPS is essentially GPPS with around 5% to 10% rubber incorporated through a grafting process prior to polymerization.

Hydrocarbons .... Hydrocarbons is a term used to describe all compounds that consist of hydrogen and carbon. These include crude oil, natural gas, olefins and their derivatives.

Hydrochloric acid ("**HCl**").................. HCl is used in a wide variety of industrial and chemical applications, including as a manufacturing aid in the pharmaceuticals industry, metallurgy, electronics and the food industry.

Hydrochlorofluorocarbons ("**HCFCs**")..................................... HCFCs are compounds consisting of hydrogen, chlorine, fluorine and carbon. These compounds have a small ozone depletion potential and as such are regulated under the Montreal Protocol. The products are widely used in refrigeration, air conditioning and foam blowing and as a raw material feedstock.

Methanol .... Methanol is a chemical with the formula CH_3OH. It is the simplest alcohol, and at room temperature it is a polar liquid and is used as an antifreeze, solvent, fuel and as a denaturant for ethanol. It is also used for producing biodiesel via transesterification reaction.

Methyl chloride .... See "Chloromethane".

Term	Definition
Methylene chloride	Methylene chloride is an organic compound with the formula CH_2Cl_2. This colorless, volatile liquid is widely used as a solvent.
Methylene diphenyl diisocyanate	Methylene diphenyl diisocyanate, most often abbreviated as MDI, is an aromatic diisocyanate. It can be reacted with polyols to make polyurethane.
Methyl methacrylate-ABS ("**MABS**")	MABS is a copolymer of methyl methacrylate and ABS, producing a high-luster thermoplastic resin. MABS is a tough, transparent plastic, with high surface brilliancy and finish.
Metaxylene ("**MX**")	Metaxylene is a colourless, flammable liquid that is separated from mixed xylenes created during the reforming of petroleum naphtha. MX is the preferred feedstock for purified isophthalic acid (PIA) which is used in the manufacture of polyethylene terephthalate (PET) bottles and unsaturated polyester resins (UPR).
Mixed xylene	Mixed xylene is primarily a mixture of three different xylene monomers
Monomer	A monomer is a simple molecule capable of reacting to form a polymer.
Naphtha	Naphtha is a refinery product that is used as a gasoline component, but also serves as feedstock for petrochemical plants.
Natural gas liquids ("**NGLs**")	NGLs generally comprise a mixture of ethane, propane, butanes and smaller amounts of other lighter hydrocarbons.
Olefins	Olefins, including ethylene and propylene, are the key building blocks of the petrochemical industry and produce a large range of derivative products as well as butadiene and benzene.
Olefins cracker	An olefins cracker breaks down naphtha or gas feedstocks into olefins, principally ethylene and propylene.
Paraxylene ("**PX**")	Paraxylene is an aromatic hydrocarbon primarily used in the manufacture of PTA. It is a colourless, flammable liquid that is separated from mixed xylenes created during the reforming of petroleum naphtha.
Polyamide ("**PA**")	A polyamide is a polymer containing monomers of amides joined by peptide bonds, examples being nylons, aramids and polyaspartate. Polyamides are commonly used in textiles, automotives, carpet and sportswear due to their extreme durability and strength.
Polyamide/ABS ("**PA+ABS**")	PA+ABS is a blend based on polyamide and ABS, combining excellent impact strength at high and low temperatures, high surface quality, easy processing, chemical resistance, heat resistance and a pleasant feel.
Polybutadiene ("**PB**")	PB is a homopolymer (only one monomer) of 1,3 butadiene. PB is noted for its high resistance to abrasion, low heat buildup and resistance to cracking.
Polybutylene terephthalate ("**PBT**")	PBT is a thermoplastic engineering polymer made by polycondensation of terephthalic acid and butanediol. PBT is used as an insulator in the electrical and electronics industries. It is a thermoplastic (semi-) crystalline polymer, and a type of polyester.
Polycarbonate ("**PC**")	Polycarbonate is an engineering thermoplastic material which, due to its optical qualities, structural strength and weight, has a wide range of uses, including CDs and DVDs, optic fibers, optical lenses, structural parts in cars and trucks and housings for electrical household appliances and office equipment.
Polyethylene ("**PE**")	Polyethylene is a thermoplastic produced by aggregating many ethylene and co-monomer molecules in a process called polymerization.
Polyethylene terephthalate ("**PET**")	PET is a thermoplastic polymer resin used in synthetic fibers. PET is commonly known as Polyester.
Polylactic acid ("**PLA**")	Poly(lactic acid) or polylactide is a thermoplastic aliphatic polyester derived from renewable resources, such as corn starch (in the US), tapioca products (roots, chips or starch mostly in Asia) or sugarcanes (in the rest of the world).
Polymer	A polymer is a chemical compound usually made up of a large number of identical components linked together into long molecular chains.
Polymethyl methacrylate ("**PMMA**")	PMMA is a transparent thermoplastic produced by polymerization of methylmethacrylate. PMMA is often used as a light or shatter-resistant alternative to glass.
Polypropylene ("**PP**")	PP is the world's second most widely used thermoplastic after polyethylene. It is produced by the polymerization of propylene. It is used mainly for molding, filaments, fibers and films. Polypropylene is the most significant thermoplastic material used in molded containers and automotive applications.

Polystyrene ("**PS**") .... PS is a thermoplastic resin produced by the polymerization of styrene. It exists in solid state at room temperature, but melts if heated and becomes solid again once cooled. It is converted through extrusion, thermoforming, stamping or injection molding into end products for a wide range of end applications. PS may either be general purpose (GPPS) or high-impact (HIPS).

Polytetrafluoroethylene ("**PTFE**")...... PTFE is a synthetic fluoropolymer of tetrafluoroethylene with numerous applications. PTFE is most well-known under its brand name Teflon, marketed by DuPont.

Potash .... Potash incudes various mined and manufactured salts that contain potassium in water-soluble form. Potash is one of the basic raw materials for the production of chlorine and caustic potash, through the electrolysis of KCl.

Propylene.. Propylene is a flammable gas which is largely derived either as a co-product of the refinery process used to make gasoline, or as a co-product of the steam cracking process used to make ethylene. Propylene has virtually no independent end use, but is an important input for a significant number of industrial products and is the main feedstock used to make polypropylene and acrylonitrile.

Propylene oxide ("**PO**" and "**POSM**") POSM is an alternative process to produce SM whereby propylene oxide is produced and styrene is generated as a co-product. Both the EBSM and POSM processes are large scale and capital intensive. We use the EBSM method to produce our styrene because the alternative, the POSM process, is used only when the aim is to produce propylene oxide.

Polyvinyl chloride ("**PVC**")................ PVC is the second most common type of plastic in the world after polyethylene.

PS_3 .... PS_3 is a unique blend of oleum and sulphuric acid, 98% of which is produced to meet specific customer requirements.

Purified Terephthalic Acid ("**PTA**")... Purified terephthalic acid is an aromatic hydrocarbon, which is primarily used in the manufacture of polyesters used in fibres, textiles, film, and polyethylene terephthalate (PET) bottles.

Smelter acid.. Smelter acid is a by-product, lower grade sulphuric acid produced in the manufacture of specific metals (*e.g.*, nickel, copper and zinc from metal sulphide ores).

SO_2 .... SO_2 is the chemical formula for sulphur dioxide. It is manufactured as a chemical intermediate in the manufacture of SO_3 and sulphuric acid. It is used in water treatment, in the food industry as a preservative and as a chemical intermediate.

SO_3 derivatives.................................. SO_3 derivatives include Oleum, SO_2, ultrapure acids and PS_3. It is sold to the cosmetics, lubricant and high tech polymer industries.

Sodium hypochlorite .... Sodium hypochlorite is a chemical compound with the formula NaClO. Sodium hypochlorite solution, commonly known as bleach, is frequently used as a disinfectant.

Styrene... See "Styrene monomer."

Styrene acrylonitrile ("**SAN**")............. SAN is a rigid and transparent polymer made from styrene, used principally in the production of ABS.

Styrene-butadiene block copolymers ("**SBCs**") .... SBCs is a class of block copolymers of styrene and butadiene which is produced either as an elastomer or as a "rigid product." Rigid products have a high transparency and are often used to "toughen" GPPS. Elastomers have high performance abrasion resistance and are frequently used for injection-molded parts.

Styrene butadiene styrene ("**SBS**") ..... SBS is a thermoplastic rubber made from styrene and butadiene. SBS is a hard rubber with applications in areas such as the soles of shoes or tire treads.

Styrene methylmethacrylate ("**SMMA**")...................................... SMMA is a clear, impact-resistant resin, which can be used in homeware, packaging, office, medical and electronic applications.

Styrene monomer ("**SM**") .... Styrene is a liquid hydrocarbon produced from ethylene and benzene. Styrene is an intermediate used in the production of plastics, resins, rubbers and latexes, with key end applications in areas such as packaging, electronics & appliances, construction (primarily insulation) and automotive components.

Sulphur .... Sulphur is a key raw material for producing sulphuric acid and SO_3 derivatives. It is a by-product from the oil and gas refining industry, the removal of which is necessary to meet fuel emissions standards.

Sulphuric acid..................................... Sulphuric acid is a strong mineral acid. It is soluble in water at all concentrations. Sulphuric acid has many applications and is one of the largest volume products of the chemical industry.

Sulphur burnt sulphuric acid .... Sulphur burnt sulphuric acid is a higher-priced, higher quality grade of sulphuric acid.

Thermoplastic...................................... A thermoplastic is a plastic which softens when heated and hardens again when cooled. Thermoplastics include polyethylene, polypropylene and polystyrene.

Turnaround.. Temporary shutdown of a refinery or petrochemical production facility for required maintenance. Turnarounds can be scheduled (planned, routine maintenance, inspections and tests to comply with industry regulations) or unscheduled (in response to an unexpected outage or plant failure).

Ultrapure acids .... Ultrapure acids are very pure forms of sulphuric acid, which are used in the electronics industry.

Vinyl chloride monomer ("**VCM**")..... VCM is the primary raw material used in the manufacture of PVC resins and is produced by the reaction of ethylene and chlorine, which produces EDC that is transformed into VCM by thermal cracking.

EXTRACTED FINANCIAL STATEMENTS OF INEOS QUATTRO HOLDINGS LIMITED

The following information has been extracted from the full audited statutory financial statements of INEOS Quattro Holdings Limited for the years ended December 31, 2022. The following information does not constitute full statutory financial statements. The extracted information includes the items listed below in the index. The strategic report and the directors' report, company profit and loss account, company balance sheet, company notes, and certain other notes have not been extracted for the purposes of this Annual Report. The full statutory financial statements were approved by the directors on April 14, 2023 and audited by Deloitte LLP. The independent auditors' report signed by Deloitte LLP contained an unqualified opinion on those full statutory financial statements. Copies of the full statutory financial statements can be obtained from Companies House.

INDEX TO THE EXTRACTED CONSOLIDATED FINANCIAL STATEMENTS

Page

INEOS QUATTRO HOLDINGS LIMITED

Consolidated Income Statement for the years ended December 31, 2022 and 2021 .... F-2
Consolidated Statement of Comprehensive Income for the years ended December 31, 2022 and 2021. F-3
Consolidated Balance Sheets as at December 31, 2022 and 2021 .... F-4
Consolidated Statement of Changes in Equity for the years ended December 31, 2022 and 2021 .... F-5
Consolidated Statement of Cash Flows for the years ended December 31, 2022 and 2021 .... F-7
Notes to the Consolidated Financial Statements for the years ended 31 December 2022 .... F-8

INEOS QUATTRO HOLDINGS LIMITED
CONSOLIDATED INCOME STATEMENT FOR THE YEAR ENDED 31 DECEMBER 2022

	Note	2022	2021
		€m	
Revenue	2	**18,172.3**	**14,932.2**
Cost of sales before exceptional items		(15,171.7)	(11,821.5)
Exceptional cost of sales	4	-	(140.6)
Total cost of sales		(15,171.7)	(11,962.1)
Gross profit		**3,000.6**	**2,970.1**
Distribution costs		(901.9)	(814.5)
Administrative expenses before exceptional items		(474.8)	(440.0)
Exceptional administrative expenses	4	(5.1)	(41.1)
Total administrative expenses		(479.9)	(481.1)
Operating profit	5	**1,618.8**	**1,674.5**
Share of profit of associates and joint ventures using the equity method	12	233.6	462.0
Dividends received from other investments		2.6	2.5
Impairment of investments	12	-	(1.0)
Loss on disposal of equity accounted investments	12	(26.6)	-
Profit on disposal of controlling stake in businesses	3	710.3	-
Profit on disposal of property, plant and equipment		5.6	4.3
Profit before net finance costs		**2,544.3**	**2,142.3**
Finance income	8	89.6	101.8
Finance costs before exceptional items	8	(287.0)	(273.1)
Exceptional finance costs	4, 8	(4.3)	(68.9)
Total finance costs		(291.3)	(342.0)
Net finance costs		(201.7)	(240.2)
Profit before tax		**2,342.6**	**1,902.1**
Tax charge	9	(377.7)	(326.0)
Profit for the year		**1,964.9**	**1,576.1**
Profit attributable to:			
- Owners of the parent		1,920.3	1,545.8
- Non-controlling interest		44.6	30.3
		1,964.9	**1,576.1**

All activities of the Group relate to continuing operations.

The notes on pages F-8 to F-79 are an integral part of these consolidated financial statements.

INEOS QUATTRO HOLDINGS LIMITED
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 31 DECEMBER 2022

	Note	2022	2021
		€m	
Profit for the year		**1,964.9**	**1,576.1**
Other comprehensive (expense)/income:			
Items that will not be reclassified to profit or loss			
Remeasurement of post-employment benefit obligations	20	(35.6)	54.8
Deferred taxes on remeasurement of post-employment benefit obligations	14	6.8	(9.6)
Fair value gain on investments in equity instruments designated as FVTOCI	25	(0.4)	-
Reclassification of foreign exchange translation difference on disposal of subsidiaries to profit or loss	3	9.8	-
Items that may be subsequently reclassified to profit or loss			
Foreign exchange translation differences of subsidiaries		(51.0)	202.9
Total other comprehensive (expense)/income for the year, net of tax		**(70.4)**	**248.1**
Total comprehensive income for the year		**1,894.5**	**1,824.2**
Total comprehensive income attributable to:			
- Owners of the parent		1,854.9	1,784.7
- Non-controlling interest		39.6	39.5
Total comprehensive income for the year		**1,894.5**	**1,824.2**

The notes on pages F-8 to F-79 are an integral part of these consolidated financial statements.

INEOS QUATTRO HOLDINGS LIMITED
CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2022

	Note	2022	2021
Non-current assets		€m	
Property, plant and equipment	10	4,722.8	4,972.2
Intangible assets	11	2,187.1	2,265.2
Investments in equity-accounted investees	12	1,800.6	1,530.9
Other investments	12	9.8	18.1
Other financial assets	13	2.2	2.1
Other receivables	16	152.7	52.5
Employee benefits	20	27.7	69.0
Deferred tax assets	14	150.2	202.9
Total non-current assets		**9,053.1**	**9,112.9**
Current assets			
Inventories	15	1,473.6	1,548.9
Trade and other receivables	16	2,360.9	2,377.9
Tax receivables for current tax		79.2	54.7
Other financial assets	13	244.5	-
Cash and cash equivalents	26	1,530.1	1,291.3
Total current assets		**5,688.3**	**5,272.8**
Total assets		**14,741.4**	**14,385.7**
Equity attributable to owners of the parent			
Share capital	23	0.3	0.3
Merger reserve	24	(4,526.9)	(4,526.9)
Retained earnings		8,961.0	7,551.5
Other reserves		148.1	213.5
Total shareholders' funds		**4,582.5**	**3,238.4**
Non-controlling interest		66.1	74.2
Total equity		**4,648.6**	**3,312.6**
Non-current liabilities			
Interest-bearing loans and borrowings	17	6,336.5	6,436.4
Lease liabilities	18	224.3	226.6
Trade and other payables	19	142.5	146.9
Employee benefits	20	189.5	233.3
Provisions	21	154.6	185.3
Deferred tax liabilities	14	400.3	404.9
Total non-current liabilities		**7,447.7**	**7,633.4**
Current liabilities			
Interest-bearing loans and borrowings	17	4.5	133.9
Lease liabilities	18	65.0	72.6
Trade and other payables	19	2,301.0	2,978.5
Tax liabilities for current tax		194.7	146.0
Other financial liabilities	22	46.2	53.4
Provisions	21	33.7	55.3
Total current liabilities		**2,645.1**	**3,439.7**
Total liabilities		**10,092.8**	**11,073.1**
Total equity and liabilities		**14,741.4**	**14,385.7**

The notes on pages F-8 to F-79 are an integral part of these consolidated financial statements.

These financial statements were approved by the Board of Directors on 14 April 2023 and were signed on its behalf by:

G W Leask
Director

INEOS Quattro Holdings Limited
Registered number: 09922632

INEOS QUATTRO HOLDINGS LIMITED
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 31 DECEMBER 2022

	Note	Share capital	Share premium reserve	Merger reserve	Retained earnings	Other reserves	Total shareholders' funds	Non-controlling interest	Total equity
						€m			
Balance at 1 January 2021		**0.3**	**6,620.4**	**(4,526.9)**	**603.5**	**(25.4)**	**2,671.9**	**71.3**	**2,743.2**
Profit for the year		-	-	-	1,545.8	-	1,545.8	30.3	1,576.1
Other comprehensive income/(expense):									
Remeasurement of post-employment benefit obligations	20	-	-	-	-	53.7	53.7	1.1	54.8
Deferred taxes on remeasurement of post-employment benefit obligations	14	-	-	-	-	(9.4)	(9.4)	(0.2)	(9.6)
Foreign exchange translation differences of subsidiaries		-	-	-	-	194.6	194.6	8.3	202.9
Total other comprehensive income						**238.9**	**238.9**	**9.2**	**248.1**
Transactions with owners, recorded directly in equity:									
Reduction of share premium	23	-	(6,620.4)	-	6,620.4	-	-	-	-
Repayment of Equity Bridge Contribution	23	-	-	-	(824.9)	-	(824.9)	-	(824.9)
Dividends	23	-	-	-	(393.3)	-	(393.3)	(36.6)	(429.9)
Transactions with owners, recorded directly in equity		**-**	**(6,620.4)**	**-**	**5,402.2**	**-**	**(1,218.2)**	**(36.6)**	**(1,254.8)**
Balance at 31 December 2021		**0.3**	**-**	**(4,526.9)**	**7,551.5**	**213.5**	**3,238.4**	**74.2**	**3,312.6**
Profit for the year		-	-	-	1,920.3	-	1,920.3	44.6	1,964.9
Other comprehensive (expense)/income:									
Remeasurement of post-employment benefit obligations	20	-	-	-	-	(32.6)	(32.6)	(3.0)	(35.6)
Deferred taxes on remeasurement of post-employment benefit obligations	14	-	-	-	-	6.1	6.1	0.7	6.8
Foreign exchange translation differences of subsidiaries		-	-	-	-	(48.3)	(48.3)	(2.7)	(51.0)
Reclassification to profit or loss on disposal of subsidiaries	3	-	-	-	-	9.8	9.8	-	9.8
Fair value loss on investments in equity instruments designated as FVTOCI	14	-	-	-	-	(0.4)	(0.4)	-	(0.4)
Total other comprehensive expense.		**-**	**-**	**-**	**-**	**(65.4)**	**(65.4)**	**(5.0)**	**(70.4)**
Transactions with owners, recorded directly in equity:									
Adjustment arising from change in non-controlling interest		-	-	-	10.2	-	10.2	12.2	22.4
Adjustment arising from disposal of non-controlling interest		-	-	-	-	-	-	(32.5)	(32.5)
Dividends	23	-	-	-	(521.0)	-	(521.0)	(27.4)	(548.4)
Transactions with owners, recorded directly in equity		**-**	**-**	**-**	**(510.8)**	**-**	**(510.8)**	**(47.7)**	**(558.5)**
Balance at 31 December 2022		**0.3**	**-**	**(4,526.9)**	**8,961.0**	**148.1**	**4,582.5**	**66.1**	**4,648.6**

The notes on pages F-8 to F-79 are an integral part of these consolidated financial statements.

INEOS QUATTRO HOLDINGS LIMITED
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 31 DECEMBER 2022

Analysis of other reserves:

	Note	Translation reserve	Fair value reserve	Actuarial reserve	Total other reserves
				€m	
Balance at 1 January 2021		**(10.7)**	**-**	**(14.7)**	**(25.4)**
Remeasurement of post-employment benefit obligations	20	-	-	53.7	53.7
Deferred taxes on remeasurement of post-employment benefit obligations	14	-	-	(9.4)	(9.4)
Foreign exchange translation differences of subsidiaries		194.6	-	-	194.6
Balance at 31 December 2021		**183.9**	-	**29.6**	**213.5**
Remeasurement of post-employment benefit obligations	20	-	-	(32.6)	(32.6)
Deferred taxes on remeasurement of post-employment benefit obligations	14	-	-	6.1	6.1
Fair value gain on investments in equity instruments designated as FVTOCI	14	-	(0.4)	-	(0.4)
Reclassification of foreign exchange translation difference on disposal of subsidiaries		9.8	-	-	9.8
Foreign exchange translation differences of subsidiaries		(48.3)	-	-	(48.3)
Balance at 31 December 2022		**145.4**	**(0.4)**	**3.1**	**148.1**

The notes on pages F-8 to F-79 are an integral part of these consolidated financial statements.

INEOS QUATTRO HOLDINGS LIMITED
CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 31 DECEMBER 2022

	Note	2022	2021
		€m	
Cash flows from operating activities			
Profit for the year		1,964.9	1,576.1
Adjustments for:			
Depreciation and impairment	10	582.9	595.5
Amortisation and impairment	11	129.4	122.9
Net finance costs	8	201.7	240.2
Share of profit of joint ventures and associated undertakings	12	(233.6)	(462.0)
Dividends received from other investments		(2.6)	(2.5)
Profit on disposal of property, plant and equipment		(5.6)	(4.3)
Impairment of investments	12	26.6	1.0
Profit on disposal of subsidiaries		(710.3)	-
Tax charge	9	377.7	326.0
Decrease/(increase) in trade and other receivables		406.6	(789.4)
Decrease/(increase) in inventories		73.3	(589.2)
(Decrease)/increase in trade and other payables		(542.5)	1,032.0
(Decrease)/increase in provisions and employee benefits		(74.6)	70.0
Tax paid		(321.8)	(291.1)
Net cash from operating activities		**1,872.1**	**1,825.2**
Cash flows from investing activities			
Interest and other finance income received		13.6	5.0
Net repayment of loans made to related parties		4.2	6.7
Dividends received from joint ventures	12	401.4	188.7
Dividends received from other investments		2.6	2.5
Disposal of businesses, net of cash disposed of and withholding tax	3	238.1	-
Proceeds from sales of property, plant and equipment		16.1	6.8
Acquisition of businesses, net of cash acquired	3	-	85.8
Acquisition of other investments		(0.2)	(0.7)
Acquisition of intangible assets		(75.7)	(3.5)
Acquisition of property, plant and equipment		(869.4)	(750.2)
Net cash used in investing activities		**(269.3)**	**(458.9)**
Cash flows from financing activities			
Proceeds from external borrowings	17	431.1	4,832.5
Repayment of external borrowings		(418.9)	(4,185.4)
Debt issue costs		(1.2)	(63.0)
Interest paid		(270.2)	(187.7)
Capital element of lease payments	18	(82.8)	(95.8)
Non-controlling interest buy-out	23	22.5	-
Drawdown of loans made to the owners of the Company		(500.5)	-
Repayment of Equity Bridge Contribution to the owners of the Company	23	-	(824.9)
Dividend paid attributable to the owners of the Company	23	(521.0)	(393.3)
Dividend paid attributable to non-controlling interest		(34.9)	(10.3)
Net cash used in financing activities		**(1,375.9)**	**(927.9)**
Net increase in cash and cash equivalents	26	226.9	438.4
Cash and cash equivalents at 1 January	26	1,291.3	805.6
Effect of exchange rate fluctuations on cash held		11.9	47.3
Cash and cash equivalents at 31 December	26	**1,530.1**	**1,291.3**

The notes on pages F-8 to F-79 are an integral part of these consolidated financial statements.

1 ACCOUNTING POLICIES

1.1 Overview

INEOS Quattro Holdings Limited ("the Company") is a private company, limited by shares, incorporated in the United Kingdom, registered in England and Wales, and has its registered office at Hawkslease, Chapel Lane, Lyndhurst, Hampshire, SO43 7FG, United Kingdom.

The Company was incorporated on 18 December 2015, as a subsidiary of INEOS Industries Holdings Limited.

1.2 Basis of accounting

These financial statements consolidate those of the Company and its subsidiaries (together referred to as the "Group") and equity account the Group's interest in associated undertakings and recognise its joint arrangements as joint operations or joint ventures. The parent company financial statements present information about the Company as a separate entity and not about its Group.

The Group financial statements have been prepared on a going concern basis and approved by the Board of Directors in accordance with United Kingdom adopted international accounting standards .

In preparing the financial statements, the directors have considered the impact of climate change, particularly in the context of the principal risk identified on page 115 (see*"- Sustainability"*). There has been no material impact identified on the financial reporting judgements and estimates. The directors are aware of the ever-changing risks attached to climate change and will regularly assess these risks against judgements and estimates made in preparation of the group's financial statements

The Group meets its day to day working capital requirements through its intercompany loan and external financing facilities, along with cash generated by its subsidiaries' operations. The Group held cash balances of €1,530.1 million at 31 December 2022 (2021: €1,291.3 million) and gross loans and borrowings of €6,391.7 million at 31 December 2022 (2021: €6,640.2 million). The Group has no significant financial covenants. The Directors have considered the Group's projected future cash flows and working capital requirements and are confident that the Group has sufficient cashflows to meet its working capital requirements for the next twelve months from the date of signing the financial statements. In particular, the Directors have stress tested the forecasts through taking account of reasonable possible changes in trading performance on the impact on EBITDA before exceptional items, cash flow and debt. The stress tests show that the Group will still have sufficient cash flow to meet all of its obligations as they fall due within the next 12 months from the date of signing the financial statements.

On the basis of this assessment together with net assets of €4,648.6 million as at 31 December 2022 (2021: €3,312.6 million) the Directors have concluded that the Group can operate within its current facilities for a period of at least 12 months from the date of this report. Therefore, these financial statements have been prepared on a going concern basis in accordance with the Companies Act 2006 and applicable accounting standards in the United Kingdom.

The Group financial statements have been prepared and approved by the directors in accordance with United Kingdom adopted international accounting standards and have been approved for issuance by the Board of Directors on 14 April 2023.

The notes below provide a list of the significant accounting policies adopted in the preparation of the consolidated financial statements. The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these Group financial statements.

1.3 Measurement convention

The financial statements are prepared on the historical cost basis except for derivative financial instruments classified at fair value through the profit or loss or at fair value through other comprehensive income.

1.4 Functional and presentation currency

The presentational currency of the Group is the Euro, which is the functional currency of the majority of operations. The Group's primary products are sold in an international commodities market which is priced and invoiced primarily in euros.

1.5 Changes in accounting policies

The Group financial statements have been prepared using accounting policies that are consistent with those of the previous financial year. The Group has adopted the following amendments to accounting standards for the first time in 2022, with effect from 1 January 2022, although there has been no material effect on the Group's financial statements:

- Amendments to IAS 37: Onerous Contracts—Cost of Fulfilling a Contract.

  The amendments specify that the cost of fulfilling a contract comprises the costs that relate directly to the contract. Costs that relate directly to a contract consist of both the incremental costs of fulfilling that contract (examples would be direct labour or materials) and an allocation of other costs that relate directly to fulfilling contracts (an example would be the allocation of the depreciation charge for an item of property, plant and equipment used in fulfilling the contract).

- Amendments to References to the Conceptual Framework in IFRS 3.

  The amendments update a reference to the Conceptual Framework for Financial Reporting without changing the accounting requirements for business combinations.

- Amendments to IAS 16: Property, Plant and Equipment—Proceeds before Intended Use.

  Under the amendments, proceeds from selling items before the related item of Property, Plant and Equipment is available for use should be recognised in profit or loss, together with the costs of producing those items. IAS 2 *Inventories* should be applied in identifying and measuring these production costs.

  The amendments also clarify the meaning of 'testing whether an asset is functioning properly. IAS 16 now specifies this as assessing whether the technical and physical performance of the asset is such that it is capable of being used in the production or supply of goods or services, for rental to others, or for administrative purposes.

  If not presented separately in the statement of comprehensive income, the financial statements shall disclose the amounts of proceeds and cost included in profit or loss that relate to items produced that are not an output of the entity's ordinary activities, and which line item(s) in the statement of comprehensive income include(s) such proceeds and cost.

- Annual Improvements to IFRS Standards 2018-2020:

  IFRS 1: Subsidiary as a first-time Adopter – The amendment provides additional relief to a subsidiary which becomes a first-time adopter later than its parent in respect of accounting for cumulative translation differences. The amendment allows entities that have measured their assets and liabilities at carrying amounts recorded in their parent's books to also measure any cumulative translation differences using the amounts reported by the parent. This amendment will also apply to associates and joint ventures that have taken the same IFRS 1 exemption.

  IFRS 9: Fees in the '10 per cent' test for derecognition of financial liabilities – The amendment clarifies which fees should be included in the 10% test for derecognition of financial liabilities.

  IFRS 16: The amendment removes the illustration of the reimbursement of leasehold improvements.

- Amendments to IAS 1 Presentation of Financial Statements: Classification of Liabilities as Current or Non-current and Non-current Liabilities with Covenants (effective date 1 January 2024).

1.6 Basis of consolidation

Subsidiaries

Subsidiaries are all entities (including structured entities) over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity.

Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases.

1.6 Basis of consolidation (continued)

Subsidiaries (continued)

The Group applies the acquisition method to account for business combinations, except acquisitions under common control which are outside the scope of IFRS 3. The consideration transferred for the acquisition of a subsidiary is the fair values of the assets transferred, the liabilities incurred to the former owners of the acquiree and the equity interests issued by the Group. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group recognises any non-controlling interest in the acquiree on an acquisition-by-acquisition basis, either at fair value or at the non-controlling interest's proportionate share of the recognised amounts of acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred.

If the business combination of a subsidiary or joint venture is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is re-measured to fair value at the acquisition date; any gains or losses arising from such re-measurement are recognised in profit or loss.

Any contingent consideration to be transferred by the Group is recognised at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration that is deemed to be an asset or liability is recognised in accordance with IFRS 9 in the profit or loss. Contingent consideration that is classified as equity is not re-measured, and its subsequent settlement is accounted for within equity.

Inter-company transactions, balances and unrealised gains on transactions between Group companies are eliminated. Unrealised losses are also eliminated.

Transactions with non-controlling interests that do not result in loss of control are accounted for as equity transactions – that is, as transactions with the owners in their capacity as owners. The difference between fair value of any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to non-controlling interests are also recorded in equity.

When the Group ceases to have control any retained interest in the entity is remeasured to its fair value at the date when control is lost, with the change in carrying amount recognised in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the Group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognised in other comprehensive income are reclassified to profit or loss.

Special purpose entities ("SPE")

A SPE is consolidated if, based on an evaluation of the substance of its relationship with the Group and the SPE's risks and rewards, the Group concludes that it controls the SPE. The Group has established three SPE's, INEOS Styrolution Receivables Finance Designated Activity Company, Deutsche Bank Mexico F/1787 and INEOS Norway Finance Ireland Limited, for debt securitisation programmes. The Group does not have any direct or indirect shareholdings in these SPE's. The SPE's are controlled by the Group as they have been established under terms that impose strict limitations on the decision-making powers of the SPE's management that result in the Group receiving the majority of the benefits related to the SPE's operations and net assets, being exposed to the majority of risks arising from the SPE's activities, and retaining the majority of the residual or ownership risks related to the SPE's and their assets. INEOS Styrolution Receivables Finance Designated Activity Company, Deutsche Bank Mexico F/1787 and INEOS Norway Finance Ireland Limited are therefore regarded as SPE's and have been consolidated in these financial statements.

Associated undertakings

Associates are all entities over which the Group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. Investments in associates are accounted for using the equity method of accounting. Under the equity method, the investment is initially recognised at cost, and the carrying amount is increased or decreased to recognise the investor's share of the profit or loss of the investee after the date of acquisition. The Group's investment in associates includes goodwill identified on acquisition. If the ownership interest in an associate is reduced but significant influence is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate.

1.6 Basis of consolidation (continued)

Associated undertakings (continued)

The Group's share of post-acquisition profit or loss is recognised in the income statement, and its share of post-acquisition movements in other comprehensive income is recognised in other comprehensive income with a corresponding adjustment to the carrying amount of the investment. When the Group's share of losses in an associate equals or exceeds its interest in the associate, including any other unsecured receivables, the Group does not recognise further losses, unless it has incurred legal or constructive obligations or made payments on behalf of the associate.

The Group determines at each reporting date whether there is any objective evidence that the investment in the associate is impaired. If this is the case, the Group calculates the amount of impairment as the difference between the recoverable amount of the associate and its carrying value and recognises the amount adjacent to 'share of profit/(loss) of associates' in the income statement.

Profits and losses resulting from upstream and downstream transactions between the Group and its associate are recognised in the Group's financial statements only to the extent of unrelated investor's interests in the associates. Unrealised losses are eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates have been changed where necessary to ensure consistency with the policies adopted by the Group.

Joint arrangements

Under IFRS 11 "*Joint Arrangements"*, investments in joint arrangements are classified as either joint operations or joint ventures. The classification depends on the contractual rights and obligations of each investor, rather than the legal structure of the joint arrangement. The Group has assessed the nature of its joint arrangements and determined them to be either joint operations or joint ventures.

The Group recognises its direct right to the assets, liabilities, revenues and expenses of joint operations and its share of any jointly held or incurred assets, liabilities, revenues and expenses. These have been incorporated in the financial statements under the appropriate headings.

Joint ventures are accounted for using the equity method. Under the equity method of accounting, interests in joint ventures are initially recognised at cost and adjusted thereafter to recognise the Group's share of the post-acquisition profits or loses and movements in other comprehensive income. When the Group's share of losses on a joint venture equals or exceeds its interests in the joint ventures (which includes any long-term interests that, in substance, form part of the group's net investment in the joint ventures), the group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the joint ventures.

Unrealised gains on transactions between the Group and its joint ventures are eliminated to the extent of the Group's interest in the joint ventures. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of the joint ventures have been changed where necessary to ensure consistency with the polices adopted by the Group.

1.7 Foreign exchange

Transactions in foreign currencies are translated to the respective functional currencies of Group entities at the foreign exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the foreign exchange rate ruling at that date. Foreign exchange differences arising on translation are recognised in the consolidated income statement except for differences arising on the retranslation of a financial liability designated as a hedge of the net investment in a foreign operation, or qualifying cash flow hedges, which are recognised in other comprehensive income. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign exchange are translated using the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currencies that are stated at fair value are retranslated to the functional currency at foreign exchange rates ruling at the dates the fair value was determined.

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on consolidation, are translated to the Group's presentational currency, euros, at foreign exchange rates ruling at the reporting date. The revenues and expenses of foreign operations are translated at exchange rates prevailing at the dates of the transactions. The Group applies an average rate for the year where this rate approximates to the foreign exchange rates ruling at the dates of the transactions. Exchange differences arising from this translation of foreign operations are taken directly to the translation reserve. They are recycled into the consolidated income statement upon disposal.

1.7 Foreign exchange (continued)

Exchange differences arising from a monetary item receivable from or payable to a foreign operation, the settlement of which is neither planned nor likely in the foreseeable future, are considered to form part of a net investment in a foreign operation and are recognised directly in equity in the translation reserve. Foreign exchange differences arising on the retranslation of a borrowing designated as a hedge of a net investment in a foreign operation are recognised directly in OCI, in the translation reserve, to the extent that the hedge is effective. When the hedged part of a net investment is disposed of, the associated cumulative amount in equity is transferred to profit or loss as an adjustment to the profit or loss on disposal.

1.8 Classification of financial instruments issued by the Group

Financial instruments issued by the Group are treated as equity only to the extent that they meet the following two conditions:

(a) They include no contractual obligation upon the Group to deliver cash or other financial assets or to exchange financial assets or financial liabilities with another party under conditions that are potentially unfavourable to the Group; and

(b) Where the instrument will or may be settled in the Company's own equity instruments, it is either a non-derivative that includes no obligation to deliver a variable number of the Company's own equity instruments or is a derivative that will be settled by the Company's exchanging a fixed amount of cash or other financial assets for a fixed number of its own equity instruments.

To the extent that this definition is not met, the proceeds of issue are classified as a financial liability. Where the instrument so classified takes the legal form of the Company's own shares, the amounts presented in these financial statements for called up share capital and share premium account exclude amounts in relation to those shares.

Non-derivative financial instruments

Non-derivative financial instruments comprise investments in debt and equity securities, trade and other receivables, cash and cash equivalents, loans and borrowings, and trade and other payables.

Trade and other receivables

Trade and other receivables are recognised initially at fair value plus transaction costs that are directly attributable to the acquisition or issue. Subsequent to initial recognition they are tested for classification as per IFRS 9. If the trade receivables satisfy the criteria for cash flow characteristics test and business model test as per IFRS 9, then they are recognised at amortised cost. If they do not qualify for being recognised at amortised cost they are recognised at fair value through profit or loss or at fair value through other comprehensive income.

Trade and other payables

Trade and other payables are recognised initially at fair value less transaction costs that are directly attributable to the acquisition or issue. Subsequent to initial recognition, they are measured at amortised cost using the effective interest method.

Investments in debt and equity securities

Investments in debt securities are measured at amortised cost if they meet both of the following conditions and are not designated as a fair value through profit and loss:

- The asset is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A financial asset is measured at fair value through other comprehensive income only if it meets both of the following conditions and is not designated as a fair value through profit and loss:

- The asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
- The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

1.8 Classification of financial instruments issued by the Group (continued)

Investments in debt and equity securities (continued)

For investment in equity securities that are not held for trading, the Group may irrevocably elect to present subsequent changes to fair value in other comprehensive income. The Group makes this election on an investment-by-investment basis.

All other financial assets, including derivatives, are classified as measured at fair value through profit and loss. When these investments are derecognised, the cumulative gain or loss previously recognised directly in equity is recognised in the income statement. Where these investments are interest-bearing, interest calculated using the effective interest method is recognised in the income statement. Where no reliable measurement of fair value is available, investments are stated at historic acquisition cost.

Cash and cash equivalents

Cash and cash equivalents comprise of cash balances and call deposits.

Cash flows entered into by a third party on behalf of the Group (as it's 'agent') are presented 'gross'. These are typically cash flows arising from financing activities, undertaken by agent banks.

Interest-bearing borrowings

Interest-bearing borrowings are recognised initially at fair value less attributable transaction costs. Subsequent to initial recognition, interest-bearing borrowings are stated at amortised cost using the effective interest method.

Debt restructuring

The Group derecognises financial liabilities in accordance with the provisions in IFRS 9. When debt is modified, the Group analyses the modifications from both a quantitative and qualitative perspective to determine if the modifications are substantial and meet the IFRS requirements for de-recognition, in which case the debt is treated as extinguished. All fees paid in connection with a debt extinguishment are expensed immediately. When a modification is accounted for as a non-substantial modification, associated fees incurred are deferred as an adjustment to the carrying value of the liability and amortised using the original effective interest rate.

Derivative financial instruments and hedging

Derivative financial instruments

Derivative financial instruments are initially recognised at fair value. The gain or loss on subsequent remeasurement to fair value is recognised immediately in the consolidated income statement as finance income or expense. Where derivatives qualify for hedge accounting, recognition of any resultant gain or loss depends on the nature of the item being hedged.

Cash flow hedges

Where a derivative financial instrument is designated as a hedge of the variability in cash flows of a recognised asset or liability or a highly probable forecast transaction, the effective part of any gain or loss on the derivative financial instrument is recognised directly in the hedging reserve. The effective portion of changes in the fair value of the derivative that is recognised in hedging reserve is limited to the cumulative change in fair value of the hedged item, determined on a present value basis, from inception of the hedge. Any ineffective portion of the hedge is recognised immediately in the consolidated income statement as finance income or expense.

Where the forecast transaction subsequently results in the recognition of a non-financial asset or non-financial liability, the associated cumulative gain or loss is removed from the hedging reserve and is included in the initial carrying amount of the non-financial asset or liability.

If a hedge of a forecast transaction subsequently results in the recognition of a financial asset or a financial liability, the associated gains and losses that were recognised directly in equity are reclassified into profit or loss in the same period or periods during which the hedged expected future cash flows affect profit or loss, e.g. when interest income or expense is recognised.

For cash flow hedges, other than those covered by the preceding two policy statements, the associated cumulative gain or loss is removed from equity and included in the consolidated income statement as an adjustment to revenue and cost of sales in the same period or periods during which the hedged forecast transaction affects revenue and cost of sales in the consolidated income statement.

1.8 Classification of financial instruments issued by the Group (continued)

Derivative financial instruments and hedging (continued)

When a hedging instrument expires, is sold, terminated, exercised, or the hedge no longer meets the criteria for hedge accounting, hedge accounting is discontinued prospectively. The cumulative gain or loss at that point remains in equity and is recognised in accordance with the above policy when the transaction occurs. If the hedged transaction is no longer expected to take place, the cumulative unrealised gain or loss recognised in equity is recognised in the consolidated income statement immediately.

1.9 Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses. Cost includes expenditure that is directly attributable to the acquisition of the asset. Cost may include the cost of materials, labour and other costs directly attributable to bringing the assets to a working condition for their intended use. Cost may also include the cost of dismantling and removing items and restoring the site on which they are located.

Where parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items of property, plant and equipment.

Depreciation is charged to the consolidated income statement on a straight-line basis over the estimated useful lives of each part of an item of property, plant and equipment. Depreciation commences from the date an asset is brought into service. Land and assets in the course of construction are not depreciated. The estimated useful lives are as follows:

- Buildings — 10 to 50 years
- Plant and Equipment
  - Major items of plant — 3 to 30 years
  - Major plant overhauls — 2 to 4 years
  - Motor vehicles — 5 years
  - Computer hardware and major software — 2 to 4 years
  - Fixtures and fittings — 3 to 40 years

Depreciation methods, useful lives and residual values are reviewed at each reporting date.

The carrying values of property, plant and equipment are reviewed for impairment when events or changes in circumstances indicate that the carrying value may not be recoverable. Where an indicator of impairment exists, the Group makes an estimate of the recoverable amount, which is the higher of the asset's fair value less cost to sell and value in use. Where the carrying amount of an asset exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

Assets are derecognised upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on de-recognition of the asset (calculated as the difference between the net disposal proceeds and the carrying value of the asset) is included in the consolidated income statement in the period in which the item is derecognised.

1.10 Business combinations, goodwill and intangible assets

All business combinations are accounted for by applying the Acquisition method, except acquisitions under common control which are outside the scope of IFRS 3. Goodwill represents amounts arising on acquisition of subsidiaries, associates and joint ventures.

Acquisitions under common control are accounted for at book value. The difference in the book value of the assets acquired and consideration paid is recognised in retained earnings within a distributable merger reserve. The Group has elected not to include the results of businesses acquired under common control transactions within the Group income statement for any periods prior to the date of acquiring control.

Goodwill is stated at cost less any accumulated impairment losses. Goodwill is allocated to groups of cash-generating units and is not amortised but is tested annually for impairment. The cash generating units within the Group are predominately business units. In respect of equity accounted investees, the carrying amount of goodwill is included in the carrying amount of the investment in the investee.

1.10 Business combinations, goodwill and intangible assets (continued)

Negative goodwill arising on an acquisition is recognised immediately in the consolidated income statement.

Intangible assets

Intangible assets that are acquired by the Group are stated at cost less accumulated amortisation and accumulated impairment losses. These intangible assets principally comprise intellectual property rights, customer relationships, non-compete agreements and license fees.

Intangible assets acquired separately from a business are carried initially at cost. The initial cost is the aggregate amount paid and the fair value of other consideration given to acquire the assets. An intangible asset acquired as part of a business combination is recognised separately from goodwill if the asset is separable or arises from contractual or other legal rights and its fair value can be measured reliably.

Amortisation

Amortisation is charged to the consolidated income statement on a straight-line basis over the estimated useful lives of intangible assets unless such lives are indefinite. Intangible assets with an indefinite useful life and goodwill are systematically tested for impairment at each reporting date. Other intangible assets are amortised from the date they are available for use. The estimated useful lives are as follows:

- Customer relationships 3 – 12 years
- Intellectual property rights 10 – 15 years
- Non-compete agreements life of the agreement
- Licenses up to 15 years
- Other 3 years

These intangible assets are tested for impairment at the end of the reporting period if events or changes in circumstances indicate that the carrying value may not be recoverable. Useful lives are examined on an annual basis and adjustments, where applicable, are made on a prospective basis.

1.11 Research and development

Expenditure on research activities is recognised in the consolidated income statement as an expense as incurred.

Expenditure on development activities is capitalised if the product or process is technically and commercially feasible and the Group intends to and has the technical ability and sufficient resources to complete development, future economic benefits are probable and if the Group can measure reliably the expenditure attributable to the intangible asset during its development. Development activities involve a plan or design for the production of new or substantially improved products or processes. The expenditure capitalised includes the cost of materials, direct labour and an appropriate proportion of overheads. Where regulatory and other uncertainties are such that the criteria are not met, the expenditure is recognised in the income statement. Other development expenditure is recognised in the income statement as an expense as incurred. Capitalised development expenditure is stated at cost less accumulated amortisation and less accumulated impairment losses.

1.12 Impairment

Impairment of financial assets

A financial asset not classified at fair value through profit and loss is assessed at each reporting date to determine whether there is evidence that it is impaired.

Trade and other receivables

The Group applies the simplified approach when providing for expected credit losses prescribed by IFRS 9 for its trade receivables and contract assets. This approach requires the Group to recognise the lifetime expected loss provision for all trade receivables taking in consideration historical as well as forward-looking information.

Where the Group has assessed the probability of default of a financial asset to be low, the loss allowance is considered immaterial.

The Group assesses on a forward looking basis the expected credit losses associated with the financial assets classified at amortised cost at each balance sheet date and adjusts the allowance accordingly.

1.12 Impairment (continued)

Investments in debt and equity securities

Impairment of equity securities classified as FVOCI are not tested for impairment under IFRS 9. If the fair value of a debt instrument classified as FVOCI increases and the increase can be objectively related to an event occurring after the impairment loss was recognised in the income statement, the impairment loss is reversed through profit or loss.

Impairment of non-financial assets excluding inventories and deferred tax assets

The carrying amounts of the Group's non –financial assets, other than inventories and deferred tax assets are assessed at the end of the reporting period to determine whether there is any indication of impairment.

For goodwill and other intangible assets that have an indefinite useful life and intangible assets that are not yet available for use, the recoverable amount is estimated at the end of the reporting period.

An impairment loss is recognised whenever the carrying amount of an asset or its cash-generating unit exceeds its recoverable amount. Impairment losses are recognised in the consolidated income statement.

Impairment losses recognised in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to cash-generating units and then to reduce the carrying amount of the other assets in the unit on a pro rata basis. A cash generating unit is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets.

Calculation of recoverable amount

The recoverable amount is the greater of fair value less cost to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset.

For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

Reversals of impairment

An impairment loss in respect of goodwill is not reversed.

In respect of other assets, an impairment loss is reversed when there is an indication that the impairment loss may no longer exist and there has been a change in the estimates used to determine the recoverable amount.

An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

1.13 Inventories

Inventories (excluding engineering stocks and maintenance spares) are stated at the lower of cost, using the first-in first-out or average cost method, and net realisable value which is defined as the estimated selling price less the estimated cost of completion and the estimated costs necessary to make the sale. Cost includes expenditure incurred in acquiring the inventories, production or conversion costs and other costs in bringing them to their existing location and condition. In the case of manufactured inventories and work in progress, cost includes an appropriate share of overheads based on normal operating capacity. Provision is made for obsolete, slow-moving or defective items where appropriate.

Items owned by the Group that are held on consignment at another entity's premises are included as part of the Group's inventory.

Engineering stocks and maintenance spares are valued at moving average price. Catalysts, which are part of the chemical reaction and are consumed in the production process, are held as raw materials and consumables within inventories. These are consumed over a certain period, depending on their renewal cycles, according to normal production levels.

Cost of sales includes direct costs of raw material, distribution and handling costs.

1.14 Commodities

Contracts that are entered into and continue to be held for the purpose of receipt or delivery of non-financial items in accordance with the Group's expected purchase, sale or usage requirements (own-use contracts) are not accounted for as derivative financial instruments, but rather as executory contracts.

1.15 Leases

At inception of a contract, the Group assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the Group uses the definition of a lease in IFRS 16 *Leases*.

Group as a lessee

Right-of-use assets

The Group recognises right-of-use assets at the commencement date of the lease (i.e., the date the underlying asset is available for use). Right-of-use assets are measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any remeasurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities recognised and lease payments made at or before the commencement date, plus any initial direct costs incurred and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

The right-of-use asset is subsequently depreciated using the straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group by the end of the lease term or the cost of the right-of-use asset reflects that the Group will exercise a purchase option. In that case the right-of-use asset will be depreciated over the useful life of the underlying asset, which is determined on the same basis as those of property and equipment. In addition, the right-of-use asset is periodically reduced by impairment losses, if any, and adjusted for certain remeasurements of the lease liability.

Lease liabilities

At the commencement date of the lease, the Group recognises lease liabilities measured at the present value of lease payments to be made over the lease term, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Group's incremental borrowing rate.

The lease payments include fixed payments (including in-substance fixed payments), variable lease payments that depend on an index or a rate (initially measured using the index or rate as at the commencement date), amounts expected to be paid under residual value guarantees less any lease incentives receivable. The lease payments also include the exercise price of a purchase option reasonably certain to be exercised by the Group and payments of penalties for terminating a lease, if the lease term reflects the Group exercising the option to terminate. The variable lease payments that do not depend on an index or a rate are expensed in the period in which the event or condition that triggers the payment occurs.

The lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability (using the effective interest method) and by reducing the carrying amount to reflect the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a modification, a change in the lease term, a change in the in-substance fixed lease payments a change in the assessment of whether the Group is reasonably certain to exercise an option to purchase the underlying asset, a change in future lease payments arising from a change in an index or rate, or if there is a change in the Group's estimate of the amount expected to be payable under a residual value guarantee.

When the lease liability is remeasured in this way and there has been no change in the scope of the lease, a corresponding adjustment is made to the carrying amount of the right-of-use asset, or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

Short-term leases and leases of low-value assets

The Group applies the short-term lease recognition exemption to all leases that have a lease term of 12 months or less from the commencement date and do not contain a purchase option. The Group also applies the lease of low-value assets recognition exemption to leases of assets that are valued below €10,000. Lease payments on short-term leases and leases of low-value assets are recognised as expense on a straight-line basis over the lease term.

1.16 Government grants and similar deferred income

Government grants and similar deferred income are shown in the balance sheet as deferred income. This income is amortised on a straight-line basis over the same period as the tangible fixed asset to which it relates or the life of the related project.

1.17 Employee benefits

The Group operates a number of defined contribution plans and funded and unfunded defined benefit pension schemes. The Group also provides unfunded early retirement benefits, long service awards and an incentive plan for certain employees.

The Group provides health care insurance to eligible retired employees and their dependants, primarily in the United States.

Defined contribution plans

A defined contribution plan is a post-employment benefit plan under which the Group pays fixed contributions into a separate entity and will have no legal or constructive obligation to pay further amounts. Obligations for contributions to defined contribution pension plans are recognised as an expense in the consolidated income statement as incurred.

Defined benefit plans

A defined benefit plan is a post-employment benefit plan other than a defined contribution plan. The Group's net obligation in respect of defined benefit pension plans and other post-employment benefits is calculated separately for each plan by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value, and the fair value of any plan assets (at bid price) are deducted. The liability discount rate is the yield at the reporting date on AA credit rated bonds denominated in the currency of, and that have maturity dates approximating to the terms of, the Group's obligations. The calculation is performed by a qualified actuary using the projected unit credit method.

When the benefits of a plan are amended or curtailed, the portion of the increased or decreased benefit relating to past service by employees is recognised as an expense immediately in the consolidated income statement.

Where the calculation results in a benefit to the Group, the asset recognised is limited to the present value of any future refunds from the plan or reductions in future contributions to the plan.

The pension scheme surplus (to the extent that it is recoverable) or deficit is recognised in full.

The movement in the scheme surplus/deficit is split between:

- cost of sales and administrative expenses;
- net finance costs and,
- in net expense recognised directly in equity, the remeasurements of post employment benefit obligations.

Certain of the Group's pension plans include multi-employer schemes for employees of the Group and other INEOS or third-party companies. The method used to split the results between the Group and the other participating employers is as follows:

- Most members are allocated to a specific company, but where this was not possible members are allocated to the largest employer within the Group.
- Active scheme liabilities are allocated pro-rata based on the relative value of accrued pensions for active members. Deferred and pensioner members are allocated to the largest employer within the Group.
- Total assets and cash flows are allocated in proportion to accrued pensions.
- The allocation of total scheme liabilities is based on data collected at the last valuation date and this proportionate split has been applied consistently in the calculations.

Short-term benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed as the related service is provided. A liability is recognised for the amount expected to be paid under short-term cash bonus or profit-sharing plans if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

1.18 Provisions

A provision is recognised if, as a result of a past event, the Group has a present legal or constructive obligation that can be estimated reliably and it is probable that an outflow of economic benefits will be required to settle the obligation. The timing of recognition requires the application of judgement to existing facts and circumstances, which can be subject to change. Provisions are determined by discounting the expected future cash flows at risk free pre-tax rates based on country specific government bond yields which match the maturity of the expected future cash flows. The unwinding of the discount is recognised in finance costs.

Estimated direct costs to be incurred in connection with restructuring measures are provided for when the Group has a constructive obligation, which is generally the same as the announcement date. The announcement date is the date on which the plan is announced in sufficient detail such that employees have valid expectations that the restructuring will be carried out.

The Group is exposed to environmental and remediation liabilities relating to its past operations. Provision for these costs is made when the Group has a legal or constructive obligation to carry out remediation works and costs can be estimated within a reasonable range of possible outcomes.

1.19 Share capital

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of new shares are shown in equity as a deduction, net of tax, from the proceeds.

1.20 Revenue

Revenue represents the invoiced value of products and services sold or services provided to third parties net of sales discounts, value added taxes and duties. Contracts for goods and services are analysed to determine the distinct performance obligations against which revenue should be recognised. The amount to be recognised is determined from the standalone selling prices for goods and services, allocated to the performance obligations. Revenue is recognised when (or as) the performance obligations are satisfied by transferring a promised good or service to a customer.

The timing of the satisfaction of a performance obligation varies depending on the individual terms of the sales agreement. Payment terms vary across the Group dependent on geographical location of each operating company. Transfer of control can occur when the product is received at the customer's warehouse, or loading the goods onto the relevant carrier, or when the product leaves the production site, depending on the international shipping terms that the product is sold under.

The pricing for products sold is determined by market prices (market contracts and arrangements) or is linked by a formula to published raw material prices plus an agreed additional amount (formula contracts). Revenue arising from the sale of goods is recognised when the goods are dispatched or delivered depending on the relevant delivery terms and point at which the control of the good or service is transferred to the customer.

The Group applies the five-step model for revenue recognition, introduced by IFRS 15 Revenue from Contracts with Customers. This model allows the Group to identify the contract with a customer; to determine the performance obligations in the contract; to establish the transaction price, which is later allocated to the performance obligations in the contract; and to recognise revenue when, or as, the entity satisfies a performance obligation, that is, that the control of the asset is transferred to the customer.

The Group has a small number of contracts that include distinct performance obligations. This results, in a limited number of cases, that revenue for certain performance obligations (being primarily separate shipping obligations) is recognised later in time. Additionally, certain customer contracts offer various forms of volume or early payment discount. These variable considerations might have as a consequence timing differences, but since the majority of contracts have terms of less than one year, the differences are solved within the period. Revenue is recognised to the extent that it is highly likely that a significant reversal in the amount of cumulative revenue recognised will not occur.

Additionally, certain customer contracts offer various forms of variable consideration in the form of early settlement discount or retrospective volume discounts. If it is highly probable that an early settlement discount will be taken and the amount is not expected to reverse when the variability is resolved, the discount is recognised as a reduction of revenue as the sales are recognised. If a volume discount applies retrospectively to all sales under the contract once a certain threshold is achieved, an estimate of the volumes to be sold and the resulting discount is calculated in determining the transaction price and this calculation is updated throughout the term of the contract.

Certain time and location swap contracts with third parties for commodities and finished goods are excluded from turnover and cost of sales.

1.20 Revenue (continued)

Services provided to third parties include administrative and operational services provided to other companies with facilities on the Group's sites. Revenue is recognised at a point in time or over-time depending on whether the over-time revenue recognition criteria is met.

No assets related to costs to obtain or fulfil a contract have been recognised. Its impact, if any, is deemed immaterial.

1.21 Finance income and costs

Interest income and interest expense are recognised in the consolidated income statement as it accrues, using the effective interest method. Dividend income is recognised in the consolidated income statement on the date the entity's right to receive payments is established. Foreign exchange gains and losses are reported on a net basis.

Finance costs comprise interest payable, finance charges on leases, unwinding of the discount on provisions, net fair value losses on derivatives, net interest on employee benefit liabilities and net foreign exchange losses that are recognised in the consolidated income statement (see foreign exchange accounting policy).

Finance income comprises interest receivable on funds invested and from related party loans, net fair value gains on derivatives and net foreign exchange gains.

1.22 Taxation

Tax on the profit or loss for the year comprises current and deferred tax. Tax is recognised in the consolidated income statement except to the extent that it relates to items recognised directly in equity, in which case it is recognised in equity.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the end of the reporting period, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The following temporary differences are not provided for: the initial recognition of goodwill; the initial recognition of assets or liabilities that affect neither accounting nor taxable profit other than in a business combination; and differences relating to investments in subsidiaries to the extent that they will probably not reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the end of the reporting period. Deferred tax assets and liabilities are offset if it is possible that there is a legally enforceable right to offset current tax liabilities and assets because they relate to taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the temporary difference can be utilised.

1.23 Segmental analysis

The Group determines its operating segments in a manner consistent with the internal reporting provided to the chief operating decision-makers. The chief operating decision-makers are responsible for allocating resources and assessing performance of the operating segments. The chief operating decision-makers are the members of the Executive Committees of each business who report into the shareholder.

The Group's primary format for segment reporting is based on business segments. The business segments are determined based on the Group's management and internal reporting structure and the aggregation criteria set out in IFRS 8.

Segment results that are reported to the chief operating decision-makers include items directly attributable to a segment as well as those that can be allocated on a reasonable basis.

Details of the Group operating segments and the segmental analysis of revenue and EBITDA before exceptionals are shown in note 2.

1.24 Exceptional items

In order to provide readers with a clear and consistent presentation of the underlying operating performance of the Group's ongoing business it separately identifies those profits and losses which because of their size or nature, are outside the normal course of business so are expected to be non-recurring. This may include the disposal of businesses, the impairment of non-current assets, the cost of restructuring acquired or existing businesses, the impact of one off events such as legal settlements or finance costs relating to call premia and write-off of unamortised debt issue costs following substantial modification or redemption of debt as exceptional items.

1.25 Emissions Trading schemes

The Group participates in the EU and UK Emissions Trading Schemes. The Scheme encourages companies to reduce carbon emissions by offering financial incentives if they achieve their annual reduction targets. If a company reduces emissions beyond their target then the surplus may be traded in the form of emissions permits.

The incentive money due from the EU and UK Emissions Trading Schemes are recognised in the consolidated income statement within cost of sales as a reduction of energy costs once the reduction targets have been met. The emissions permits allocated under the Scheme are at nil cost. Any additional emission permits that are purchased are recognised as intangible assets. The Group recognises the revenue from such permits upon their sale to third parties.

The Group accrues for emissions produced. The accrual is measured at the carrying amount of the emission rights held (nil if granted, otherwise at cost) or, in the case of a shortfall, at the current fair value of the emission rights needed.

1.26 Accounting standards not applied

A number of new standards and amendments are effective for annual periods beginning after 1 January 2023 and earlier application is permitted; however, the Group has not early adopted the new or amended standards in preparing these consolidated financial statements.

The impact of their adoption is being assessed and is not expected to have a material impact on the Group's financial statements in the period of initial application. The new standards and amendments are as follows:

- IFRS 17 Insurance Contracts (effective date 1 January 2023).
- Amendments to IAS 12: Income taxes—deferred tax related to assets and liabilities arising from a single transaction (effective date 1 January 2023).
- Amendments to IAS 1 Presentation of Financial Statements and IFRS Practice Statement 2: Disclosure of Accounting Policies (effective date 1 January 2023).
- Amendments to IAS 8: Definition of Accounting Estimates (effective date 1 January 2023).
- Amendments to IFRS 16: Lease liability in a sale and leaseback (effective date 1 January 2024).

2 OPERATING SEGMENTS

Revenue and EBITDA before exceptional items are key measures used by the chief operating decision makers of the Group to assess the performance of the business segments.

The Group divides its operations into four segments:

- *Styrolution*, consisting of a portfolio of styrene monomer, polystyrene and acrylonitrile butadiene styrene ("ABS") and a number of other styrene derivatives under the category of "Specialties" such as ABS specialty and copolymers.
- *INEOS Inovyn*, consisting of general purpose and specialty suspension PVC, emulsion PVC, caustic soda, caustic potash, chlorine and chlorine by-products, brine and water, salt, hydrochloric acid, chlorinated paraffins, chlorinated solvents, allylics and epichlorohydrin.
- *Acetyls*, consisting of a variety of organic compounds, including acetic acid, acetic anhydride, methanol, ethyl acetate and vinyl acetate.
- *Aromatics*, consisting of a variety of aromatic chemical compounds, including paraxylene, purified terephthalic acid, benzene and metaxylene.

2 OPERATING SEGMENTS (continued)

The revenue and EBITDA before exceptional items attributable to each business segment was as follows:

	Revenue		EBITDA before exceptional items	
	2022	2021	2022	2021
	€m			
Styrolution	6,634.3	5,889.7	748.6	1,180.3
INEOS Inovyn	5,136.2	4,225.6	1,176.0	974.4
Acetyls	1,369.6	1,219.0	363.4	622.0
Aromatics	5,115.2	3,683.2	284.4	262.4
Eliminations	(83.0)	(85.3)	-	-
	18,172.3	**14,932.2**	**2,572.4**	**3,039.1**

All revenues and EBITDA are in relation to the Group's ordinary activities.

Reconciliation of earnings before operating exceptional items, interest, taxation, impairment, depreciation and amortisation and after the share of profit/loss of associated undertakings and joint ventures using the equity accounting method ("EBITDA before exceptionals") to profit before tax:

	2022	2021
	€m	
EBITDA before exceptional items	2,572.4	3,039.1
Depreciation, amortisation and impairment charges	(712.3)	(718.4)
Exceptional items within operating profit (note 4)	(5.1)	(181.7)
Impairment of investments (note 12)	-	(1.0)
Profit on disposal of property, plant and equipment	5.6	4.3
Loss on disposal of equity accounted investment (note 12)	(26.6)	-
Profit on disposal of businesses (note 3)	710.3	-
Net finance costs (note 8)	(201.7)	(240.2)
Profit before tax	**2,342.6**	**1,902.1**

Geographical analysis – revenues

Geographical information by location of customers	2022	2021
	€m	
Europe	8,222.6	6,694.6
North Americas	4,368.8	2,963.8
Rest of World	5,580.9	5,273.8
Total	**18,172.3**	**14,932.2**

Geographical information by location of trading legal entity	2022	2021
	€m	
Europe	8,757.3	7,434.1
North Americas	4,570.8	3,155.1
Rest of World	4,844.2	4,343.0
Total	**18,172.3**	**14,932.2**

In presenting information on the basis of geographic analysis of segments, segment revenue is based on the geographical location of customers and registered address of the Group's trading legal entities.

3 ACQUISITION AND DISPOSAL OF BUSINESSES

Disposals in current year

Disposal of INEOS Styrolution India Limited

On 22 April 2022, the Group sold 13.8% of its shareholding in INEOS Styrolution India Limited for consideration of $25.1 million (€22.5 million equivalent). The Group's shareholding reduced from 75.0% to 61.2% as a result, with control being retained.

On 1 August 2022, the Group entered into an agreement to divest its remaining shareholding of 61.19% in INEOS Styrolution India Limited with Shiva Performance Materials Private Limited. The transaction was completed on 17 November 2022.

The net assets disposed at the date of disposal were as follows:

	Recognised values on disposal
	€m
Subsidiary's net assets recognised at the disposal date:	
Property, plant and equipment	39.9
Intangible assets	72.2
Investments	0.2
Inventories	41.1
Current debtors and other assets	44.4
Cash and cash equivalents	14.8
Trade and other payables	(5.0)
Lease liability	(40.4)
Employees benefits	(0.1)
Provisions	(1.3)
Deferred tax liabilities	(11.6)
Tax liabilities for current tax	(4.2)
Minority interests	(32.5)
Net assets of disposal group	**117.5**
Proceeds:	
Cash consideration	80.7
Accrued transaction costs	(0.5)
Net proceeds	**80.2**
Reclassification of foreign currency translation reserve to the income statement	9.8
Loss on disposal	**(47.1)**

The loss on disposal of €47.1 million, being the difference between net proceeds of €80.2 million (after deduction of transaction costs), the reclassification of foreign currency translation gains from reserve to the income statement of €9.8 million and net assets disposed of has been recognised in the statement of comprehensive income.

The transaction resulted in a net cash inflow of €65.9 million, being the difference between the sale price of €80.7 million less the cash balances held by the disposed business of €14.8 million. Transaction costs of €0.5 million remain unsettled as at 31 December 2022.

3 ACQUISITION AND DISPOSAL OF BUSINESSES (continued)

Disposals in current year

Equity transfer agreement of INEOS Styrolution Advanced Materials (Ningbo) Pte Limited

On 28 July 2022, the Group's subsidiary, INEOS Styrolution APAC Pte. Limited, entered into an agreement to transfer 50% of its shareholding in INEOS Styrolution Advanced Materials (Ningbo) Pte Limited to China Petroleum & Chemical Corporation ("Sinopec"). As a result, the Group lost control but retained joint control. Based on the terms of the joint-arrangement reviewed in accordance with IFRS 11, the Group has assessed that its 50% interest represents an interest in a joint venture and shall be accounted for using the equity method. The transaction was completed on 28 December 2022.

The net assets disposed at the date of the loss of control were as follows:

	Recognised values on disposal
	€m
Disposal of 100% of subsidiary's net assets recognised at the loss of control date:	
Property, plant and equipment	560.9
Intangible assets	0.6
Deferred tax assets	2.0
Inventories	0.4
Current debtors and other assets	58.3
Cash and cash equivalents	40.7
Trade and other payables	(34.1)
Intercompany loans	(64.7)
External loans and borrowings	(408.9)
Debt issue costs	0.4
Net assets of disposal group	**155.6**
Recognition of 50% of the joint-venture equity share:	
Fair value of share of joint-venture	**443.1**
Proceeds:	
Cash consideration*	226.4
Deferred consideration	246.2
Accrued transaction costs	(2.7)
Net proceeds	**469.9**
Gain on disposal	**757.4**

*Withholding tax of €13.5 million was paid in respect of this transaction.

The profit on disposal of €757.4 million, being the difference between the net proceeds of €469.9 million (after deduction of transaction costs); the 50% of the joint-venture equity share recognised at fair value of €443.1 million and net assets disposed of has been recognised in the statement of comprehensive income.

The deferred consideration is related to future instalments to be received from Sinopec on the achievement of certain milestones, which are expected to be fulfilled by December 2023 at the latest. The deferred consideration has been discounted to recognise the time value of money.

The cost of acquiring the 50% of the joint-venture equity share has been measured at fair value by applying discounted cash flow method based on a long-term business plan with a detailed planning period of seven years.

The transaction resulted in a net cash inflow of €172.2 million, being the difference between the sale price settled on completion of €226.4 million less €13.5 million of withholding tax paid and the cash balances held by the disposed business of €40.7 million. Transaction costs of €2.7 million remain unsettled as at 31 December 2022.

3 ACQUISITION AND DISPOSAL OF BUSINESSES (continued)

Acquisitions in the prior year – BP Petrochemicals

On 31 December 2020, pursuant to an acquisition agreement dated 29 June 2020 between INEOS Holdings AG and BP, certain subsidiaries of the Group agreed to purchase the Aromatics and Acetyls businesses from certain subsidiaries of BP (the "BP Acquisition" or the "BP Petrochemicals Business"), including shares in seven jointly-controlled joint ventures and the assets owned and used in relation to the Aromatics and Acetyls businesses.

The total purchase price for the BP Petrochemicals business of $4,990.0 million (€4,178.3 million equivalent) was subject to a completion accounts settlement process. Cash of €88.3 million was acquired with the Aromatics and Acetyls businesses on 31 December 2020. During 2021, the completion accounts settlement process was finalised, leading to a €85.8 million cash inflow from BP.

During the year ended 31 December 2021 the Group reviewed these provisional fair values and the fair value of identifiable assets and liabilities acquired, purchase consideration and goodwill was updated in 2021 as shown in the table below. Following the clarification of certain terms of the sale and purchase agreement with BP, additional liabilities were recognised in relation to employees' compensation costs triggered at the acquisition date for €23.8 million and transfer to BP of a tax refund received by PT INEOS Aromatics Indonesia for €6.4 million. The balance sheet as at 31 December 2020 has not been restated to reflect the above as the impact is not material.

	2020				2021	
	Book value on acquisition	**Accounting policy alignment**	**Fair value adjustments**	**Provisional fair value on acquisition**	**Revaluation updates**	**Final values recognised on acquisition**
				€m		
Acquiree's net assets at acquisition date:						
Property, plant and equipment	1,726.2	29.4	(41.9)	1,713.7	-	1,713.7
Intangible assets	3.4	-	558.7	562.1	-	562.1
Investments in equity accounted investees	789.1	-	390.3	1,179.4	-	1,179.4
Other non-current financial assets	2.0	-	-	2.0	-	2.0
Other investments	12.6	-	-	12.6	-	12.6
Other non-current receivables	1.6	-	-	1.6	-	1.6
Deferred tax assets	8.3	-	18.2	26.5	-	26.5
Inventories	322.2	(29.4)	(4.6)	288.2	-	288.2
Trade and other receivables	455.4	-	(33.6)	421.8	-	421.8
Cash and cash equivalents	88.3	-	-	88.3	-	88.3
Current and non-current interest-bearing loans and borrowings	(17.2)	-	-	(17.2)	-	(17.2)
Current and non-current lease liabilities	(85.4)	-	-	(85.4)	-	(85.4)
Current and non-current trade and other payables	(404.2)	-	(4.0)	(408.2)	(30.2)	(438.4)
Employee benefits	(2.4)	-	(0.1)	(2.5)	-	(2.5)
Current and non-current provisions	(2.9)	-	(1.5)	(4.4)	-	(4.4)
Deferred tax liabilities	(82.4)	-	17.2	(65.2)	-	(65.2)
Net identifiable assets and liabilities acquired	**2,814.6**	**-**	**898.7**	**3,713.3**	**(30.2)**	**3,683.1**
Non-controlling interest				(45.1)	-	(45.1)
Net assets				**3,668.2**	**(30.2)**	**3,638.0**
Consideration paid:						
Cash consideration				4,178.3	-	4,178.3
Completion accounts settlement adjustment				(66.0)	(19.8)	(85.8)
Effect of movements in foreign exchange				-	0.9	0.9
Difference between consideration and net assets acquired				**444.1**	**11.3**	**455.4**

The difference between consideration and net assets acquired has been recognised within intangible assets in note 11. Goodwill is not expected to be deductible for income tax purposes.

4 EXCEPTIONAL ITEMS

	2022	2021
	€m	
Exceptional items included in cost of sales:		
Plant closure costs[1]	-	19.0
Environmental costs[2]	-	121.6
	-	**140.6**
Exceptional items included in administrative expenses:		
Acquisition costs[3]	-	4.1
Reorganisation costs[4]	1.3	37.8
Other[5]	3.8	(0.8)
	5.1	**41.1**
Exceptional items excluding finance costs	**5.1**	**181.7**
Exceptional finance costs:		
Charge on early settlement of debt[6]	4.3	68.9
Total exceptional expenses	**9.4**	**250.6**

Exceptional cost of sales and administrative expenses:

(1) In March 2021, the Group announced the closure of the sulphur chemicals plant at Runcorn, United Kingdom and its withdrawal from the UK sulphur chemicals market. As a consequence, exceptional provisions of €11.9 million were recognised to cover the cost of exiting certain commercial agreements and the safe decommissioning of the plant. A further exceptional charge of €2.1 million was incurred in respect of redundant stock write-downs.

Remediation activities are continuing at Wilhelmshaven, Germany following the closure of INOVYN's mercury cell room in 2013. In 2021, a further provision of €5.0 million was made in 2021 to cover the extended operation of the waste water treatment plant until the demolition of the cell room is completed.

(2) In 2016, INOVYN's mercury cellroom at Runcorn, United Kingdom ceased production. Following a full review and assessment of scope and the availability of reliable cost estimates an exceptional provision of €25.8 million was recognised in 2021 to cover the demolition of the cellroom, including the safe disposal of hazardous waste and elemental mercury.

A €22.6 million provision was made by the Group's site in Runcorn, United Kingdom in relation to the demolition of the redundant Weston Point Power Station after management approved plans in 2021 for the removal of asbestos from the structure. Moreover, a dismantling provision of €9.1 million was recognised at Runcorn in relation to the aforementioned closure of the sulphur chemicals plant.

The Group also approved plans in 2021 for the dismantling of the mercury cell room at Wilhelmshaven, Germany and related infrastructure in 2021, after atmospheric and groundwater mercury levels exceeded permissible limits, with total provisions of €25.0 million being recognised.

At the Group's site at Tavaux, France, an exceptional charge of €18.5 million (€21.8 million of new provisions less €3.3 million of grants receivable) was incurred in order to comply with the obligations of the EU Water Directive, specifically in relation to an industrial scale waste water treatment plant and the sealing of sedimentation basins.

In addition to the above, further exceptional charges of €20.6 million (€23.4 million of new provisions less €2.8 million of grants receivable) were created in 2021 at the Group's sites at Lillo, Belgium; Zandvliet, Belgium; Tavazzano, Italy; Ferrara, Italy; Tavaux, France; and Runcorn, United Kingdom for various remediation related projects mostly associated with mercury contamination.

(3) In 2020, certain subsidiaries of the Group acquired the Aromatics and Acetyls businesses from certain subsidiaries of BP. Acquisition-related professional fees relating to legal, accounting, human resources, industry specialists, environmental specialists and other consultancy costs were incurred in 2021.

4 EXCEPTIONAL ITEMS (continued)

(4) In 2022, the Aromatics businesses incurred €1.3 million of exceptional charges in respect of manpower reorganisations.

In 2021, the Aromatics and Acetyls businesses incurred €37.8 million of exceptional charges in respect of manpower reorganisations and various IT-related costs following the cessation of the IT transitional service agreement with BP.

(5) In 2022, the Aromatics businesses incurred €3.8 million of exceptional charges related to cancellation of projects started under BP ownership and no longer expected to be pursued. The exceptional credit in 2021 of €0.8 million relates to the release of provisions made in prior years for legal claims and commercial disputes.

Exceptional finance costs:

(6) In 2022, exceptional finance costs of €4.3 million were incurred in relation to the write off of unamortised debt issue costs associated with the Term Loan A Facilities due 2023 and the Term Loan A Facilities due 2025 which were repaid in full on 31 May 2022.

In 2021, exceptional finance costs of €52.7 million relate to the write off of unamortised debt issue costs associated with the Five-Year Euro Term Loan A Facility, the Bridge Facilities and the INOVYN Senior Secured Term Loan B Facility that were repaid on 29 January 2021. In addition, there was a finance charge of €16.2 million from a related party in respect of funding provided for the BP acquisition.

There is no material effect on the tax charge due to exceptional items.

5 OPERATING PROFIT

Included in operating profit are the following:

	2022	2021
	€m	
Research and development costs expensed as incurred	32.7	42.6
Amortisation of intangible assets	129.4	122.9
Expenses relating to short-term leases	6.0	5.4
Expenses relating to leases of low value assets	0.6	2.1
Expenses relating to variable lease payments not included in the measurement of the lease liability	9.3	19.7
Depreciation and impairment of property, plant and equipment - within cost of sales, distribution costs and administrative expenses		
Owned assets - depreciation	495.2	450.5
Right-of-use assets - depreciation	87.7	88.7
	582.9	539.2
Owned assets - impairment	-	56.3
	582.9	**595.5**

	2022	2021
	€m	
Auditor's remuneration		
Audit of these financial statements	1.0	0.7
Amounts receivable by auditors and their associates in respect of:		
Audit of financial statements of subsidiaries pursuant to legislation	4.1	4.1
Non-audit services	0.2	0.9
	5.3	**5.7**

The audit fee above includes the audit fee of €13,600 (2021: €10,300) for the parent Company.

6 STAFF NUMBERS AND COSTS

The monthly average number of persons including directors employed by the Group (including any divestitures up to the date of disposal and any acquisitions from the date of acquisition) during the year, analysed by category, was as follows:

	2022	2021
	Number	
Research and development	238	289
Administration	1,673	1,795
Operations	6,711	7,120
	8,622	**9,204**

The aggregate payroll costs of these persons were as follows:

	2022	2021
	€m	
Wages and salaries	842.3	821.6
Social security costs	118.6	111.7
Contributions to defined contribution plans	44.9	39.1
Items related to defined benefit plans:		
Current service cost	21.7	24.9
Past service credit	-	(0.2)
	1,027.5	**997.1**

7 DIRECTORS' REMUNERATION

	2022	2021
	€m	
Salaries and other short-term benefits	1.6	1.6
Company contributions to money purchase schemes	-	-
Other long-term benefits	-	-
	1.6	**1.6**

Highest paid director	2022	2021
	€m	
Aggregate emoluments	**1.6**	**1.6**

One director has benefits accrued under defined benefit schemes (2021: one). No directors have benefits accruing under defined contribution schemes (2021: nil).

8 FINANCE INCOME AND COSTS

	2022	2021
	€m	
Finance income		
Interest receivable from banks and short-term deposits	7.2	1.9
Interest receivable from associated undertakings	2.1	2.0
Other interest income	5.3	3.3
Total interest income on financial assets not at fair value through profit or loss	14.6	7.2
Net exchange movements	62.1	94.4
Unwind of discount on provisions	12.9	0.2
Total finance income	**89.6**	**101.8**
Finance costs		
Interest payable on Term Loans	156.0	119.5
Interest payable on Bridge Facilities	-	8.3
Interest payable on bank loans and overdrafts	7.7	-
Interest payable on Senior Secured Notes and Senior Notes	68.2	62.4
Interest payable on securitisation facility	3.9	3.5
Interest payable on revolving credit facility	-	1.5
Interest payable to related parties	1.8	1.7
Amortisation of debt issue costs	17.6	15.9
Interest payable on right-of-use assets	12.1	11.6
Net fair value loss on derivatives	20.8	40.8
Interest expense on pension schemes	1.8	2.1
Borrowing costs capitalised in property, plant and equipment	(7.7)	-
Other interest expense	4.8	5.8
Total finance costs before exceptional items	**287.0**	**273.1**
Exceptional finance costs (note 4)	4.3	68.9
Total finance costs	**291.3**	**342.0**
Net finance costs	**201.7**	**240.2**

The exchange movements reflect foreign exchange gains or losses associated with short term intra group funding.

Net gains and losses on financial instruments are included in note 25.

9 TAX CHARGE

Taxation recognised in the consolidated income statement

	2022	2021
	€m	
Current tax expense		
Current tax expense	293.9	348.1
Adjustments in respect of prior years	27.1	14.2
Current tax expense	**321.0**	**362.3**
Deferred tax charge/(credit)		
Origination and reversal of temporary differences	64.4	(0.7)
Change in tax rates applied to temporary differences	(0.6)	(27.9)
Adjustments in respect of prior years	(7.1)	(7.7)
Deferred tax charge/(credit) (see note 14)	**56.7**	**(36.3)**
Total tax charge	**377.7**	**326.0**

Reconciliation of effective tax rate	2022	2021
	€m	
Profit before taxation	2,342.6	1,902.1
Tax using the UK corporation tax rate of 19.0% (2021: 19.0%)	445.1	361.4
Effect of tax rates in foreign jurisdictions	65.6	32.9
Non-deductible expenses	(133.7)	37.4
Change in tax rate	(1.0)	(28.2)
Adjustments in respect of prior years	20.0	6.5
Non-taxable joint venture income	(44.1)	(87.9)
Deferred tax not recognised	26.6	-
Other	(0.8)	3.9
Total tax charge	**377.7**	**326.0**

The Finance Bill 2021 which increased the rate of corporation tax to 25% on profits over £250,000 from April 2023 was substantively enacted on 24 May 2021. As a result, deferred taxes in the United Kingdom at 31 December 2022 are measured at 25%. Taxation for other jurisdictions is calculated at the rates prevailing in the respective jurisdictions.

Taxation recognised in other comprehensive (expense)/income

	2022			2021		
	Gross	Tax	Net	Gross	Tax	Net
			€m			
Remeasurement of post-employment benefit obligations net of taxes	(35.6)	6.8	(28.8)	54.8	(9.6)	45.2
Fair value loss on investments in equity instruments designated as FVTOCI	(0.4)	-	(0.4)	-	-	-
Reclassification of foreign exchange translation difference on disposal of subsidiaries	9.8	-	9.8	-	-	-
Foreign exchange translation differences of subsidiaries	(51.0)	-	(51.0)	202.9	-	202.9
	(77.2)	**6.8**	**(70.4)**	**257.7**	**(9.6)**	**248.1**

10 PROPERTY, PLANT AND EQUIPMENT

	Land	Buildings	Plant and equipment, fixtures and fittings, and vehicles	Assets under construction	Right-of-use assets	Total
			€m			
Cost						
At 1 January 2021	267.4	403.4	4,027.8	792.9	394.3	5,885.8
Additions	-	5.1	93.3	647.5	48.9	794.8
Lease modifications and reassessments	-	-	-	-	23.9	23.9
Reclassification	2.7	47.2	375.2	(440.1)	-	(15.0)
Aborted capital expenditure	-	-	-	(1.2)	-	(1.2)
Early termination of right-of-use assets	-	-	-	-	(0.9)	(0.9)
Disposals	(5.0)	(2.4)	(357.5)	-	(16.5)	(381.4)
Effects of movements in foreign exchange	17.4	10.6	186.5	61.7	15.5	291.7
At 31 December 2021	**282.5**	**463.9**	**4,325.3**	**1,060.8**	**465.2**	**6,597.7**
Additions	-	30.5	616.4	226.8	40.5	914.2
Lease modifications and reassessments	-	-	-	-	40.1	40.1
Reclassification	26.0	53.4	271.4	(343.8)	3.5	10.5
Aborted capital expenditure	-	-	-	(16.9)	-	(16.9)
Disposals	(1.9)	(0.3)	(82.2)	-	(27.7)	(112.1)
Business disposal	(38.4)	(11.6)	(37.0)	(530.3)	(7.1)	(624.4)
Effects of movements in foreign exchange	10.8	(6.5)	(33.9)	20.0	6.2	(3.4)
At 31 December 2022	**279.0**	**529.4**	**5,060.0**	**416.6**	**520.7**	**6,805.7**
Accumulated depreciation and impairment						
At 1 January 2021	1.8	108.5	1,150.5	0.3	91.5	1,352.6
Depreciation charge for the year	1.7	22.6	426.2	-	88.7	539.2
Impairment charge for the year	1.5	-	54.8	-	-	56.3
Reclassification	0.1	0.3	(9.4)	(0.3)	-	(9.3)
Disposals	-	(1.7)	(356.7)	-	(16.5)	(374.9)
Effects of movements in foreign exchange	0.2	2.9	53.8	-	4.7	61.6
At 31 December 2021	**5.3**	**132.6**	**1,319.2**	**-**	**168.4**	**1,625.5**
Depreciation charge for the year	2.0	24.1	469.1	-	87.7	582.9
Reclassification	-	6.1	2.9	-	(0.9)	8.1
Disposals	(1.5)	(0.2)	(89.0)	-	(27.3)	(118.0)
Business disposal	(0.5)	(3.9)	(16.3)	-	(2.9)	(23.6)
Effects of movements in foreign exchange	-	0.5	4.9	-	2.6	8.0
At 31 December 2022	**5.3**	**159.2**	**1,690.8**	**-**	**227.6**	**2,082.9**
Net book value						
At 31 December 2021	277.2	331.3	3,006.1	1,060.8	296.8	4,972.2
At 31 December 2022	**273.7**	**370.2**	**3,369.2**	**416.6**	**293.1**	**4,722.8**

10 PROPERTY, PLANT AND EQUIPMENT (continued)

Property, plant and equipment under construction

In the year ended 31 December 2022, the Group acquired €226.8 million of property, plant and equipment under construction.

In the Styrolution business, the most significant expenditures in 2022 related to a new 600 kiloton ABS facility at Ningbo, China and a newly built ESPN plant in the US. In addition, there were planned turnarounds at the SM plant in Sarnia, Canada.

In the INEOS Inovyn business, the most significant expenditures consisted of a SPVC capacity expansion project at Jemeppe, a new mechanical vapor recompression salt plant at Tavaux, a brine borehole drilling program at Northwich and general SHE/sustenance expenditures. There were also planned turnaround events of the chlor-alkali and VCM assets at Grenland in Norway and the cracker at Feyzin, France.

In the Acetyls business, the most significant capital expenditure project related to the turnaround of the A5 acetic acid plant at Hull, U.K.

In the Aromatics business, the most significant expenditures were mainly on sustenance and safety compliance work to keep the assets running safely and in line with regulatory requirements. In addition, capital expenditures were incurred on an expansion project in Europe.

Investments in property, plant and equipment in the year ended 31 December 2021 mainly related to the new ASA Specialties plant at Bayport, US, a new 600 kilo ton ABS facility at Ningbo, China and a 78 kilo ton SPVC capacity expansion project at Jemeppe, Belgium

Business disposal

The disposal of INEOS Styrolution India Limited in November 2022 resulted in the disposal of property, plant and equipment of €39.9 million (see note 3). The transfer of 50% of the shareholding in INEOS Styrolution Advanced Materials (Ningbo) Pte Limited to Sinopec in December 2022 resulted in the disposal of property, plant and equipment of €560.9 milion, the majority of which were assets under construction in relation to a new 600 kiloton ABS facility at Ningbo, China (see note 3).

Aborted capital expenditure

The proposed technology upgrade and modernization of one of the units of the Aromatics plant in Zhuhai, China was aborted due to poor economics of the project.

Impairment charge in prior year

Impairment charges in the prior year were mainly related to the closure of the the sulphur chemicals plant in Runcorn, United Kingdom, abortion of a project to investigate the economic viability of a cellroom conversion utilising membrane technology at Martorell, Spain and the write-down of basic engineering works and equipment associated with an own-build new steam generator unit in Bayport, US.

10 PROPERTY, PLANT AND EQUIPMENT (continued)

Right-of-use assets

	Land	Buildings	Plant and equipment, fixtures and fittings, and vehicles	Total
			€m	
At 1 January 2021	10.2	87.1	297.0	394.3
Additions	-	1.6	47.3	48.9
Lease modifications and remeasurements	-	2.9	21.0	23.9
Early termination of right-of-use assets	-	-	(0.9)	(0.9)
Disposals	-	(1.3)	(15.2)	(16.5)
Effects of movement in foreign exchange	0.3	1.9	13.3	15.5
At 31 December 2021	**10.5**	**92.2**	**362.5**	**465.2**
Additions	-	3.5	37.0	40.5
Lease modifications and remeasurements	5.1	0.7	34.3	40.1
Reclassification	-	-	3.5	3.5
Disposals	-	(3.3)	(24.4)	(27.7)
Business disposal	-	(1.0)	(6.1)	(7.1)
Effects of movement in foreign exchange	(0.3)	0.4	6.1	6.2
At 31 December 2022	**15.3**	**92.5**	**412.9**	**520.7**
At 1 January 2021	0.8	13.4	77.3	91.5
Depreciation charge for the year	0.5	7.7	80.5	88.7
Disposals	-	(1.3)	(15.2)	(16.5)
Effects of movement in foreign exchange	-	0.6	4.1	4.7
At 31 December 2021	**1.3**	**20.4**	**146.7**	**168.4**
Depreciation charge for the year	0.7	8.0	79.0	87.7
Reclassification	-	-	(0.9)	(0.9)
Disposals	-	(3.0)	(24.3)	(27.3)
Business disposal	-	(0.6)	(2.3)	(2.9)
Effects of movement in foreign exchange	-	0.3	2.3	2.6
At 31 December 2022	**2.0**	**25.1**	**200.5**	**227.6**
Net book value				
At 31 December 2021	9.2	71.8	215.8	296.8
At 31 December 2022	**13.3**	**67.4**	**212.4**	**293.1**

The Group mainly leases tanks, railcars, vessels, storage and transportation infrastructure, machinery, production buildings, administrative offices, motor vehicles and land, which are classified as right-of-use assets. Rental contracts are usually made for periods between 1 to 20 years, but may also include extension options. Extension options are included only if the lease term is reasonably certain to be extended and the decision of extending is mainly up to the Group (as a lessee).

See note 18 for lease obligations related to right-of-use assets.

11 INTANGIBLE ASSETS

	Goodwill	Customer relationships	Intellectual property rights	Environ-mental certificates	Licence fees	Other	Total
				€m			
Cost							
At 1 January 2021	1,124.7	1,026.4	482.5	36.7	27.8	10.0	2,708.1
Acquisitions	11.3	-	-	-	-	-	11.3
Reclassifications	-	-	(0.6)	-	3.8	-	3.2
Additions	-	-	1.5	0.3	0.6	1.1	3.5
Disposals	-	-	(22.1)	(25.2)	-	-	(47.3)
Effect of movements in foreign exchange	57.7	44.1	24.0	0.6	0.5	-	126.9
At 31 December 2021	**1,193.7**	**1,070.5**	**485.3**	**12.4**	**32.7**	**11.1**	**2,805.7**
Business disposal	(38.0)	(40.1)	(19.4)	(0.7)	-	-	(98.2)
Additions	-	-	2.5	71.7	0.3	1.2	75.7
Disposals	-	-	-	(26.8)	(0.2)	-	(27.0)
Effect of movements in foreign exchange	49.0	20.1	13.3	0.4	0.3	-	83.1
At 31 December 2022	**1,204.7**	**1,050.5**	**481.7**	**57.0**	**33.1**	**12.3**	**2,839.3**
Accumulated amortisation and impairment							
At 1 January 2021	-	278.2	124.0	-	21.8	4.4	428.4
Amortisation for the year	-	81.0	38.2	-	2.5	1.2	122.9
Disposals	-	-	(22.1)	-	-	-	(22.1)
Effect of movements in foreign exchange	-	8.0	3.2	-	0.1	-	11.3
At 31 December 2021	**-**	**367.2**	**143.3**	**-**	**24.4**	**5.6**	**540.5**
Amortisation for the year	-	83.8	42.1	0.1	2.1	1.3	129.4
Disposals	-	-	-	-	(0.2)	-	(0.2)
Business disposal	-	(17.5)	(7.7)	(0.2)	-	-	(25.4)
Effect of movements in foreign exchange	-	5.7	2.1	-	0.1	-	7.9
At 31 December 2022	**-**	**439.2**	**179.8**	**(0.1)**	**26.4**	**6.9**	**652.2**
Net book value							
At 31 December 2021	1,193.7	703.3	342.0	12.4	8.3	5.5	2,265.2
At 31 December 2022	**1,204.7**	**611.3**	**301.9**	**57.1**	**6.7**	**5.4**	**2,187.1**

Other intangible assets mainly relate to development costs, purchases for pipeline access rights and electricity grid capacity fees.

Separable intangible assets for customer relationships represent value attributed to customer relationships arising from contractual rights and non-contractual relationships and for intellectual property value mainly in relation to the right to use patents. Those were recognised as part of acquisitions in Styrolution as well as part of the acquisition of the Aromatics and Acetyls businesses. The remaining customer life or the acquired customer relationships range between 2 and 16 years and for the acquired intellectual property rights the remaining useful lives range between 6 and 15 years.

11 INTANGIBLE ASSETS (continued)

Environmental certificates are in respect of costs associated with the purchase of EU and UK Emissions Trading Scheme allowances and the nitrogen oxides emission scheme in the US. The emissions allowances are subject to impairment under the indefinite lived intangible asset impairment model.

Business disposal

The disposal of INEOS Styrolution India Limited in November 2022 resulted in the disposal of intangible assets of €72.2 million, of which €38.0 million related to goodwill (see note 3). The transfer of 50% of the shareholding in INEOS Styrolution Advanced Materials (Ningbo) Pte Limited to Sinopec in December 2022 resulted in the disposal of intangibles assets of €0.6 milion (see note 3).

Amortisation

The amortisation charge is recognised in administrative expenses in the consolidated income statement.

Goodwill impairment testing

Goodwill has been allocated to cash generating units ("CGUs") or groups of cash generating units as follows:

	2022	2021
	€m	
Polymers EMEA	252.2	252.2
Polymers Asia	61.6	98.6
Polymers Americas	196.0	184.5
Styrene Monomer	185.9	178.1
Styrolution Total	**695.7**	**713.4**
Aromatics	134.4	120.2
Acetyls	374.6	360.1
	1,204.7	**1,193.7**

The Polymers EMEA, Polymers Asia, Polymers Americas and Styrene Monomer CGU's relate to the Styrolution business.

No impairment charge has been recorded in these financial statements as a result of the annual impairment test.

For the Styrolution business' CGUs, the Group determined the recoverable amount based on value in use. The recoverable amount is calculated on a long-term business plan for the CGUs with a detailed planning period of three years and a consistent terminal growth rate of 0.5% for each unit for the period thereafter. The key assumption on which management based its cash flow projection is EBITDA before exceptionals over the detailed three year planning period, which is seen as the most important performance indicator and the basis for cash flow estimates used to determine the value in use. The terminal growth rate of 0.5% reflects the expected economic growth rates of countries in which the Group is operating. The main assumptions for the preparation of the three-year-business plan are the economic growth developments in the main customer regions and industries of the Styrolution business. These assumptions are based on external market data as well as internal assessments. The expected demand that is derived from the growth assumptions is compared with the supply balance of its product groups.

11 INTANGIBLE ASSETS (continued)

For the acquired Aromatics and Acetyls businesses, the acquisition was negotiated in total and the consideration was reviewed in the context of the whole transaction. The Aromatics and Acetyls businesses reports separately to the Group, and decisions around resource allocation and monitoring of performance consider the Acetyls and Aromatics businesses separately. Each business has its own independent management structure. The carrying amount of goodwill resulting from the acquisition has therefore been allocated between the Acetyls and Aromatics segments.

For the Acetyls and Aromatics businesses CGU's , the recoverable amount, being value in use, is calculated on a long-term business plan for the CGUs with a detailed planning period of three years and a terminal value which represents the mid-cycle performance on which a consistent terminal growth rate of 2.0% is applied for the periods thereafter. The terminal growth rate of 2.0% represents the average expected growth rates in the countries in which the Group is operating. The main assumptions for the preparation of the three-year business plans are the production volumes and margins, and dividend income from the joint ventures. The margin assumptions are based on external market data as well as internal assessments. The volume assumptions are based on historical run rates of the assets and approved increase of production projects.

None of the goodwill is expected to be deductible for income tax purposes. The following discount rates were applied per cash generating unit to determine the cash flow projection before taxes:

	Polymers EMEA	Polymers Asia	Polymers Americas	Styrene Monomer	Aromatics	Acetyls
Forecast period	3 years	3 years	3 years	3 years	3 years	3 years
Growth rate	0.5%	0.5%	0.5%	0.5%	2%	2%
Post-tax discount rate	7.9%	7.9%	7.9%	7.9%	7.9%-9.7%	7.7%-10.7%

Sensitivity analysis on the recoverable amount was performed based on a 10% increase in the discount rate, a 10% decrease to the growth rate and a 10% decrease in the gross margin, all of which are considered a reasonable possible change in estimate. Neither of these changes resulted in the recoverable amount being lower than the carrying amount except for the Hull CGU in the Acetyls business and the Geel CGU in the Aromatics business.

These two CGUs have limited headroom and as a result any change in assumption can result in the recoverable amount being lower than the carrying amount. Management has considered the assumptions used to determine the recoverable amount and considered that those assumptions are conservative especially around the price curve used for energy; moreover the current forecasts do not take into account future developments to improve the economics of the plants. On this basis, the absence of headroom, in the case of Hull CGU, or the limited headroom, in the case of Geel CGU, is not considered as an indicator that an impairment loss is required. The margin assumptions are one of the key assumption in determining the recoverable amount of each CGU. These margin assumptions are developed by management based on external market data as well as internal assessments and require a significant amount of judgement. The Group has estimated that a 10% reduction in margin could give raise to an impairment of approximately €211.3 million for the Hull CGU and could reduce the headroom to nil for the Geel CGU.

12 INVESTMENTS

12(a) Investments in subsidiary undertakings

As at 31 December 2022, the Group has the following investments in subsidiaries:

Company	Country of incorporation	Principal activity	Class of shares held	Ownership 2022	Ownership 2021	Registered office reference
INEOS Quattro Financing Limited[#]	UK	Holding company	Ordinary	100%	100%	(1)
INEOS Quattro Finance 1 plc[#]	UK	Financing company	Ordinary	100%	100%	(1)
INEOS Quattro Finance 2 plc	UK	Financing company	Ordinary	100%	100%	(1)
INEOS Styrolution Finance GmbH[(h)]	Germany	Holding company	Ordinary	100%	100%	(2)
INEOS Styrolution Holding GmbH[(h)]	Germany	Holding company	Ordinary	-	100%	(2)
INEOS Styrolution Investment GmbH	Germany	Holding company	Ordinary	100%	100%	(2)
INEOS Styrolution America LLC	USA	Manufacture of styrene monomer and polymers, selling, distribution	Members interest	100%	100%	(3)
INEOS Styrolution Belgium NV	Belgium	Manufacture of styrene monomer and polymers	Ordinary	100%	100%	(4)
INEOS Styrolution Belgium Services bvba	Belgium	Sales office	Ordinary	100%	100%	(5)
INEOS Styrolution Canada Ltd	Canada	Manufacture of styrene monomer	Common	100%	100%	(6)
INEOS Styrolution (China) Investment Co. Ltd	China	Financing company	Registered capital	100%	100%	(7)
INEOS Styrolution do Brasil Polimeros Ltda.	Brazil	Sales office	Equity /Ordinary	100%	100%	(8)
INEOS Styrolution Hong Kong Company Limited.	Hong Kong	Sales office	Ordinary	100%	100%	(33)
INEOS Styrolution Europe GmbH.	Germany	Distribution company	Ordinary	100%	100%	(2)
INEOS Styrolution France SAS.	France	Manufacture of polymers	Ordinary	100%	100%	(10)
INEOS Styrolution France Services SAS.	France	Sales office	Ordinary	100%	100%	(11)
INEOS Styrolution Group GmbH.	Germany	Holding company	Ordinary	100%	100%	(2)
INEOS Styrolution Iberia S.L.	Spain	Sales office	Ordinary	100%	100%	(12)
INEOS Styrolution Switzerland SA.	Switzerland	Distribution company	Ordinary	100%	100%	(14)
INEOS Styrolution Italia S.r.L.	Italy	Sales office	Ordinary	100%	100%	(15)
INEOS Styrolution Kimyasal Ürünler Ticaret Limited Sirketi.	Turkey	Sales office	Ordinary	100%	100%	(16)
INEOS Styrolution Köln GmbH.	Germany	Manufacture of polymers	Ordinary	100%	100%	(17)
INEOS Styrolution Korea Ltd.	South Korea	Manufacture of polymers	Common	100%	100%	(18)
KR Copolymer Co. Ltd.	South Korea	Manufacture of K-Resin	Ordinary	100%	100%	(19)
INEOS Styrolution Ludwigshafen GmbH..	Germany	Manufacture of polymers	Ordinary	100%	100%	(2)
INEOS Styrolution Mexicana, S.A. de C.V.	Mexico	Manufacture of polymers	Ordinary	100%	100%	(20)
INEOS Styrolution Netherlands B.V.	Netherlands	Sales office	Ordinary	100%	100%	(21)
INEOS Styrolution OOO.	Russia	Sales office	Charter capital	100%	100%	(22)
INEOS Styrolution Poland Sp. z o.o.	Poland	Sales office	Ordinary	100%	100%	(23)
INEOS Styrolution Polymers (Foshan) Co. Ltd.	China	Manufacture of polymers	Registered capital	100%	100%	(24)

12 INVESTMENTS (continued)

12(a) Investments in subsidiary undertakings (continued)

Company	Country of incorporation	Principal activity	Class of shares held	Ownership 2022	Ownership 2021	Registered office reference
INEOS Styrolution Polymers (Ningbo) Co. Ltd.	China	Manufacture of polymers	Registered capital	100%	100%	(25)
INEOS Styrolution Advanced Materials (Ningbo) Pte Ltd.[(c)]	China	Manufacture of ABS (under construction)	Registered capital	50%	100%	(26)
INEOS Styrolution Polymers (Shanghai) Co. Ltd.	China	Sales office	Registered capital	100%	100%	(27)
INEOS Styrolution Schwarzheide GmbH	Germany	Manufacture of polymers	Ordinary	100%	100%	(30)
INEOS Styrolution APAC Pte Ltd.	Singapore	Sales office	Ordinary	100%	100%	(31)
INEOS Styrolution UK Limited.**	UK	Sales office	Ordinary	100%	100%	(1)
INEOS Styrolution US Holding LLC.	USA	Holding company	Member interest	100%	100%	(3)
INEOS Styrolution Verwaltungsgesellschaft mbH.	Germany	Financing company	Ordinary	100%	100%	(2)
INEOS Styrolution (Thailand) Co., Ltd.	Thailand	Manufacture of polymers	Ordinary	100%	100%	(34)
INEOS Styrolution Vietnam Co., Ltd.	Vietnam	Sales office	Charter Capital	100%	100%	(35)
Deutsche Bank Mexico F/1787 Styrolution.	Mexico	Securitisation vehicle	n/a	n/a	n/a	(37)
INEOS Styrolution Receivables Finance Designated Activity Company.	Ireland	Securitisation vehicle	n/a	n/a	n/a	(51)
INEOS Quattro Holdings UK Limited	UK	Holding company	Ordinary	100%	100%	(1)
INEOS Acetyls UK Limited	UK	Production of acetic acid and other acetyls products	Ordinary	100%	100%	(1)
INEOS Acetyls International Limited**	UK	Holding company	Ordinary	100%	100%	(1)
INEOS US Petrochem LLC	USA	Holding company	Ordinary	100%	100%	(3)
INEOS US Chemicals Company	USA	Production of purified terephthalic acid and paraxylene	Common	100%	100%	(3)
INEOS 179 Limited**	UK	Holding company	Ordinary	100%	100%	(1)
INEOS Aromatics and Acetyls Trading (Shanghai) Company Limited	China	Sales office	Registered capital	100%	100%	(29)
INEOS Acetyls Japan KK	Japan	Sales office	Ordinary	100%	100%	(36)
INEOS Acetyls Investments Limited	UK	Holding company	Ordinary	100%	100%	(1)
INEOS Aromatics Asia Limited	Hong Kong	Sales office	Ordinary	100%	100%	(33)
INEOS Acetyls (Malaysia) Sdn Bhd.	Malaysia	Sales office	Ordinary	100%	100%	(68)
INEOS Acetyls (Korea) Limited**	UK	Holding company	Ordinary	100%	100%	(1)
INEOS Acetyls Americas Limited**	UK	Holding company	Ordinary	100%	100%	(1)
INEOS Aromatics Holdings Limited **	UK	Holding company	Ordinary	100%	100%	(1)
INEOS Aromatics Limited	UK	Sales company	Ordinary	100%	100%	(1)
INEOS World-Wide Technical Services Limited**	UK	Licensing services	Ordinary	100%	100%	(1)
INEOS Aromatics Holding Company	USA	Holding company	Common	100%	100%	(3)

12 INVESTMENTS (continued)

12(a) Investments in subsidiary undertakings (continued)

Company	Country of incorporation	Principal activity	Class of shares held	Ownership 2022	Ownership 2021	Registered office reference
INEOS Zhuhai Chemical Company Limited[(d)]	China	Production of purified terephthalic acid and paraxylene	Member interest	91.90%	91.90%	(66)
INEOS Aromatics Indonesia Holdings Ltd	USA	Holding company	Common	100%	100%	(64)
INEOS Aromatics Belgium NV	Belgium	Production of purified terephthalic acid and paraxylene	Ordinary	100%	100%	(71)
INEOS Aromatics Belgium Holdings LLC	USA	Holding company	Common	100%	100%	(3)
PT INEOS Aromatics Indonesia	Indonesia	Production of purified terephthalic acid and paraxylene	Ordinary	100%	100%	(72)
PT INEOS Aromatics Trading Indonesia[(e)]	Indonesia	Trading company	Ordinary	100%	100%	(76)
INOVYN Limited[(f)]	UK	Holding company	Ordinary	100%	100%	(38)
INOVYN Holdings Limited[(a)]	UK	Holding company	Ordinary	100%	100%	(38)
INOVYN Finance Limited	UK	Holding company	Ordinary	100%	100%	(38)
INOVYN Group Treasury Limited	UK	Holding company	Ordinary	100%	100%	(38)
INOVYN Europe Limited	UK	Holding company	Ordinary	100%	100%	(38)
INOVYN Norge AS	Norway	Manufacture of chemicals and PVC	Ordinary	100%	100%	(39)
INOVYN Sverige AB	Sweden	Manufacture of chemicals and PVC	Ordinary	100%	100%	(40)
INEOS ChlorVinyls Holdings BV	Netherlands	Holding company	Ordinary	100%	100%	(41)
INOVYN Newton Aycliffe Limited	UK	Non-trading	Ordinary	100%	100%	(38)
INEOS Newton Aycliffe Trustees Limited	UK	Pension trustee	Ordinary	100%	100%	(38)
INOVYN Services Limited	UK	Service company	Ordinary	100%	100%	(38)
INOVYN Enterprises Limited	UK	Extraction and supply of brine and water	Ordinary	100%	100%	(38)
INOVYN ChlorVinyls Holdings Limited	UK	Holding company	Ordinary	100%	100%	(38)
INOVYN Newco 2 Limited	UK	Holding company	Ordinary	100%	100%	(38)
INOVYN ChlorVinyls Limited	UK	Manufacture of chemicals and PVC	Ordinary	100%	100%	(38)
INEOS Enterprises Group Limited	UK	Manufacture of salt and sulphur chemicals	Ordinary	100%	100%	(38)
Keuper Gas Storage Limited	UK	Gas storage	Ordinary	100%	100%	(38)
INEOS Chlor Atlantik GmbH	Germany	Non-trading	Ordinary	100%	100%	(42)
INOVYN Americas Inc	USA	Purchase and resale of chemicals	Ordinary	100%	100%	(43)
INOVYN Sales International Limited[(g)]	UK	Non-trading	Ordinary	100%	100%	(38)
INEOS Chlor Trustees Limited	UK	Pension trustee	Ordinary	100%	100%	(38)
INEOS Vinyls UK Ltd[(a)]	UK	Non-trading	Ordinary	100%	100%	(38)
INEOS Vinyls GmbH & Co KG	Germany	Holding company	Ordinary	100%	100%	(42)

12 INVESTMENTS (continued)

12(a) Investments in subsidiary undertakings (continued)

Company	Country of incorporation	Principal activity	Class of shares held	Ownership 2022	Ownership 2021	Registered office reference
INOVYN Schkopau GmbH	Germany	Non trading	Ordinary	100%	100%	(42)
INOVYN Sales GmbH	Germany	Non trading	Ordinary	100%	100%	(42)
EVC Pension Trustees Limited	UK	Pension trustee	Ordinary	100%	100%	(38)
INOVYN Energy Limited	UK	Holding company	Ordinary	100%	100%	(38)
Kerling Newco 1 Limited	UK	Holding company	Ordinary	100%	100%	(38)
Kerling Newco 2 Limited	UK	Holding company	Ordinary	100%	100%	(38)
INOVYN Deutschland GmbH	Germany	Manufacture of chemicals and PVC	Ordinary	100%	100%	(42)
INOVYN Espana S.L.	Spain	Manufacture of chemicals and PVC	Ordinary	100%	100%	(44)
INOVYN Osterreich GmbH[(a)].	Austria	Sales office	Ordinary	100%	100%	(45)
INOVYN Belgium SA.	Belgium	Manufacture of chemicals	Ordinary	100%	100%	(46)
INOVYN Olefines France SAS.	France	Operation of ethylene cracker	Ordinary	100%	100%	(47)
INOVYN Portugal Lda	Portugal	Sales office	Ordinary	100%	100%	(48)
INOVYN Trade Services SA	Belgium	Purchase and resale of chemicals	Ordinary	100%	100%	(46)
INOVYN Manufacturing Belgium SA	Belgium	Manufacture of chemicals and PVC	Ordinary	100%	100%	(46)
INOVYN France SAS	France	Manufacture of chlorine products	Ordinary	100%	100%	(47)
INOVYN Italia S.p.A.	Italy	Commercial services	Ordinary	100%	100%	(49)
INOVYN Produzione Italia S.p.A	Italy	Manufacture of chemicals	Ordinary	100%	100%	(50)
INOVYN Quimica Espana S.L.	Spain	Waste treatment	Ordinary	100%	100%	(44)
Vinyloop Ferrara S.p.A[(a)]	Italy	PVC Recycling	Ordinary	100%	100%	(49)
TTE Training Limited.	UK	Training company	Limited by Guarantee	100%	100%	(52)
TTE Apprenticeship Training Agency Limited.	UK	Apprenticeship company	Limited by Guarantee	100%	100%	(52)
INEOS Norway Finance Ireland Limited	Ireland	Securitisation vehicle	n/a	n/a	n/a	(51)

Shares held directly by INEOS Quattro Holdings Limited. All other subsidiaries listed are held indirectly.
(a) In the process of being liquidated.
(b) On 22 April 2022, the Group sold part of its 75% share in INEOS Styrolution India Limited. This resulted in a reduction of the ownership from 75.0% to 61.2%. On 17 November 2022, the Group sold its remaining shareholding interest of 61.2% to Shiva Performance Materials Pte Ltd. Profit attributable to the non-controlling interest is €8.4 million (2021: profit of €10.7 million). Accumulated non-controlling interests are €nil (2021: €19.6 million).
(c) Effective on 28 December 2022, the Group sold 50% of its 100% share in INEOS Styrolution Sinopec Advanced Materials (Ningbo) Pte Ltd. to China Petroleum & Chemical Corporation establishing a joint venture between the Group and Sinopec, each holding 50% share in the registered capital of the investee. See also note 12(b).
(d) Portion of ownership interests held by non-controlling interests is 8.1%. Loss attributable to the non-controlling interest is €1.4 million (2021: €3.1 million). Accumulated non-controlling interests are €43.0 million (2021: €46.6 million).
(e) Company incorporated on 11 August 2022.
(f) Portion of ownership interests held by non-controlling interests is 5.1%. Profit attributable to the non-controlling interest is €37.6 million (2021: €22.7 million). Accumulated non-controlling interests are €23.1 million (2021: €5.7 million)
(g) Dissolved in January 2023 following liquidation.
(h) Effective from 1 January 2022, INEOS Styrolution Holding GmbH was merged into INEOS Styrolution Investment GmbH.
** Entities claiming exemption from audit under section 479A Companies Act 2006.

12 INVESTMENTS (continued)

12(b) Investments in equity-accounted investees, joint operations and other investments

Details of the Group's investments in equity-accounted investees, joint operations and other investments:

Investment	Country of registration or incorporation	Principal activity	Class/ percentage of shares held	Registered office reference
Associated undertakings:				
INEOS Runcorn (TPS) Holdings Limited	UK	Thermal Power Station operator	Ordinary/ 60% [1]	(38)
Joint ventures:				
INEOS PCG Acetyls Sdn. Bhd.	Malaysia	Production of acetic acid and other acetyls products	Ordinary/ 70%	(67)
Yangtze River Acetyls Co. Ltd	China	Production of acetic acid and other acetyls products	Member interest/ 51%	(69)
LOTTE INEOS Chemical Co. Ltd	Korea	Production of acetic acid and other acetyls products	Ordinary/ 50.94%	(70)
Formosa INEOS Chemicals Corp	Taiwan	Production of acetic acid and other acetyls products	Common/50%	(73)
INEOS YPC Acetyls Company (Nanjing) Ltd	China	Production of acetic acid and other acetyls products	Member interest/ 50%	(74)
Atlas Methanol Company Unlimited	Trinidad	Methanol production	Ordinary/36.9%	(75)
China American Petrochemical Company Ltd	Taiwan	Production of purified terephthalic acid	Ordinary/61.36%	(65)
INEOS Styrolution Sinopec Advanced Materials (Ningbo) Ltd.[2] (prev: INEOS Styrolution Advanced Materials (Ningbo) Pte Ltd)	China	Manufacturing of ABS	Register capital/ 50%	(26)
Joint operations:				
Runcorn MCP Limited	UK	Cell room operator	Ordinary/ 50%	(38)
GIE Cancel-Bresse	France	Brine solution mining services	Ordinary/ 50%	(59)
Other investments:				
Akra Polyester SA de CV	Mexico	Manufacture of polyester filaments and polymers	Ordinary/6.65%	(28)
Tereftaltos Mexicanos SA de CV	Mexico	Production of purified terephthalic acid	Ordinary B/8.55%	(32)
IndustriEI AS	Norway	Energy consultancy	Ordinary/ 12.5%	(53)
Sociedad Española de Materiales Plasticos SEMAP S.A	Spain	Plastic waste management	Ordinary/8%	(54)
Societe Intercommunale D'Amenagement et d'Equipement Economique	Belgium	Economic development of province of Namur	Ordinary/0.17%	(55)
BKV GmbH	Germany	Plastic recycling association	Ordinary/2.0%	(56)
Industrins Räddningstjänst i Stenungsund AB	Sweden	Fire and rescue service	Ordinary/25.0%	(57)
API PVC - u. Umweltberatung GesmbH	Austria	PVC technology solutions	Ordinary/73.2%	(58)
Hållbar Kemi i Stenungsund	Sweden	Sustainable production association	Ordinary/20.0%	(60)
Energy For Growth Societa' Consortile A Responsabilita Limitata	Italy	Energy consortium	Ordinary/7.3%	(61)
Power to Methanol Antwerp B.V.	Belgium	Sustainable methanol production consortium	Ordinary/14.3%	(62)
Consorzio Polo Tecnologico Magona	Italy	Decarbonisation consortium	Ordinary/6.8%	(63)

(1) The Group owns shares entitling it to 60% of the voting rights but only 25% of the economic benefits.

(2) See footnote (c) to note 12(a).

12 INVESTMENTS (continued)

12(b) Investments in equity-accounted investees, joint operations and other investments

None of the above other investments are held directly by INEOS Quattro Holdings Limited.

Investments in associated undertakings, joint ventures and other investments

	Joint ventures	Associated undertakings	Equity-accounted investees	Other investments	Total
			€m		
At 1 January 2021	1,148.4	14.9	1,163.3	17.3	1,180.6
Share of retained earnings	462.5	(0.5)	462.0	-	462.0
Additions	-	-	-	0.7	0.7
Dividends received	(188.7)	-	(188.7)	-	(188.7)
Impairments	-	-	-	(1.0)	(1.0)
Effect of movements in exchange rates	94.4	(0.1)	94.3	1.1	95.4
At 31 December 2021	**1,516.6**	**14.3**	**1,530.9**	**18.1**	**1,549.0**
Share of retained earnings	232.0	1.6	233.6	-	233.6
Additions (see Note 3)	443.1	-	443.1	-	443.1
Reclassification	(33.8)	-	(33.8)	(3.2)	(37.0)
Dividends received	(401.4)	-	(401.4)	-	(401.4)
Loss on disposal of equity accounted investments	(20.0)	-	(20.0)	(6.6)	(26.6)
Effect of movements in exchange rates	47.9	0.3	48.2	1.5	49.7
At 31 December 2022	**1,784.4**	**16.2**	**1,800.6**	**9.8**	**1,810.4**

Addition

In December 2022, the Group's subsidiary, INEOS Styrolution APAC Pte. Limited, entered into an agreement to transfer 50% of its shareholding in INEOS Styrolution Advances Materials (Ningbo) Pte Limited to China Petroleum & Chemical Corporation. As a result, the Group loss control but retained joint control. The retained 50% interest in the business was fair valued at the date of the transaction (see note 3).

Reclassification

In November 2022, the Group made a non-cash exchange for its current interest in Tricoya UK Limited (30% interest) and in Tricoya Technologies Limited (9% interest) for shares in Accsys Technologies Plc. This share exchange resulted in an impairment of €26.6 million and a reclassification from joint ventures and other investments of respectively €3 million and €3.2 million to other financial assets (see note 13).

The Group provided an ABS technology license service to the newly acquired INEOS Styrolution Sinopec Advanced Materials (Ningbo) Limited joint-venture. A reclassification of €30.8 million was made to eliminate the Group's share of royalty revenue recognised in the current year.

12 INVESTMENTS (continued)

12(b) Investments in equity-accounted investees, joint operations and other investments

Summarised balance sheet and income statement

Set out below is the summarised financial information of the Group's material joint ventures as at 31 December 2021 and 2022.

	2022								
	Atlas Methanol Company Unlimited	LOTTE INEOS Chemical Co. Ltd	INEOS PCG Acetyls Sdn. Bhd.	Formosa INEOS Chemicals Corp	Yangtze River Acetyls Co. Ltd	INEOS YPC Acetyls Company (Nanjing) Ltd	Tricoya UK Limited[(a)]	INEOS Styrolution Sinopec Advanced Materials (Ningbo) Ltd.	Total
	€m								
Current assets	64.2	199.1	68.5	85.3	45.4	32.7	-	78.3	573.5
Non-current assets	112.8	451.0	154.8	196.3	120.7	108.6	-	646.1	1,790.3
Current liabilities	(15.1)	(90.1)	(13.3)	(11.5)	(4.6)	(10.5)	-	(76.5)	(221.6)
Non-current liabilities	(50.8)	(39.4)	(29.3)	(2.3)	(0.4)	(0.1)	-	(235.5)	(357.8)
Net assets	**111.1**	**520.6**	**180.7**	**267.8**	**161.1**	**130.7**	**-**	**412.4**	**1,784.4**
Other operating revenue	185.4	1,190.6	159.6	115.9	139.4	61.2	-	-	1,852.1
Operating expenses	(116.3)	(995.8)	(142.2)	(101.5)	(116.8)	(59.4)	(0.2)	-	(1,532.2)
Interest expenses	(2.7)	1.3	(1.0)	(0.0)	0.9	(0.4)	-	-	(1.9)
Income tax expenses	(23.2)	(54.4)	(5.6)	(2.8)	0.6	(0.6)	-	-	(86.0)
Total profit for the year	**43.2**	**141.7**	**10.8**	**11.6**	**24.1**	**0.8**	**(0.2)**	**-**	**232.0**
Dividend received	**53.2**	**161.6**	**34.7**	**39.0**	**58.1**	**54.8**	**-**	**-**	**401.4**

(a) Effective on November 2022, the Group exchanged its share in in Tricoya UK Limited (30% interest) and in Tricoya Technologies Limited (9% interest) for shares in Accsys Technologies Plc.. See also note 12(b) - *Reclassification*.

	2021							
	Atlas Methanol Company Unlimited	LOTTE INEOS Chemical Co. Ltd	INEOS PCG Acetyls Sdn. Bhd.	Formosa INEOS Chemicals Corp	Yangtze River Acetyls Co. Ltd	INEOS YPC Acetyls Company (Nanjing) Ltd	Tricoya UK Limited	Total
	€m							
Current assets	75.3	240.0	97.0	103.1	94.7	82.1	3.1	695.3
Non-current assets	115.3	448.1	157.6	208.9	111.0	109.6	25.6	1,176.1
Current liabilities	(30.9)	(136.2)	(32.3)	(23.7)	(9.8)	(9.8)	(1.4)	(244.1)
Non-current liabilities	(44.8)	(30.5)	(31.1)	(0.2)	(0.4)	(0.1)	(3.6)	(110.7)
Net assets	**114.9**	**521.4**	**191.2**	**288.1**	**195.5**	**181.8**	**23.7**	**1,516.6**
Dividend received	**36.2**	**69.2**	**73.5**	**2.5**	**4.9**	**2.4**	**-**	**188.7**

12 INVESTMENTS (continued)

12(c) Registered office addresses of investments

The registered office addresses of the investments disclosed in this note are:

Reference	Registered office address
(1)	Hawkslease, Chapel Lane, Lyndhurst, Hampshire, SO43 7FG, United Kingdom
(2)	Mainzer Landstrasse 50, 60325 Frankfurt, Germany
(3)	Corporation Trust Center,1209 Orange Street, Wilmington DE 19801, Delaware, USA
(4)	Haven 725, Scheldelaan 600, 2040 Antwerp, Belgium
(5)	2070 Zwijndrecht, Nieuwe Weg 1, 1053 Haven, Mechelen, Belgium
(6)	872 Tashmoo Avenue, Sarnia ON N7T 8A3 Ontario, Canada
(7)	Room 2502, 567 Langao Road, Putuo District, Shanghai, China
(8)	Rua Quintana 887 3° andar, conjuntos 33 e 34, Ciudade Moncoes, São Paulo 04569-011
(9)	Chertsey Road, Sunbury on Thames, Middlesex, TW16 7BP, United Kingdom
(10)	Rue Albert Duplat, F-62410 Wingles. France
(11)	95 rue la Boétie, F-75008 Paris, France
(12)	Ronda General Mitre 28-30, 08017 Barcelona, Spain
(14)	Avenue des Uttins 3, CH-1180 Rolle, Switzerland
(15)	Via Caldera 21, 20153 Milano Cesano Maderno, Italy
(16)	Büyükdere Cad. Meydan sok., Spring Giz Plaza K. 13 N.11, Maslak Sariyer, Istanbul, Turkey
(17)	Alte Strasse 201, 50769 Cologne, Germany
(18)	Sanggae-ro 143 (Sanggae-dong), Nam-gu, Ulsan, South Korea
(19)	14th Floor, 92 Tongil-ro (Soonhwa-dong) Jung-gu, Seoul, 04517, Korea
(20)	Avenida Insurgentes Sur No. 859, Piso 11, Oficina 1102, Colonia Nápoles, 03810, Mexico City, Mexico
(21)	Strawinskylaan 411, NL-1077 XX Amsterdam, The Netherlands
(22)	Bldg. 3, 18 Pyatnitskaya St., 115035 Moscow, Russian Federation
(23)	ul. Wołoska 9, 02-583 Warszawa, Poland
(24)	No. 61, Jinben Industry Avenue, Xinan Sub-district, Sanshui District, Foshan, Guangdong Province, China
(25)	No.2388, Minghai North Road, Ningbo Petrochemical Economy & Technology Development Zone, Ningbo, Zhejiang, China
(26)	Building No. 3 Unit 1-10, 266 Beihai Road, Ningbo Petrochemical Zone, Zhenhai District, Ningbo, China
(27)	Central Towers, Suite 2501&2503, 567 Langao Road, 200333 Shanghai, China
(28)	Avenida Adolfo Ruiz Cortines y Priv. Roble S/N, Col. San Pedro Lozano, Monterrey, Nuevo León, 64299, Mexico
(29)	17F, Block B, Central Towers,567 Langao Road, Putuo District,Shanghai, P.R.China, 200333
(30)	Schipkauer Strasse 1, 01987 Schwarzheide, Germany
(31)	111 Somerset Road, #14-16 to 21 TripleOne Somerset, Singapore 238164, Singapore
(32)	Av. Ricardo Margáin Zozaya 444, Torre Equus IZA Sur, Colonia Valle del Campestre, San Pedro Garza García, Nuevo León, 66265, Mexico
(33)	5/F, Manulife Place, 348 Kwun Tong Road, Kowloon, Hong Kong
(34)	No. 4/2, I-8 Road, T. Map Ta Phut, A Muang, 2115 Rayong, Thailand
(35)	16th floor, Daeha Business Centre, 360 Kim Ma Str., Ngoc Khanh Ward, Ba Dinh Dist, Hanoi, Vietnam
(36)	1-25-1 Nishi-Shinjuku, Shinjuku-ku, (35F, Shinjyuku Center Building), Tokyo 1630635, Japan
(37)	Torre Virreyes, Pedregal 24, Piso 20, Colonia Molino del Rey, 11040, Mexico City, Mexico
(38)	Bankes Lane Office, Bankes Lane, Runcorn, Cheshire, WA7 4JE, United Kingdom
(39)	Rafnes Industriomrade, 3966 Stathelle, Norway
(40)	444-83 Stenungsund, Sweden
(41)	Luna Arena, Herikerbergweg 238, Amsterdam, The Netherlands, 1101 CM
(42)	Ludwigstrasse 12, 47495 Rheinberg, Germany
(43)	2036 Foulk Rd, Suite 204, Wilmington, Delaware 19801, USA
(44)	Calle Marie Curie 1-3-5, 08760 Martorell, Barcelona, Spain
(45)	Schottengasse 1, 4. Stock, 1010 Wien, Austria
(46)	Avenue des Olympiades 20, 1140 Brussels, Belgium
(47)	2 Avenue de la République, 39500 Tavaux, France
(48)	Rua do Centro Cultural nº 5 – R/C, sala 8, 1700-106 Lisboa, Portugal
(49)	Via Marconi 73, 44122 Ferrara (FE), Italy
(50)	Rosignano Marittimo (LI), Via Piave 6 CAP 57016, Italy
(51)	Kilmore House, Park Lane, Spencer Dock, Dublin 1, Ireland
(52)	New Horizons House, New Bridge Road, Ellesmere Port, Cheshire, CH65 4LT, United Kingdom
(53)	Postboks 1367 – Vika, 0114 Oslo, Norway
(54)	Calle Principe de Vergara 204 – Primero C – 28002, Madrid, Spain
(55)	Rue de la Religion, 10, 1400 Nivelles, Belgium
(56)	Mainzer Landstraße 55, 60329 Frankfurt am Main, Germany

12 INVESTMENTS (continued)

12(c) Registered office addresses of investments

Reference	Registered office address
(57)	Verkstadsvagen 11, 44431 Stenungsund, Sweden
(58)	Paniglgasse 24/I/19°, A-1040 Wien, Austria
(59)	12 Rue Raoul Nordling CS 7001, 92270 Bois Colombes, France
(60)	Fregatten 3, 444-30 Stenungsund, Sweden
(61)	Via Giovanni Da Procida, 11, 20149, Milan, Italy
(62)	Scheldelaan 480, 2040 Antwerpen, Belgium
(63)	Via Magona, 57023 Cecina, Italy
(64)	2711 Centerville Road,Suite 400, Wilmington DE 19808, United States
(65)	6th Floor, No. 413 Section 2 Ti-Ding Blvd., Neihu, Taipei, 11493,Taiwan
(66)	Da Ping Harbour, Lin Gang Industrial Zone, Zhuhai City, Guangdong Province, China
(67)	12th Floor, Menara Symphony No. 5, Jalan Prof Khoo Kay Kim, Seksyen 13, 46200 Petaling Jaya, Selangor Darul Ehsan, Malaysia
(68)	12th Floor, Menara Symphony No. 5, Jalan Prof. Khoo Kay Kim, Seksyen 13, 46200 Petaling Jaya, Selangor, Malaysia
(69)	97 Weijiang Road (in the Petrochemical Park), Changshou District, Chongqing, China
(70)	6 3-15 Sanggae-ro, Cheongnyang-myeon, Uljugun, Ulsan, 44987, Korea
(71)	Amocolaan 2 2440 Geel, Belgium
(72)	20th Floor Summitmas II Jl., Jend. Sudirman Kav. 61 – 62, Jakarta, Selatan, Indonesia
(73)	No. 1-1Formosa Industrial Comples, Mailiao, Yunlin Hsien, Taiwan
(74)	9# Huo Ju Road, Liu He District, Nanjing, Jiangsu Province, China
(75)	Maracaibo Drive, Point Lisas Industrial Estate, Point Lisas, Trinidad and Tobago
(76)	South Quarter Building Tower C, GJl. R.A. Kartini Kav. 8, Cilandak Barat, Jakarta, Indonesia

13 OTHER FINANCIAL ASSETS

	2022	2021
	€m	
Non-current		
Other receivables	**2.2**	**2.1**

	2022	2021
	€m	
Current		
Financial assets designated as fair value through OCI (note 25)	5.5	-
Deferred consideration (note 3)	239.0	-
	244.5	**-**

The shares acquired by the Group in November 2022 in Accsys Technologies Plc are classified as financial assets designated as fair value through OCI as the Group intends to participate in the development of the Company and to retain these shares in the long-term.

The deferred considerations are related to future instalments to be received from Sinopec on the achievement of certain milestones, which are expected to be fulfilled by December 2023.

14 DEFERRED TAX ASSETS AND LIABILITIES

Recognised deferred tax assets and liabilities

Deferred tax assets and liabilities are attributable to the following:

	2022	2021	2022	2021
	Assets		Liabilities	
	€m			
Property, plant and equipment	58.3	58.5	(254.8)	(229.3)
Investments	-	-	(42.9)	(41.2)
Intangible assets	-	0.3	(135.8)	(158.0)
Employee benefits	38.5	51.3	(6.1)	(9.0)
Tax value of loss carry-forwards	69.3	83.8	-	-
Other	105.3	77.0	(81.9)	(35.4)
Set off of tax	(121.2)	(68.0)	121.2	68.0
Net tax assets/(liabilities)	**150.2**	**202.9**	**(400.3)**	**(404.9)**

Movement in deferred tax during the year

2022	1 January	Recognised in income statement	Disposal	Recognised in equity – translation exchange	Recognised in equity – actuarial	31 December
	€m					
Property, plant and equipment	(170.8)	(23.6)	4.8	(6.8)	-	(196.4)
Investments	(41.2)	0.8	-	(2.5)	-	(42.9)
Intangible assets	(157.7)	15.1	8.6	(1.8)	-	(135.8)
Employee benefits	42.3	(17.2)	-	0.6	6.8	32.5
Tax value of loss carry-forwards	83.8	(11.9)	(2.2)	(0.4)	-	69.3
Other	41.6	(19.9)	(1.6)	3.1	-	23.2
	(202.0)	**(56.7)**	**9.6**	**(7.8)**	**6.8**	**(250.1)**

2021	1 January	Recognised in income statement	Reclassification	Recognised in equity – translation exchange	Recognised in equity – actuarial	31 December
	€m					
Property, plant and equipment	(135.0)	(1.1)	(27.4)	(7.3)	-	(170.8)
Investments	(38.0)	-	-	(3.2)	-	(41.2)
Intangible assets	(174.7)	18.3	1.0	(2.3)	-	(157.7)
Employee benefits	66.7	(12.8)	(2.0)	-	(9.6)	42.3
Tax value of loss carry-forwards	72.1	23.4	(7.1)	(4.6)	-	83.8
Other	(3.5)	8.5	35.5	1.1	-	41.6
	(212.4)	**36.3**	**-**	**(16.3)**	**(9.6)**	**(202.0)**

In assessing the Group's ability to realise deferred tax assets, management considers whether it is probable that some portion of all of the deferred tax assets will not be realised. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income and tax strategies in making this assessment.

In order to fully realise the deferred tax asset, the Group will need to generate future taxable income in the countries where the net operating losses were incurred. Based upon the level of historical taxable income and projections for future taxable income over the periods in which the deferred tax assets are deductible, management believes that the Group will realise the aforementioned benefits.

The Group did not recognise gross deductible temporary differences of €376.6 million (2021: €275.4 million), the majority of which relates to tax losses.

15 INVENTORIES

	2022	2021
	€m	
Raw materials and consumables	601.8	562.8
Work in progress	165.6	213.7
Finished goods	706.2	772.4
	1,473.6	**1,548.9**

Raw materials, consumables and changes in finished goods and work in progress recognised as cost of sales in the year amounted to €15,515.0 million (2021: €12,183.0 million). The write-down of inventories to net realisable value amounted to €9.9 million (2021: €20.8 million). The reversal of previous write-downs of inventories to net realisable value amounted to €2.6 million (2021: €4.3 million).

16 TRADE AND OTHER RECEIVABLES

	2022	2021
	€m	
Current		
Trade receivables	1,383.1	1,788.0
Amounts owed by related parties and associated undertakings	660.2	93.6
Other receivables	277.6	407.3
Prepayments and accrued income	40.0	89.0
	2,360.9	**2,377.9**
Non-current		
Amounts owed by related parties and associated undertakings	92.0	30.8
Other receivables	59.3	20.2
Prepayments and accrued income	1.4	1.5
	152.7	**52.5**

An inter-company loan of €500.0 million with the immediate parent company of the Group is included within the current amounts owed by related parties and associated undertakings. This inter-company loan is unsecured, attracts interest at commercial rate and had a maturity of 2 December 2023. Subsequent to the year-end, this loan was fully settled through a dividend distribution approved on 23 January 2023 (see note 32). Loans amounted to a total of €63.1 million were granted by the Group to INEOS Styrolution Sinopec Advanced Materials (Ningbo) Ltd. These loans are unsecured, attract interest at commercial rate and mature in 2032.

Credit quality of financial assets and impairment losses

The ageing of trade receivables at the end of the reporting period and the expected credit loss rate (ECLR) was:

	2022			2021		
	Gross	Impairment	ECLR	Gross	Impairment	ECLR
	€m	€m	%	€m	€m	%
Not past due	1,171.2	(0.2)	0.0%	1,699.2	(0.3)	-
Past due 0 – 30 days	205.3	(0.3)	0.1%	81.4	(0.2)	0.2%
Past due 31 – 90 days	2.2	-	0.0%	8.0	(0.1)	1.3%
Past due more than 90 days	13.1	(8.2)	62.6%	13.6	(13.6)	100.0%
	1,391.8	**(8.7)**	**0.6%**	**1,802.2**	**(14.2)**	**0.8%**

There were no allowances made against amounts owed by related parties and other receivables during the year (2021: €nil).

The amounts receivable not yet due after impairment losses as of the end of the reporting period are deemed to be collectible on the basis of established credit management processes such as regular analyses of the credit worthiness of customers and external credit checks where appropriate for new customers (see note 25(c)). At 31 December 2022 and 2021 there were no significant trade, related party or other receivable balances classified as “not past due” that were subsequently impaired.

16 TRADE AND OTHER RECEIVABLES (continued)

Due to the global activities and diversified customer structure of the Group, the management considers that there is no significant concentration of credit risk (2021: nil).

During 2022 and 2021 there were no significant trade balances that were subject to material renegotiation of terms.

Trade receivable balances totalling €737.5 million (2021: €552.5 million) have been pledged as security against amounts drawn under the Securitisation Facility, totalling €nil (2021: €nil). In accordance with IFRS 9 *"Financial Instruments"* the trade receivable balances pledged as security do not qualify for derecognition and are included within the trade receivable balances above.

The movement in the allowance for impairment in respect of trade receivables (as per this note) during the year was as follows:

	2022	2021
	€m	
Balance at 1 January	(14.2)	(14.5)
Disposals	0.6	-
Impairment loss recognised	(0.1)	-
Utilised	5.2	0.7
Effects of movement in foreign exchange	(0.2)	(0.4)
Balance 31 December	**(8.7)**	**(14.2)**

The allowance account for trade receivables is used to record any impairment losses unless the Group is satisfied that no recovery of the amount owing is probable; at that point the amounts considered irrecoverable are written off against the trade receivables directly.

The Group applies the forward-looking 'expected credit loss' (ECL) model in line with IFRS 9 in assessing the recoverability of trade receivables. The ECL is calculated considering past experiences and management's estimate of future developments. Management expects no significant change in the future market situation. Consequently, the future credit losses in the ECL model are in the same range as the credit losses experienced in the past years. This is regarded as the future expectation of the inherent credit risk of the not impaired trade and other receivables outstanding. The Group reviews the assumptions of the ECL model on a yearly basis.

Credit risk of trade receivables

	2022	2021
	€m	
Low	1,306.4	1,692.8
Medium	72.3	78.0
High	13.1	31.4
Impairment allowance	(8.7)	(14.2)
	1,383.1	**1,788.0**

The credit risk grade is based on the analysis on both the quantitative and qualitative factors as detailed below:

- High: Customers under significant financial difficulty and customers for whom there is an uncertainty of payment based on knowledge of factors like insolvency, dispute. Any receivable more than 180 days past due should also be classified in this category.
- Medium: Any receivable between 90 and 180 days past due should be classified as medium risk unless qualitative factors indicate a higher credit risk.
- Low: Any receivable less than 90 days past due should be classified as low risk unless qualitative factors indicate a higher credit risk.

During the year the Group has not experienced a significant deterioration in the quality of receivable balances due to the current economic conditions.
There were no allowances made against amounts due from other receivables during the year (2021: €nil).
There were no allowances made against amounts due from related parties during the year (2021: €nil).

17 INTEREST-BEARING LOANS AND BORROWINGS

This note provides information about the contractual terms of the Group's interest-bearing loans and borrowings, which are measured at amortised cost. For more information about the Group's exposure to interest rate and foreign currency risk see note 25(e).

	2022	2021
	€m	
Non-current liabilities		
Senior Secured Notes due 2026	1,268.7	1,241.3
Senior Notes due 2026	500.0	500.0
Term Loan B Facilities due 2026	3,328.1	3,238.6
Term Loan A Facilities due 2023	-	60.9
Term Loan A Facilities due 2025	-	185.3
Term Loan B Facilities due 2027	632.5	623.6
Senior Secured Notes due 2027	600.0	600.0
Loan from related party	41.7	39.8
Other loans	0.1	0.2
Gross borrowings	**6,371.1**	**6,489.7**
Less: unamortised finance costs	(34.6)	(53.3)
Net borrowings	**6,336.5**	**6,436.4**
Current liabilities		
Term Loan B Facilities due 2026	18.7	17.7
Term Loan A Facilities due 2023	-	121.8
Term Loan B Facilities due 2027	1.9	1.8
External bank loan	-	9.2
Gross borrowings	**20.6**	**150.5**
Less: unamortised finance costs	(16.1)	(16.6)
Net borrowings	**4.5**	**133.9**

Gross debt and issue costs	**2022**		
	Gross loans and borrowings	**Issue costs**	**Net loans and borrowings**
		€m	
Senior Secured Notes due 2026	1,268.7	(13.2)	1,255.5
Senior Notes due 2026	500.0	-	500.0
Term Loan B Facilities due 2026	3,346.8	(31.2)	3,315.6
Term Loan B Facilities due 2027	634.4	(3.1)	631.3
Senior Secured Notes due 2027	600.0	(3.0)	597.0
Securitisation facilities	-	(0.2)	(0.2)
Loan from related party	41.7	-	41.7
Other loans	0.1	-	0.1
	6,391.7	**(50.7)**	**6,341.0**

17 INTEREST-BEARING LOANS AND BORROWINGS (continued)

Gross debt and issue costs	2021		
	Gross loans and borrowings	Issue costs	Net loans and borrowings
		€m	
Senior Secured Notes due 2026	1,241.3	(17.5)	1,223.8
Senior Notes due 2026	500.0	-	500.0
Term Loan B Facilities due 2026	3,256.3	(39.8)	3,216.5
Term Loan A Facilities due 2023	182.7	(2.8)	179.9
Term Loan A Facilities due 2025	185.3	(1.9)	183.4
Term Loan B Facilities due 2027	625.4	(3.9)	621.5
Senior Secured Notes due 2027	600.0	(3.7)	596.3
Securitisation facilities	-	(0.3)	(0.3)
Loan from related party	39.8	-	39.8
External bank loan	9.2	-	9.2
Other loans	0.2	-	0.2
	6,640.2	**(69.9)**	**6,570.3**

Terms and debt repayment schedule as at 31 December 2022	Currency	Nominal interest rate	Year of maturity
Euro Senior Secured Notes due 2026	€	2.50%	2026
Dollar Senior Secured Notes due 2026	$	3.375%	2026
Senior Notes due 2026	€	3.75%	2026
Dollar Term Loan B Facility due 2026	$	USD LIBOR (floor of 0.5%) + 2.75%	2026
Euro Term Loan B Facility due 2026	€	EURIBOR (floor of 0.0%) + 2.75%	2026
Euro Term Loan B Facility due 2027	€	EURIBOR (floor of 0.5%) + 2.00%	2027
Dollar Term Loan B Facility due 2027	$	USD LIBOR (floor 0.0%) + 2.00%	2027
Senior Secured Notes due 2027	€	2.25%	2027
ABS Plant Facility	RMB	China Loan Prime Rate minus 0.65%	2032
Securitisation facilities	$/€/£	Variable	2024

Senior Secured Notes due 2026

In January 2021 the Group raised €1,206.5 million of Senior Secured Notes maturing on 15 January 2026 and consisting on €800.0 million of Euro Senior Secured Notes and $500 million of Dollar Senior Secured Notes.

The Senior Secured Notes outstanding at 31 December 2022 before issue costs were €1,268.7 million (31 December 2021: €1,241.3 million). The total amounts outstanding on the Euro denominated Secured Notes were €800.0 million (31 December 2021: €800.0 million) and the US dollar denominated Secured Notes were $500.0 million (€468.7 million equivalent) (31 December 2021: €441.3 million).

The Senior Secured Notes are listed on the Euro MTF - Luxembourg stock exchange. The Euro Senior Secured Notes bear interest at a rate of 2½% per annum. The Dollar Senior Secured Notes bear interest at a rate of 3⅜% per annum. Interest on the Euro Senior Secured Notes and the Dollar Senior Secured Notes is payable semi-annually in arrears. The Senior Secured Notes have no repayment until maturity.

The Euro Senior Secured Notes and the Dollar Senior Secured Notes are jointly and severally guaranteed on a senior secured basis by certain of the Group's subsidiaries. The Euro Senior Secured Notes and the Dollar Senior Secured Notes and the related guarantees are secured by first priority liens (subject to certain exceptions) on the same assets that secure the obligations under the Credit Facility Agreements, the Senior Secured Notes due 2027, and certain hedging obligations and cash management arrangements.

17 INTEREST-BEARING LOANS AND BORROWINGS (continued)

The Euro Senior Secured Notes are subject to redemption at any time on or after 15 January 2023, at the option of the Issuer, in whole or in part, at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the twelve-month period beginning on 15 January of the year indicated below:

Year	Euro Senior Secured Notes Redemption Price
2023	101.250%
2024	100.625%
2025 and thereafter	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Dollar Senior Secured Notes are subject to redemption at any time on or after 15 January 2023, at the option of the Issuer, in whole or in part, at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the twelve-month period beginning on 15 January of the year indicated below:

Year	Dollar Senior Secured Notes Redemption Price
2023	101.6875%
2024	100.84375%
2025 and thereafter	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Euro Senior Secured Notes and the Dollar Senior Secured Notes contain a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

The Senior Secured Notes due 2026 are stated net of debt issue costs of €13.2 million (31 December 2021: €17.5 million). These costs are allocated to the profit and loss account over the term of the Senior Secured Notes due 2026.

Senior Notes due 2026

In January 2021 the Group raised €500.0 million of Senior Notes maturing on 15 July 2026. The Senior Notes outstanding at December 31, 2022 were €500.0 million (31 December 2021: €500.0 million).

The Senior Notes are listed on the Euro MTF - Luxembourg stock exchange. The Senior Notes bear interest at a rate of 3¾% per annum. Interest on the Senior Notes is payable semi-annually in arrears. The Senior Notes have no repayment until maturity.

The Senior Notes are jointly and severally guaranteed on a senior subordinated basis by the guarantors (other than the parent, which guarantees the Senior Notes on a senior basis). The Senior Notes and the related guarantees are secured by second-ranking security interests (subject to certain exemptions) over the shares of the capital stock of the Issuer and the loan made by INEOS Quattro Finance 2 Plc to the Issuer of the proceeds of the Senior Notes. These security interests rank behind the security interests granted over those assets in favor of the creditors of certain other indebtedness, including under the Senior Secured Notes due 2027, the Senior Secured Notes due 2026 and the Credit Facility Agreements.

17 INTEREST-BEARING LOANS AND BORROWINGS (continued)

The Senior Notes are subject to redemption at any time on or after 15 January 2023, at the option of the Issuer, in whole or in part, at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the twelve-month period beginning on January 15 of the year indicated below:

Year	Senior Notes Redemption Price
2023	101.875%
2024	100.9375%
2025 and thereafter	100.000%

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Notes contain a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

Term Loan A Facilities due 2023 and 2025, Term Loan B Facilities due 2026

On 31 July 2020, the Group has entered into a Term Loan Agreement (as amended and restated) which consists of:

(i) Term loans maturing in 2023 denominated in US dollar and denominated in euro, in aggregate principal amount of $140.0 million (the "Three-Year Dollar Term Loan A Facility") and €120.0 million (the "Three-Year Euro Term Loan A Facility"), respectively, (together, the "Term Loan A Facilities due 2023").

(ii) Term loans maturing in 2025 denominated in US dollar in an aggregate principal amount of $210.0 million (the "Five Year Dollar Term Loan A Facility"); and

(iii) Term loans maturing in 2026 denominated in US dollar (the "Dollar Term Loan B Facility") and in euro (the "Euro Term Loan B Facility"), in an aggregate principal amount of $2,000.0 million and €1,500.0 million, respectively, (together, the "Term Loan B Facilities due 2026").

The $85.5 million and €75.0 million outstanding principal of the Term Loan A Facilities due 2023 and the $210.0 million outstanding principal of the Term Loan A Facilities due 2025 were repaid on 31 May 2022.

As at 31 December 2022, $1,970.0 million was drawn under the Dollar Term Loan B Facility (€1,846.8 million equivalent); and €1,500.0 million was drawn under the Euro Term Loan B Facility.

The Term Loans that are denominated in dollars bear interest at a rate per annum equal to USD LIBOR divided by 100% minus the USD LIBOR Reserve percentage (subject to a floor of 0.5% per annum) plus 1.75% for the Three-year Dollar Term Loan A, 2.25% for the Five-Year Dollar Term Loan A Facility, and 2.75% for the Dollar Term Loan B Facility. Subsequent to year-end, the Group has initiated the process to transition from LIBOR to SOFR.

The Term Loans that are denominated in euros bear interest at a rate per annum equal to EURIBOR (subject to a floor of 0% per annum) plus 1.75% for the Three-Year Euro Term Loan A Facility, 3.5% for the Five-Year Term Loan A Facility and 2.75% for the Euro Term Loan B Facility.

The obligations under the Term Loan B Facilities are jointly and severally guaranteed on a senior basis by the certain of the Group's subsidiaries.

The Term Loan B Agreement contains a number of limitations on indebtedness, restricted payments, transactions with affiliates, liens and sale of assets.

The Term Loan B Facilities do not contain any financial maintenance covenants.

The Dollar Term Loan B Facility are to be repaid in quarterly instalments beginning on 30 September 2021, in aggregate principal amounts equal to 0.25% of the original aggregate principal amount of the Dollar Term Loan B Facility. The Euro Term Loan B Facility and the balance of the Dollar Term Loan B Facility are payable, subject to certain exemptions, on 15 January 2026.

The Term Loans B facilities due 2026 are stated net of debt issue costs of €31.2 million (31 December 2021: €39.8 million). These costs are allocated to the profit and loss account over the term of the Term Loans.

17 INTEREST-BEARING LOANS AND BORROWINGS (continued)

Term Loan B facilities due 2027

The Group has outstanding borrowings under a credit facilities agreement dated 7 November 2014 (as amended and restated) which consist of euro and US dollar denominated Term loans (referred to as the "Term Loan B Facilities agreement").

On 31 January 2020, the Group successfully completed an amend-and-extend transaction of the existing term loans increasing the principal amount of the Euro Term Loan B borrowings to €450.0 million (the "Euro Term Loan B due 2027") and the Dollar Term Loan B borrowings remained at $202.3 million (the Dollar Term Loan B due 2027") .

As at 31 December 2022, €450.0 million remained drawn under the Euro Term Loan B due 2027 and $196.7 million (€184.4 million equivalent) remained drawn under the Dollar Term Loan B Facility due 2027.

From 31 January 2020, the new Dollar Term Loan B Facility due 2027 bears interest at a rate per annum equal to USD LIBOR divided by 100% minus the USD LIBOR Reserve Percentage (as defined in the Term Loan B Facilities Agreement) (subject to a floor of 0% per annum) plus:

- in the case of new Dollar Term Loan B Facility due 2027 bearing interest at a rate determined by reference to USD LIBOR, 2.00%;
- in the case of new Dollar Term Loan B Facility due 2027 bearing interest at a rate determined by reference to Alternate Base Rate, 1.00%.

Subsequent to year-end, the Group has completed its transition from LIBOR to SOFR. See note 32 for further details.

From 31 January 2020, the new Euro Term Loan B Facility due 2027 bears interest at a rate per annum equal to EURIBOR (subject to a floor of 0.50% per annum) plus 2.00%.

The obligations under the Term Loan B Facilities due 2027 is jointly and severally guaranteed on a senior basis by the certain of the Group's subsidiaries.

The Term Loan B Facilities due 2027 contains a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

The Term Loan B Facilities due 2027 do not contain any financial maintenance covenants.

The new Dollar Term Loan B Facility due 2027 is to be repaid in equal instalments, in aggregate annual amounts equal to 1% of the original principal amount of the new Dollar Term Loan B Facility due 2027. The new Euro Term Loan Facility due 2027 and the balance of the new Dollar Term Loan B Facility due 2027 are payable on January 31, 2027.

The Term Loans B facilities due 2027 are stated net of debt issue costs of €3.1 million (31 December 2021: €3.9 million). These costs are allocated to the profit and loss account over the term of the Term Loans.

Senior Secured Notes due 2027

On 31 January 2020, the Group issued €600.0 million aggregate principal amount 2¼% Senior Secured Notes due 2027 (the "Senior Secured Notes due 2027"). The Senior Secured Notes due 2027 are listed on the Euro MTF - Luxembourg stock exchange and bear interest at 2¼% per annum, payable semi-annually in arrears on 15 January and 15 July of each year, beginning 15 July 2020. Unless previously redeemed as noted below, the Senior Secured Notes due 2027 will be repaid by the Group at their principal amount on 16 January 2027.

The Senior Secured Notes due 2027 outstanding at 31 December 2022 were €600.0 million (31 December 2021: €600.0 million).

The Senior Secured Notes due 2027 are subject to redemption at any time on or after 15 January 2023 in whole or in part, at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the twelve-month period beginning on 15 January of the year indicated below:

Year	Senior Secured Notes due 2027 Redemption Price
2022	101.1250%
2023	100.5625%
2024 and thereafter	100.0000%

17 INTEREST-BEARING LOANS AND BORROWINGS (continued)

In each case, the redemption premium will be in addition to accrued and unpaid interest, if any, to the redemption date (subject to the rights of holders of record on relevant record dates to receive interest due on an interest payment date).

The Senior Secured Notes due 2027 are jointly and severally guaranteed on a senior secured basis by INEOS Styrolution Group GmbH and certain of its subsidiaries. They are secured by first priority liens (subject to certain exceptions) on the same assets that secured the obligations under the Term Loan B Facilities due 2027, the Term Loan Agreement and certain hedging obligations and cash management arrangements.

The Senior Secured Notes due 2027 contain a number of operating and financial covenants including limitations on indebtedness, restricted payments, transactions with affiliates, liens, sale of assets and dividend payments.

The Senior Secured Notes due 2027 are stated net of debt issue costs of €3.0 million (31 December 2021: €3.7 million). These costs are allocated to the profit and loss account over the term of the Notes.

ABS Plant Facility

On 21 January 2022, INEOS Styrolution Advanced Materials (Ningbo) Pte Ltd entered into a new term loan agreement with Bank of China and ICBC to provide RMB 3,300.0 million (€464.3 million equivalent) of financing for the construction of a new 600 kiloton ABS plant in Ningbo, China (the "ABS Plant Facility"). The term loan facility matures in 2032 and has a straight-line semi-annual amortisation over the lifetime commencing after the start of operations. The term loan bears interest at a rate equal to the China Loan Prime Rate minus a rate of 0.65% per annum. As at 31 December 2022, the amount utilised against the facility was RMB 3,035.2 million (€408.2 million equivalent). On 28 December 2022, a subsidiary of the Group completed an equity transfer agreement with China Petroleum & Chemical Corporation relating to the sale and purchase of 50% equity interest in INEOS Styrolution Advanced Materials (Ningbo) Pte Ltd. As a result of this divesture, the obligation of the Group under this term loan facility have been transferred to the newly created joint-venture and derecognised in the Group consolidated financial statements. For further details see Note 3.

Securitization facilities

INEOS Styrolution Group GmbH and certain other Group companies are party to a €600.0 million trade receivables securitization program (the "Styrolution Securitization Program") that matures on 28 June 2024. The facility is secured by pledges over the trade receivables sold into the program. For drawn amounts, interest is charged on the facility at a rate of either EURIBOR or US LIBOR plus 0.95% or short-term commercial paper rates plus a margin of 0.95%. For undrawn amounts, the facility bears interest of 0.5%.

INOVYN Group Treasury Limited and certain other INOVYN business' companies are party to a €240.0 million trade receivables securitization program (the "INOVYN Securitization Program") that matures on 30 June 2024. The facility is secured by pledges over the trade receivables sold into the program. For drawn amounts, interest is charged on the facility at a rate of either EURIBOR, US LIBOR or SONIA plus 0.95% or short-term commercial paper rates plus a margin of 0.95%. For undrawn amounts, the facility bears interest of 0.5%.

The Debt issue costs of €0.2 million (31 December 2021: €0.3 million) were incurred in relation to the Securitizaton facilities. These costs are allocated to the profit and loss account over the term of the facilities.

Other facilities

The Group has several short-term credit facilities with different local banks to fund working capital requirements up to a total aggregate amount of €224.2 million equivalent as of 31 December 2022 (31 December 2021: €194.8 million equivalent) in China, Malaysia, Singapore, South Korea, Thailand, and United Kingdom. The available amount under the working capital facilities at 31 December 2022 amounted to €197.8 million equivalent (31 December 2021: €151.2 million equivalent), with €26.4 million (31 December 2021: €43.6 million) of certain trade finance facilities being utilised in China.

The Group also has letter of credit facilities in China, Malaysia, Indonesia, Mexico, Singapore, South Korea, Thailand, and United Kingdom. As of 31 December 2022, the drawn amount under all letter of credit facilities was €16.0 million equivalent (31 December 2021: €23.1 million equivalent). The letters of credit are generally secured by current assets. The facilities also provide for a limited number of other financial services, such as bank guarantees and foreign exchange hedging lines.

18 LEASE OBLIGATIONS

Analysed as:	2022	2021
	€m	
Current lease liabilities	65.0	72.6
Non-current lease liabilities	224.3	226.6
	289.3	**299.2**

Maturity analysis – contractual undiscounted cash flows:	2022	2021
	€m	
Less than one year	83.6	82.3
Between one and five years	150.6	144.8
More than five years	156.1	143.5
Total undiscounted lease liabilities at 31 December	**390.3**	**370.6**

Amounts recognised in the statement of cash flows:	2022	2021
	€m	
Lease capital payments	82.8	95.8
Lease interest payments	11.8	11.7
Short-term leases	6.0	5.4
Leases of low value assets	0.6	2.1
Total cash outflow for leases	**101.2**	**115.0**

The Group has entered into a number of significant lease arrangements relating to off-site storage capacity, rail cars, land and buildings, and air separation plants used for the generation of industrial gases.

19 TRADE AND OTHER PAYABLES

	2022	2021
	€m	
Current		
Trade payables	1,390.8	1,737.0
Amounts owed to related parties	239.3	428.8
Accruals	468.7	522.8
Deferred income	7.1	7.4
Other payables	195.1	282.5
	2,301.0	**2,978.5**
Non-current		
Accruals	31.2	33.6
Deferred income	104.5	112.1
Other payables	6.8	1.2
	142.5	**146.9**

The Group's exposure to currency and liquidity risk related to trade and other payables is disclosed in note 25.

20 EMPLOYEE BENEFITS

The Group operates a number of pension and post-retirement medical plans throughout the world, devised in accordance with local conditions and practices. The plans are generally of the defined benefit type and those that are funded are done so by payments to separately administered funds or insurance companies. The principal funded plans are in Belgium, Canada, France, Germany, India, South Korea, Mexico, Switzerland, USA, Norway, Austria, Spain and the United Kingdom.

The Group also operates a number of unfunded defined benefit pension schemes in the Indonesia, Canada, South Korea, Thailand, USA, Germany and Italy.

20 EMPLOYEE BENEFITS (continued)

The most recent full valuations of the significant defined benefit plans were carried out as follows:

Plan	Country	Valuation date
All Plans	Belgium	01 January 2023
All Plans	Canada	31 December 2020
All Plans	France	31 December 2022
All Plans	Germany	31 December 2022
All Plans	India	N/A
All Plans	South Korea	31 December 2022
All Plans	Mexico	31 December 2022
All Plans	Switzerland	31 December 2022
All Plans	Thailand	31 December 2020
All Plans	USA	01 January 2022
All Plans	Indonesia	01 January 2023
All Plans	United Kingdom	04 May 2022
All Plans	Norway	31 December 2022
All Plans	Italy	31 December 2020
All Plans	Spain	31 December 2022
All Plans	Austria	31 December 2022

Where the most recent full valuations were carried out prior to the balance sheet date, these have been updated to 31 December 2022 by independent qualified actuaries.

The Group’s pension schemes have been disclosed on a geographical basis as those schemes in Europe, United Kingdom, North America and Rest of the World.

The European pension arrangements are a mix of final salary, career average, unit benefit and cash balance plans in nature, and the majority are closed to new entrants. The majority of the plans are funded via insurance policies and there are also a number of unfunded German and Italian plans.

The UK defined benefit pension plans were historically final salary in nature, with a normal retirement age of 60, and are both closed to new entrants and future accrual. The plans operate under trust law and are managed and administered by Trustees in accordance with the terms of each plan’s Trust Deed and Rules and relevant legislation. The contributions paid to the UK plans are set every three years based on a funding agreement between the company and Trustee after taking actuarial advice.

The North Americas pension arrangements consists of three funded plans in the USA (all of which are closed to future accrual) and one funded plan in Canada (which is closed to new entrants and to future accrual). All pension plans, except one, are final salary defined benefit in nature, and the plans’ liabilities are valued regularly in line with statutory funding requirements.

The Rest of the World pension arrangements are comprised of the Group’s pension plans in India, South Korea, Mexico, Thailand and Indonesia.

The Group also operates a number of post-retirement healthcare plans in North Americas and the United Kingdom, which provide employees with other post-retirement benefits in respect of healthcare. The plans are unfunded and the liability is assessed by qualified independent actuaries under the projected unit method.

20 EMPLOYEE BENEFITS (continued)

Pension plan assumptions

The major actuarial assumptions (expressed as weighted averages or ranges) at year end were as follows:

	European		United Kingdom		North America		Rest of the World	
	2022	2021	2022	2021	2022	2021	2022	2021
				%				
Price inflation	1.30-2.50	1.00 – 2.00	3.20	3.20	0.00 – 2.00	0.00 – 2.00	0.00 – 3.50	0.00 – 3.50
Discount rate for scheme liabilities	2.20-3.80	0.25 – 2.25	5.00	1.90	2.75	2.75	2.00 – 9.50	2.00 – 9.50
Rate of increase in pensionable salaries	2.00-3.50	0.00 – 4.50	0.00	n/a	0.00 – 3.00	0.00 – 3.00	4.00 – 8.00	4.00 – 8.00
Rate of increase in pensions in payment	0.00-2.50	-2.90 – 2.00	3.00-3.70	2.20 – 3.70	0.00-0.50	0.00 – 0.50	-	n/a
Rate of increase for deferred pensioners	0.00-0.53	0.00 – 2.00	2.80-3.20	2.90 – 3.20	-	n/a	-	n/a
Healthcare medical trend rate (initial)	2.40	2.00	5.40	5.40	5.48 – 6.00	5.48 – 6.00	-	n/a
Healthcare medical trend rate (ultimate)	2.40	2.00	5.40	5.40	4.50 – 5.00	4.50 – 5.00	-	n/a

The assumptions relating to longevity underlying the pension liabilities at the reporting date are based on standard actuarial mortality tables and include an allowance for future improvements in longevity. The assumptions are equivalent to expecting a 65-year old to live for a number of years as follows:

	European		United Kingdom		North America		Rest of the World	
	2022	2021	2022	2021	2022	2021	2022	2021
				(Years)				
Longevity at age 65 for current pensioners	20.4 – 24.9	20.4 – 24.9	21.8-21.9	21.8 – 22.2	21.1 – 22.2	21.1 – 22.2	n/a	n/a

The following table presents the sensitivity of the defined benefit obligation to each significant actuarial assumption:

	2022			
	European	United Kingdom	North America	Rest of the World
		€m		
Discount rate: 1% decrease	31.7	116.6	0.9	0.1
Rate of inflation: 0.5% increase[1]	15.5	25.0	0.9	-
Mortality: 1 year increase in longevity for a member currently aged 65	7.6	24.3	0.9	-

	2021			
	European	United Kingdom	North America	Rest of the World
		€m		
Discount rate: 1% decrease	79.9	325.5	9.8	1.8
Rate of inflation: 0.5% increase[1]	24.1	110.8	1.2	-
Mortality: 1 year increase in longevity for a member currently aged 65	12.5	57.3	1.6	-

[1] The sensitivity to the inflation assumption change includes corresponding changes to the future salary increase and future pension increase assumptions where these assumptions are set to be linked to the inflation assumption.

20 EMPLOYEE BENEFITS (continued)

Pension assets (schemes in surplus)

The disclosures relating to the net pension assets are disclosed below. The amounts recognised in the balance sheet are as follows:

	2022		
	European	United Kingdom	Total
	€m		
Equities	24.8	0.8	25.6
Bonds	14.9	255.2	270.1
Property	6.3	-	6.3
Other	2.4	60.6	63.0
Fair value of plan assets	**48.4**	**316.6**	**365.0**
Present value of funded obligations	(39.2)	(298.1)	(337.3)
Net pension asset	**9.2**	**18.5**	**27.7**

	2021		
	European	United Kingdom	Total
	€m		
Equities	36.5	89.5	126.0
Bonds	15.0	961.8	976.8
Property	5.0	14.0	19.0
Other	1.4	317.6	319.0
Fair value of plan assets	**57.9**	**1,382.9**	**1,440.8**
Present value of funded obligations	(45.8)	(1,326.0)	(1,371.8)
Net pension asset	**12.1**	**56.9**	**69.0**

Other investments largely consist of quoted instruments. There are no plans which hold investments in the Group's own financial instruments, or hold assets or property which are used by the Group.

The amounts recognised in the income statement are as follows:

	2022	2021	2022	2021	2022	2021
	European		United Kingdom		Total	
	€m					
Current service cost[1]	(3.9)	(4.3)	(1.4)	(0.9)	(5.3)	(5.2)
Expected return on plan assets[2]	0.6	0.2	25.5	8.2	26.1	8.4
Interest cost on obligation[2]	(0.5)	(0.2)	(24.1)	(7.6)	(24.6)	(7.8)
Total	**(3.8)**	**(4.3)**	**-**	**(0.3)**	**(3.8)**	**(4.6)**

(1) Included within operating profit

(2) Included within finance costs.

20 EMPLOYEE BENEFITS (continued)

Pension assets (schemes in surplus) (continued)

Reconciliation of present value of scheme liabilities:

	European	United Kingdom	Total
		€m	
At 1 January 2021	-	(465.0)	(465.0)
Current service cost	(4.3)	(0.9)	(5.2)
Interest cost	(0.2)	(7.6)	(7.8)
Movements between schemes in surplus and schemes in deficit	(45.5)	(829.0)	(874.5)
Benefits paid	1.2	26.0	27.2
Actuarial gain/(loss) - experience	0.7	(0.7)	-
Actuarial gain/(loss) - assumptions	2.3	(5.4)	(3.1)
Exchange adjustments	-	(43.4)	(43.4)
At 31 December 2021	**(45.8)**	**(1,326.0)**	**(1,371.8)**
Current service cost	(3.9)	(1.4)	(5.3)
Interest cost	(0.5)	(24.1)	(24.6)
Movements between schemes in surplus and schemes in deficit	-	488.7	488.7
Benefits paid	2.0	78.2	80.2
Actuarial gain/(loss) - experience	(3.5)	(4.4)	(7.9)
Actuarial gain/(loss) - assumptions	12.5	470.2	482.7
Exchange adjustments	-	20.7	20.7
At 31 December 2022	**(39.2)**	**(298.1)**	**(337.3)**

Reconciliation of fair value of scheme assets:

	European	United Kingdom	Total
		€m	
At 1 January 2021	-	498.0	498.0
Expected return on scheme assets	0.2	8.2	8.4
Employer contributions	4.0	8.7	12.7
Movements between schemes in surplus and schemes in deficit	45.3	841.2	886.5
Benefits paid	(1.2)	(26.0)	(27.2)
Actuarial gain	9.6	6.9	16.5
Exchange adjustments	-	45.9	45.9
At 31 December 2021	**57.9**	**1,382.9**	**1,440.8**
Expected return on scheme assets	0.6	25.5	26.1
Employer contributions	3.7	28.3	32.0
Movements between schemes in surplus and schemes in deficit	-	(466.6)	(466.6)
Benefits paid	(1.9)	(78.2)	(80.1)
Actuarial loss	(11.9)	(552.8)	(564.7)
Exchange adjustments	-	(22.5)	(22.5)
At 31 December 2022	**48.4**	**316.6**	**365.0**

20 EMPLOYEE BENEFITS (continued)

Pension liabilities (schemes in deficit)

The disclosures relating to the net pension liabilities are disclosed below. The amounts recognised in the balance sheet are as follows:

	2022				
	European	United Kingdom	North America	Rest of the World	Total
			€m		
Equities	47.7	-	35.9	0.7	84.3
Bonds	73.3	153.1	42.4	0.7	269.5
Property	12.5	-	-	-	12.5
Other	80.9	281.3	(31.6)	5.9	336.5
Fair value of plan assets	**214.4**	**434.4**	**46.7**	**7.3**	**702.8**
Present value of funded obligations	(273.1)	(456.3)	(40.1)	(9.6)	(779.1)
Present value of unfunded obligations	(88.3)	(0.3)	(8.9)	(15.7)	(113.2)
Net pension liability	**(147.0)**	**(22.2)**	**(2.3)**	**(18.0)**	**(189.5)**

	2021				
	European	United Kingdom	North America	Rest of the World	Total
			€m		
Equities	95.4	-	4.6	0.3	100.3
Bonds	95.6	1.2	55.4	0.6	152.8
Property	8.8	-	-	-	8.8
Other	47.9	0.7	0.5	8.3	57.4
Fair value of plan assets	**247.7**	**1.9**	**60.5**	**9.2**	**319.3**
Present value of funded obligations	(340.2)	(2.4)	(53.7)	(12.0)	(408.3)
Present value of unfunded obligations	(112.5)	(0.5)	(11.7)	(19.6)	(144.3)
Net pension liability	**(205.0)**	**(1.0)**	**(4.9)**	**(22.4)**	**(233.3)**

The majority of the assets invested in property are unquoted. All other investments are largely in quoted instruments. Equities comprise of well-diversified holdings over a wide range of global markets.

There are no plans which hold investments in the Group's own financial instruments, or hold assets or property which are used by the Group.

The amounts recognised in the income statement are as follows:

	2022	2021	2022	2021	2022	2021	2022	2021	2022	2021
	European		United Kingdom		North America		Rest of World		Total	
					€m					
Current service cost(1)	(13.8)	(15.1)	-	(1.7)	(0.7)	(0.9)	(1.9)	(2.0)	(16.4)	(19.7)
Past service credit(1)	-	0.2	-	-	-	-	-	-	-	0.2
Expected return on plan assets(2)	3.1	1.6	-	13.0	1.7	1.6	0.3	0.2	5.1	16.4
Interest cost on obligation(2)	(5.5)	(3.4)	-	(13.2)	(1.8)	(1.7)	(1.1)	(0.8)	(8.4)	(19.1)
Total	**(16.2)**	**(16.7)**	**-**	**(1.9)**	**(0.8)**	**(1.0)**	**(2.7)**	**(2.6)**	**(19.7)**	**(22.2)**

(1) Included within operating profit

(2) Included within finance cost

20 EMPLOYEE BENEFITS (continued)

Pension liabilities (schemes in deficit) (continued)

Reconciliation of present value of scheme liabilities:

	European	United Kingdom	North America	Rest of the World	Total
			€m		
At 1 January 2021	**(509.3)**	**(799.5)**	**(68.6)**	**(33.4)**	**(1,410.8)**
Transfers in	(0.8)	-	-	(0.1)	(0.9)
Current service cost	(15.1)	(1.7)	(0.9)	(2.0)	(19.7)
Past service credit	0.2	-	-	-	0.2
Employee contributions	(0.3)	-	-	-	(0.3)
Interest cost	(3.4)	(13.2)	(1.7)	(0.8)	(19.1)
Movements between schemes in surplus and schemes in deficit	45.5	829.0	-	-	874.5
Benefits paid	15.2	51.6	6.5	4.0	77.3
Actuarial (loss)/gain - experience	(5.8)	1.2	1.6	(0.7)	(3.7)
Actuarial gain/(loss) - assumptions	20.1	(17.0)	3.2	1.6	7.9
Exchange adjustments	1.0	(53.3)	(5.5)	(0.2)	(58.0)
At 31 December 2021	**(452.7)**	**(2.9)**	**(65.4)**	**(31.6)**	**(552.6)**
Divesture	-	-	-	2.0	2.0
Current service cost	(13.8)	-	(0.7)	(1.9)	(16.4)
Employee contributions	(0.3)	-	-	-	(0.3)
Interest cost	(5.5)	-	(1.8)	(1.1)	(8.4)
Movements between schemes in surplus and schemes in deficit	-	(488.7)	-	-	(488.7)
Benefits paid	19.9	-	4.3	4.6	28.8
Actuarial (loss)/gain - experience	(6.2)	0.2	(0.4)	0.6	(5.8)
Actuarial gain - assumptions	95.4	1.3	17.2	2.2	116.1
Exchange adjustments	1.8	33.5	(2.2)	(0.1)	33.0
At 31 December 2022	**(361.4)**	**(456.6)**	**(49.0)**	**(25.3)**	**(892.3)**

20 EMPLOYEE BENEFITS (continued)

Pension liabilities (schemes in deficit) (continued)

Reconciliation of fair value of scheme assets:

	European	United Kingdom	North America	Rest of the World	Total
			€m		
At 1 January 2021	**270.0**	**771.7**	**61.5**	**8.7**	**1,111.9**
Expected return on scheme assets	1.6	13.0	1.6	0.2	16.4
Employer contributions	23.4	32.7	1.0	4.1	61.2
Employee contributions	0.3	-	-	-	0.3
Movements between schemes in surplus and schemes in deficit	(45.3)	(841.2)	-	-	(886.5)
Benefits paid	(15.2)	(51.6)	(6.5)	(4.0)	(77.3)
Actuarial gain/(loss)	14.1	25.0	(2.0)	0.1	37.2
Exchange adjustments	(1.2)	52.3	4.9	0.1	56.1
At 31 December 2021	**247.7**	**1.9**	**60.5**	**9.2**	**319.3**
Divesture	-	-	-	(1.9)	(1.9)
Expected return on scheme assets	3.1	-	1.7	0.3	5.1
Employer contributions	25.7	0.2	0.9	4.2	31.0
Employee contributions	0.3	-	-	-	0.3
Movements between schemes in surplus and schemes in deficit	-	466.6	-	-	466.6
Benefits paid	(19.8)	-	(4.4)	(4.6)	(28.8)
Actuarial loss	(41.7)	(0.6)	(13.6)	(0.1)	(56.0)
Exchange adjustments	(0.9)	(33.7)	1.6	0.2	(32.8)
At 31 December 2022	**214.4**	**434.4**	**46.7**	**7.3**	**702.8**

Depending on prevailing exchange rates, the Group expects to contribute approximately €59.7 million to its defined pension plans in 2023.

21 PROVISIONS

	Onerous contracts	Severance and restructuring	Environmental	Plant closures	Other provisions	Total
			€m			
At 1 January 2022	1.5	3.5	201.9	12.8	20.9	240.6
Charged/(credited) to the consolidated income statement	-	0.1	(0.2)	-	0.1	-
Reclassifications	-	-	4.8	(4.0)	(2.8)	(2.0)
Business disposals	(1.3)	-	-	-	-	(1.3)
Utilised in the year	(0.2)	(2.9)	(26.2)	(2.7)	(0.8)	(32.8)
Discount unwinding	-	-	(12.5)	(0.3)	(0.1)	(12.9)
Effects of movement in foreign exchange	-	(0.1)	(3.0)	(0.1)	(0.1)	(3.3)
At 31 December 2022	**-**	**0.6**	**164.8**	**5.7**	**17.2**	**188.3**
Non-current	-	0.3	161.4	6.2	17.4	185.3
Current	1.5	3.2	40.5	6.6	3.5	55.3
At 31 December 2021	**1.5**	**3.5**	**201.9**	**12.8**	**20.9**	**240.6**
Non-current	-	0.1	134.4	4.2	15.9	154.6
Current	-	0.5	30.4	1.5	1.3	33.7
At 31 December 2022	**-**	**0.6**	**164.8**	**5.7**	**17.2**	**188.3**

21 PROVISIONS (continued)

Onerous contracts

Provisions related to unfavourable supply contracts and contract termination costs with related parties. Cash of €0.2 million was spent in the year. The remaining provision was disposed of as part of sale of INEOS Styrolution India limited (see Note 3).

Severance and restructuring

The provision recognised in 2021 by Aromatics business in respect of manpower reorganisation costs was fully spent in the year for €2.2 million. Remaining provision related to supply chain and commercial teams reorganisation costs in INEOS Inovyn. Cash of €0.7 million was spent in the year. The remaining provision of €0.6 million is expected to be fully utilised by 2025.

Environmental

Environmental provisions represent the expected cost of remediation works where there is a legal or constructive obligation for the works to be carried out and a reasonable estimate of the cost can be made. The majority of the provisions created in prior years relate to obligations associated with the remediation of mercury-based cell rooms at INEOS Inovyn sites in Belgium, France, Sweden, Spain, Italy and the United Kingdom, plus costs of implementing the remdiation work at the Feyzin site in France to comply with local legislation.

In total €26.2 million was spent on environmental-related provisions in the year and the remaining provisions of €164.8 million is expected to be utilised by 2047.

Plant closures

Plant closure provision mainly relate to activities at Runcorn, United Kingdom in respect of the Sulphur Chemicals plant which closed in 2021 and Wilhelmshaven, Germany in respect of the mercury cell room which closed in 2013. The remaining provision of €5.7 million is expected to be fully utilised by 2029.

Other provisions

Other provisions mainly relate to various legal and customer claims, including a liability to the Styrolution business' previous shareholder, BASF under prior legal agreements. There was a reclassification of €2.8 million to short-term accruals during 2022 as the amounts and timing of payment became more certain. The provision is expected to be fully utilised by 2027.

22 OTHER FINANCIAL LIABILITIES

	2022	2021
	€m	
Current		
Derivative commodity contracts designated as fair value through the profit or loss (note 25)	**46.2**	**53.4**

23 SHARE CAPITAL AND DIVIDENDS

Share capital

	2022	2021
	€m	
200,100 (2021: 200,100) issued Ordinary shares (pounds sterling) of £1.00 (2021: £1.00) each	0.3	0.3
2 (2021: 4) issued Ordinary shares (Euro) of €1.00 (2021: €1.00) each	-	-
	0.3	**0.3**

23 SHARE CAPITAL AND DIVIDENDS (continued)

As the reporting currency of the Company is the Euro, share capital has been converted to Euros at the effective rate of exchange ruling at the date of issuance.

On 15 January 2021, the Company undertook a capital reduction exercise of its full share premium account of €6,620.4 million which was transferred to retained earnings. Two ordinary shares (Euro) were also cancelled.

Dividends

The following dividends were recognised during the year:

	2022	2021
	€m	
Repayment of Equity Bridge Contribution	-	824.9
Other dividends declared	521.0	393.3
	521.0	**1,218.2**

The Equity Bridge Contribution received from the Company's immediate party undertaking as part of the BP Acquisition was repaid in January 2021 via a return of capital of €824.9 million.

Interim dividends of €521.0 million were declared and paid during the year (2021: €393.3 million). Subsequent to year-end, the Directors have declared a final dividend of €500.9 million (2021: €nil) as at 23 January 2023 (see note 32).

The dividend declared in the current year equates to €2,603.7 per Ordinary share (2021: €6,087.8 per Ordinary share).

The holders of ordinary shares are entitled to receive dividends as declared from time to time and are entitled to one vote per share at meetings of the Company.

24 MERGER RESERVE

On 31 December 2020, the Group acquired 94.9% of the shares in INOVYN Limited, pursuant to a contribution agreement dated 24 July 2020 between INEOS Group Investments Limited, INEOS Industries Limited, INEOS Industries Holdings Limited, the Company and INEOS Quattro Financing Limited, a subsidiary undertaking of the Company in exchange for €3,416.4 million. On 31 December 2020, €3,245.7 million was debited to a merger reserve, being the difference between the book value of the net assets acquired and the total consideration paid.

A difference of €1,281.2 million between the predecessor value of the Group and the fair value recognised as the investment has been debited to a merger reserve for other prior year acquisitions.

25 FINANCIAL INSTRUMENTS

The Group has exposure to the following risks arising from financial instruments:

- credit risk
- liquidity risk
- market risk (including currency and interest rate risk)

This note presents information about the Group's exposure to each of the above risks, the Group's objectives, policies and processes for measuring and managing risk, and the Group's management of capital.

The Board of Directors have overall responsibility for the establishment and oversight of the Group's risk management framework. They are responsible for developing and monitoring the Group's risk management policies. The Group, through its training and management standards and procedures, aims to develop a disciplined and constructive control environment in which all employees understand their roles and obligations.

25 FINANCIAL INSTRUMENTS (continued)

25(a) Fair values of financial instruments

Trade and other receivables

The carrying amount of trade and other receivables generally approximates to fair value due to their short maturities. Where settlement is not due in the short-term and where the effect is material, fair value is estimated as the present value of future cash flows discounted at the market rate of interest at the reporting date.

Trade and other payables

The carrying amount of trade and other payables generally approximates to fair value due to their short maturities. Where settlement is not due in the short-term and where the effect is material, fair value is estimated as the present value of future cash flows discounted at the market rate of interest at the reporting date.

Cash and cash equivalents

The fair value of cash and cash equivalents is estimated as its carrying amount where the cash is repayable on demand. Where it is not repayable on demand then the fair value is estimated at the present value of future cash flows, discounted at the market rate of interest at the balance sheet date.

Interest-bearing borrowings

The fair value of the interest-bearing loans (excluding the securitisation facility, lease liabilities and related party loans) is calculated based on the present value of future principal and interest cash flows, discounted at the market rate of interest at the balance sheet date. The fair value of the securitisation facilities is the same as the carrying value excluding debt issue costs. The fair value of lease liabilities is determined by reference to market rates for similar lease agreements. The fair value of the related party loans is the same as the carrying value.

Derivative financial instruments

The Group has entered into derivative financial instruments and the fair value is based on market or broker quotes.

Equity instruments

The Group has entered into derivative financial instruments and the fair value is based on market or broker quotes.

The fair values for each class of financial assets and financial liabilities together with their carrying amounts shown in the consolidated balance sheet are as follows:

	2022		**2021**	
	Carrying amount	**Fair value**	**Carrying amount**	**Fair value**
	€m			
Financial assets held at fair value through other comprehensive income:				
Equity instruments	5.5	5.5	-	-
Financial assets held at amortised cost:				
Trade receivables	1,383.1	1,383.1	1,788.0	1,788.0
Amounts due from related parties and associated undertakings	752.2	752.2	124.4	124.4
Other receivables (excluding prepayments and tax)	336.9	336.9	429.6	429.6
Other investments	9.8	9.8	18.1	18.1
Deferred consideration	239.0	239.0	-	-
Cash and cash equivalents	1,530.1	1,530.1	1,291.3	1,291.3
Total financial assets	**4,256.6**	**4,256.6**	**3,651.4**	**3,651.4**

25 FINANCIAL INSTRUMENTS (continued)

25(a) Fair values of financial instruments (continued)

	2022		2021	
	Carrying amount	**Fair value**	**Carrying amount**	**Fair value**
		€m		
Financial liabilities held at fair value through profit or loss:				
Derivative commodity contracts	46.2	46.2	53.4	53.4
Financial liabilities carried at amortised cost:				
Senior Secured Notes due 2026	1,255.5	1,108.4	1,223.8	1,236.9
Senior Notes due 2026	500.0	410.0	500.0	502.2
Term Loan B Facilities due 2026	3,315.6	3,210.6	3,216.5	3,237.2
Term Loan A Facilities due 2023	-	-	179.9	182.7
Term Loan A Facilities due 2025	-	-	183.4	185.3
Term Loan B Facilities due 2027	631.3	589.8	621.5	612.4
Senior Secured Notes due 2027	597.0	486.0	596.3	584.3
Securitisation facilities	(0.2)	-	(0.3)	-
Loan from related party	41.7	41.7	39.8	39.8
Other loans	0.1	0.2	9.4	9.4
Trade payables	1,390.8	1,390.8	1,737.0	1,737.0
Amounts due to related parties	239.3	239.3	428.8	428.8
Accruals and other payables (excluding deferred income)	701.8	701.8	840.1	840.1
Lease liabilities	289.3	289.3	299.2	299.2
Total financial liabilities	**9,008.4**	**8,514.1**	**9,928.8**	**9,948.7**

The table below analyses financial instruments carried at fair value, by valuation method. The different levels, determined in accordance with IFRS 13 "*Fair Value Measurement*", have been defined as follows:

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The fair values of all financial assets and financial liabilities by class together with their carrying amounts shown in the balance sheet are as follows:

	2022			
		Level		
	Fair value	**1**	**2**	**3**
		€m		
Net financial assets and liabilities designated as fair value through profit or loss				
Derivative commodity contracts	(46.2)	-	(46.2)	-
	(46.2)	**-**	**(46.2)**	**-**
Net financial assets and liabilities designated as fair value through other comprehensive income				
Equity instruments	5.5	5.5	-	-
	5.5	**5.5**	**-**	**-**

25 FINANCIAL INSTRUMENTS (continued)

25(a) Fair values of financial instruments (continued)

	2021			
		Level		
	Fair value	1	2	3
	€m			
Net financial assets and liabilities designated as fair value through profit or loss				
Derivative commodity contracts	(53.4)	-	(53.4)	-
	(53.4)	**-**	**(53.4)**	**-**

The derivative commodity contracts have been assigned to Level 2 since there are no market prices available. The fair value of derivatives is the value that the Group would receive or have to pay if the financial instrument were transferred to an external party at the reporting date. The equity instruments have been assigned to Level 1 since the shares are listed on the London Stock Exchange.

There have been no transfers from one level to another during 2021 and 2022.

25(b) Net gains and losses from financial instruments

Net gains and losses from financial instruments comprise the results of valuations, the amortisation of debt issue costs, the recognition and derecognition of impairment losses, results from the translation of foreign currencies, interest, dividends and all effects on profit or loss of financial instruments.

Net gains from financial assets measured at amortised cost relate primarily to recognition and derecognition of impairment losses, results from the translation of foreign currencies and interest income.

Net losses from financial liabilities measured at amortised cost relate primarily to amortisation of debt issue costs, results from the translation of foreign currencies, interest expense and other financing related expenses.

The item ‘financial instruments at fair value through profit or loss’ comprise valuation gains and losses, and only includes gains and losses from instruments which are not designated as hedging instruments as defined by IFRS 9.

	2022			
	Financial assets at amortised cost	Fair value recognised in profit or loss	Financial assets at fair value through OCI	Financial liabilities at amortised cost
	€m			
Gains from financial instruments				
Interest income	14.6	-	-	-
Foreign exchange gains	140.7	-	-	-
Net result	**155.3**	**-**	**-**	**-**
Carrying value at 31 December	**4,251.1**	**-**	**-**	**-**
Losses from financial instruments				
Interest cost	-	-	-	(247.0)
Amortisation of debt issue costs	-	-	-	(21.9)
Net fair value loss on derivatives	-	(20.8)	-	-
Net fair value loss on equity instruments	-	-	(0.4)	-
Foreign exchange losses	-	-	-	(78.6)
Net result	**-**	**(20.8)**	**(0.4)**	**(347.5)**
Carrying value at 31 December	**-**	**(46.2)**	**5.5**	**(8,962.2)**

25 FINANCIAL INSTRUMENTS (continued)

25(b) Net gains and losses from financial instruments (continued)

	2021		
	Financial assets at amortised cost	**Fair value recognised in profit or loss**	**Financial liabilities at amortised cost**
		€m	
Gains from financial instruments			
Interest income	7.2	-	-
Foreign exchange gains	151.3	-	-
Net result	**158.5**	**-**	**-**
Carrying value at 31 December	**3,651.4**	**-**	**-**
Losses from financial instruments			
Interest cost	-	-	(214.3)
Amortisation of debt issue costs	-	-	(68.6)
Net fair value gains on derivatives	-	(40.8)	-
Foreign exchange losses	-	-	(56.9)
Net result	**-**	**(40.8)**	**(339.8)**
Carrying value at 31 December	**-**	**(53.4)**	**(9,875.4)**

25(c) Credit risk

Financial risk management

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument fails to meet its contractual obligations, and arises principally from the Group's receivables from customers, deposits with financial institutions and amount owed to Group undertakings.

The Group's treasury policy and objectives in relation to credit risk is to minimise the likelihood that the Group will experience financial loss due to counterparty failure and to ensure that in the event of a single loss, the failure of any single counterparty would not materially impact the financial wellbeing of the Group.

Trade and other receivables

The Group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, management also considers the demographics of the Group's customer base, including the default risk of the industry and country in which customers operate, as these factors may have an influence on credit risk. Management considers that there is no geographical concentration of credit risk. The Group has established a credit policy under which each new customer is analysed individually for creditworthiness before the Group's standard payment and delivery terms and conditions are offered or are adjusted accordingly. The Group's review includes external ratings, when available, and in some cases bank references. Purchase limits are established for each customer, which represent the maximum open amount without requiring approval. Customers that fail to meet the Group's benchmark creditworthiness may transact with the Group only on a prepayment basis. No single customer accounts for more than 5% of revenue.

Investments, cash and cash equivalents

Surplus cash investments are only made with banks with which the Group has a relationship. Occasionally deposits are made with banking counterparties that provide financing arrangements, reducing the credit exposure of the Group.

Exposure to credit risk

The carrying amount of financial assets represents the maximum credit exposure. Therefore, the maximum exposure to credit risk at the reporting date was the carrying amount of financial assets. Further details on the Group's exposure to credit risk, and the associated impairments recognised, are given in note 16.

25 FINANCIAL INSTRUMENTS (continued)

25(d) Liquidity risk

Financial risk management

Liquidity risk is the risk that the Group will not be able to meet its financial obligations as they fall due. The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient liquidity to meet its liabilities when due, under normal and stressed conditions, without incurring unacceptable losses or risking damage to the Group. The Group's exposure to liquidity risk is limited by the fact that it operates with significant cash resources, it maintains the most appropriate mix of short, medium and long-term borrowings from the Group's lenders and has significant headroom on the securitisation facilities (see note 17).

The Group is reliant on committed funding from a variety of sources at Group and subsidiary company level to meet the anticipated needs of the Group for the period covered by the Group's budget.

The Group forecasts on a regular basis the expected cash flows that will occur on a weekly and monthly basis. This information is used in conjunction with the weekly reporting of actual cash balances at bank in order to calculate the level of funding that will be required in the short and medium term. On a monthly basis the level of headroom on existing facilities is reported and forecast forward until the end of the financial year.

The maturity profile of the Group's undrawn committed facilities at 31 December 2022 and 2021 was as follows:

	2022	2021
	Undrawn facilities	Undrawn facilities
	€m	
In less than one year	-	-
In more than one year, but not more than two years	840.0	690.0
In more than two years, but not more than five years	-	-
	840.0	**690.0**

The undrawn committed facilities of €840 million (2021: €690.0 million) are in respect of the unused securitisation facilities. The maturity date of the securitisation facilities is 30 June 2024 for the INOVYN securitisation facility and 28 June 2024 for the Styrolution securitisation facility.

The following are the contractual maturities of financial liabilities, including estimated interest payments and excluding the effect of netting agreements:

25 FINANCIAL INSTRUMENTS (continued)

25(d) Liquidity risk (continued)

Financial risk management (continued)

	2022					
	Carrying amount	**Contractual cash flows**	**1 year or less**	**1 to 2 years**	**2 to 5 years**	**5 years and over**
			€m			
Non-derivative financial liabilities						
Senior Secured Notes due 2026	1,255.5	(1,394.1)	(35.8)	(35.8)	(1,322.5)	-
Senior Notes due 2026	500.0	(575.1)	(18.8)	(18.8)	(537.5)	-
Term Loan B Facilities due 2026	3,315.6	(3,993.0)	(228.3)	(229.8)	(3,534.9)	-
Term Loan A Facilities due 2023	-	-	-	-	-	-
Term Loan A Facilities due 2025	-	-	-	-	-	-
Term Loan B Facilities due 2027	631.3	(760.7)	(32.8)	(33.1)	(694.8)	-
Senior Secured Notes due 2027	597.0	(660.8)	(13.5)	(13.5)	(633.8)	-
Securitisation facilities	(0.2)	(9.4)	(4.3)	(3.6)	(1.5)	-
Loan from related party	41.7	(51.9)	-	-	-	(51.9)
Other loans	0.1	(0.1)	(0.1)	-	-	-
Trade payables	1,390.8	(1,390.8)	(1,390.8)	-	-	-
Amounts due to related parties	239.3	(239.3)	(239.3)	-	-	-
Accruals and other payables (excluding deferred income)	701.8	(701.8)	(669.9)	(25.4)	(4.8)	(1.7)
Lease obligations	289.3	(390.3)	(83.6)	(62.4)	(88.2)	(156.1)
Derivative financial liabilities						
Commodity contracts	46.2	(46.2)	(46.2)	-	-	-
	9,008.4	**(10,213.5)**	**(2,763.4)**	**(422.4)**	**(6,818.0)**	**(209.7)**

	2021					
	Carrying amount	**Contractual cash flows**	**1 year or less**	**1 to 2 years**	**2 to 5 years**	**5 years and over**
			€m			
Non-derivative financial liabilities						
Senior Secured Notes due 2026	1,223.8	(1,398.3)	(34.9)	(34.9)	(1,328.5)	-
Senior Notes due 2026	500.0	(593.9)	(18.8)	(18.8)	(556.3)	-
Term Loan B Facilities due 2026	3,216.5	(3,659.2)	(116.9)	(116.8)	(3,425.5)	-
Term Loan A Facilities due 2023	179.9	(185.9)	(124.5)	(61.4)	-	-
Term Loan A Facilities due 2025	183.4	(199.8)	(5.2)	(39.4)	(155.2)	-
Term Loan B Facilities due 2027	621.5	(702.0)	(16.9)	(16.9)	(668.2)	-
Senior Secured Notes due 2027	596.3	(674.3)	(13.5)	(13.5)	(647.3)	-
Securitisation facilities	(0.3)	(8.8)	(3.5)	(3.5)	(1.8)	-
Loan from related party	39.8	(49.6)	-	-	-	(49.6)
Other loans	9.4	(9.9)	(9.7)	(0.1)	(0.1)	-
Trade payables	1,737.0	(1,737.0)	(1,737.0)	-	-	-
Amounts due to related parties	428.8	(428.8)	(428.8)	-	-	-
Accruals and other payables (excluding deferred income)	840.1	(840.1)	(805.3)	(29.2)	(3.7)	(1.9)
Lease obligations	299.2	(370.6)	(82.3)	(55.6)	(89.2)	(143.5)
Derivative financial liabilities						
Commodity contracts	53.4	(53.4)	(53.4)	-	-	-
	9,928.8	**(10,911.6)**	**(3,450.7)**	**(390.1)**	**(6,875.8)**	**(195.0)**

25 FINANCIAL INSTRUMENTS (continued)

25(e) Market risk

Financial risk management

Market risk reflects the possibility that changes in market prices, such as foreign exchange rates, interest rates, crude oil, key feedstocks and raw materials will adversely affect the value of the Group's assets, liabilities or expected future cash flows. The objective of market risk management is to manage and control market risk exposures within acceptable parameters, while optimising the return.

(i) Market risk - Foreign currency risk

The Group operates internationally and is exposed to foreign exchange risk arising from various currency exposures, primarily with respect to the US Dollar, Sterling, Norwegian Krone and Swedish Krona. Foreign exchange risk arises from future commercial transactions and recognised assets and liabilities.

A substantial portion of the Group's revenue is generated in, or linked to, Sterling, US dollars and the Euro. Product prices, certain feedstock costs and most other operating costs are denominated in US Dollar, Sterling, Euro, Norwegian Krone and Swedish Krona. In the US petrochemical and specialty chemicals businesses, product prices, raw materials costs and most other costs are primarily denominated in US Dollars.

The group applies hedge accounting to foreign currency differences arising on the retranslation of a financial liability designated as a hedge of a net investment in a foreign operation. When the settlement of a monetary item receivable from or payable to a foreign operations is neither planned nor likely in the foreseeable future, foreign exchange gains and losses arising from such a monetary items is considered to form part of a net investment in a foreign operation and changes to the fair value are recognised directly within equity.

The Group generally does not enter into foreign currency exchange instruments to hedge foreign currency transaction exposure, although the Group may do so in the future.

The Group benefits from natural hedging, to the extent that currencies in which net cash flows are generated from the Group's operations, are matched against long-term indebtedness.

The foreign currency exposure where the Group's financial assets / (liabilities) are not denominated in the functional currency of the operating unit involved is shown below. Foreign exchange differences on retranslation of these assets and liabilities are taken to the income statement of the Group.

	2022	2021
	€m	
Euros	37.4	154.9
Pounds Sterling	27.3	20.6
US Dollars	186.3	33.6
Norwegian Krone	(0.3)	18.8
Others	(74.8)	(76.6)
	175.9	**151.3**

Sensitivity analysis

A 10% per cent weakening of the following currencies at 31 December 2021 and 31 December 2022 would have increased/(decreased) equity and profit or loss by the amounts shown below. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date.

This analysis assumes that all other variables, in particular other exchange rates and interest rates, remain constant. The analysis is performed on the same basis for the comparative year.

25 FINANCIAL INSTRUMENTS (continued)

25(e) Market risk (continued)

(i) Market risk - Foreign currency risk (continued)

	2022	2021	2022	2021
	Equity		Profit or loss	
	€m			
Euros	-	-	(3.4)	(14.1)
Pounds Sterling	-	-	(2.6)	(1.8)
Norwegian Krone	-	-	(16.9)	(1.7)
US Dollars	-	-	-	(3.1)
Other	-	-	6.7	6.7

A 10% per cent strengthening of the above currencies against the Euro at 31 December 2021 and 31 December 2022 would have had the equal but opposite effect on the above currencies to the amounts shown above, on the basis that all other variables remain constant.

(ii) Market risk – Interest rate risk

Profile

At the reporting date the interest rate profile of the Group's interest-bearing financial instruments was:

	2022	2021
	€m	
Fixed rate instruments		
Financial liabilities	(2,683.6)	(2,659.1)
	(2,683.6)	**(2,659.1)**
Variable rate instruments		
Financial assets	1,530.1	1,291.3
Financial liabilities	(3,946.8)	(4,210.4)
	(2,416.7)	**(2,919.1)**

Sensitivity analysis

A change of 1% in interest rates at the reporting date would have increased equity and profit or loss by the amounts shown below. This calculation assumes that the change occurred at the reporting date and had been applied to risk exposures existing at that date.

This analysis assumes that all other variables, in particular foreign currency rates, remain constant and considers the effect of financial instruments with variable interest rates and financial instrument at fair value through profit or loss. The analysis is performed on the same basis for 2022 and 2021.

Profit or (loss)	2022	2021
	€m	
Increase in interest rates by 1%	(24.2)	(29.2)

A 1% change in the opposite direction of the above interest rates at 31 December 2021 and 31 December 2022 would have had the equal but opposite effect on the above currencies to the amounts shown above, on the basis that all other variables remain constant.

25 FINANCIAL INSTRUMENTS (continued)

25(e) Market risk (continued)

(iii) Market risk – Commodity price risk

This section discusses the Group's exposure to the commodity contracts which are not covered under the own use exemption and are recognised as derivative instruments.

The Group is exposed to commodity price risk through fluctuations in raw material prices and sales of products. The raw material exposures result primarily from the price of feedstocks, electricity and base chemicals linked to the price of crude. The sales price exposures are primarily related to petrochemicals where prices are in general linked to the market price of crude oil.

The Group enters into contracts to supply or acquire physical volumes of commodities at future dates during the normal course of business that may be considered derivative contracts. Where such contracts exist and are in respect of the normal purchase or sale of products to fulfil the Group's requirements, the own use exemption from derivative accounting is applied.

The Group in some circumstances enters into swap contracts to acquire physical volumes of commodities at future dates which are not covered under the own use exemption and are recognised as derivative instruments. Derivative commodity contracts designated as fair value through profit or loss are disclosed in notes 22.

The Group operates within procedures and policies designed to ensure that risks, including those relating to the default of counterparties, are minimised.

25(f) Capital management

The Group's objectives for managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to maintain an optimal capital structure to reduce the cost of capital.

The Group defines its capital employed of €9,444.1 million (2021: €8,587.3 million) as equity attributable to the owners of the Company of €4,582.5 million (2021: €3,238.4 million) and net debt (total gross loans and borrowings less cash and cash equivalents) of €4,861.6 million (2021: €5,348.9 million).

The principal sources of debt available to the Group at 31 December 2022 are described in note 17 along with the key operating and financial covenants that apply to these facilities.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, issue new shares, raise new debt or sell assets to reduce debt. The ability of the Group to pay dividends and provide appropriate facilities to the Group is restricted by the terms of principal financing agreements to which members of the Group are party.

26 RECONCILIATION OF NET CASH FLOW TO MOVEMENT IN NET DEBT

	2022	2021
	€m	
Increase in cash and cash equivalents in the year	226.9	438.4
Cash outflow from change in debt financing	(12.2)	(647.1)
Change in net debt resulting from cash flow	214.7	(208.7)
Disposals of business	408.9	-
Other net non-cash transactions	(136.3)	(166.8)
Movement in net debt in the year	**487.3**	**(375.5)**

	1 January 2022	Cash flow	Disposal (Note 3)*	Foreign exchange and other non-cash changes	31 December 2022
			€m		
Cash at bank and in hand	1,291.3	226.9	-	11.9	1,530.1
Debt due within one year	(150.5)	138.1	-	(8.2)	(20.6)
Debt due after more than one year	(6,489.7)	(150.3)	408.9	(140.0)	(6,371.1)
Total external borrowings	(6,640.2)	(12.2)	408.9	(148.2)	(6,391.7)
Net debt before issue costs	**(5,348.9)**	**214.7**	**408.9**	**(136.3)**	**(4,861.6)**

*Excludes cash

	1 January 2021	Cash flow	Foreign exchange and other non-cash changes	31 December 2021
		€m		
Cash at bank and in hand	805.6	438.4	47.3	1,291.3
Debt due within one year	(2,930.4)	2,925.6	(145.7)	(150.5)
Debt due after more than one year	(2,848.6)	(3,572.7)	(68.4)	(6,489.7)
Total external borrowings	(5,779.0)	(647.1)	(214.1)	(6,640.2)
Net debt before issue costs	**(4,973.4)**	**(208.7)**	**(166.8)**	**(5,348.9)**

Following the application of IFRS 16 *Leases* on 1 January 2019, all lease liabilities have been excluded from the definition of net debt.

27 CAPITAL COMMITMENTS

Outstanding capital expenditure on property, plant and equipment authorised by the directors of Group companies and for which contracts had been placed as at 31 December 2022 by the Group amounted to approximately €211.7 million (2021: €575.5 million).

28 CONTINGENCIES

The Group companies are and may from time to time be involved in proceedings or litigation arising in the ordinary course of business. Management does not believe that the ultimate resolution of these matters will materially affect the Group's financial condition or results of operations.

29 RELATED PARTIES

Related parties comprise:

- Parent entities and their subsidiaries not included within the INEOS Quattro Holdings Limited group;
- Entities controlled by the shareholders of INEOS Limited, the ultimate parent company of INEOS Quattro Holdings Limited;
- Key management personnel
- Jointly controlled entities and associated undertakings held by INEOS Limited (and their subsidiaries) and
- Jointly controlled entities and associated undertakings held within the INEOS Quattro Holdings Limited group.

Mr J A Ratcliffe, Mr A C Currie and Mr J Reece are shareholders in INEOS Limited.

Parent entities and their subsidiaries not included within the INEOS Quattro Holdings group

Material trading and non-trading transactions by the Group with the entities controlled by INEOS Limited are as follows:

	Transaction value		Balance outstanding	
	Twelve-Months Period Ended		Period Ended	
	December 31, 2022	December 31, 2021	December 31, 2022	December 31, 2021
	(€ in millions)			
Sale of products	338.1	323.6	-	-
Purchase of raw materials	(1,488.1)	(1,229.3)	-	-
Cost recoveries	117.3	89.3	-	-
Services received	(223.9)	(139.7)	-	-
Net interest	(1.8)	(1.7)	-	-
Trade and other receivables	-	-	97.0	62.1
Loans receivable	-	-	500.8	-
Trade and other payables	-	-	(172.4)	(264.4)
Interest-bearing loans and borrowings	-	-	(41.7)	(39.8)

Included within services above is a management fee paid to INEOS Limited of €59.5 million (2021: €55.3 million). No amounts remained outstanding as at 31 December 2022 (2021: €nil).

In general, all outstanding trading balances with INEOS companies are priced based on contractual arrangements and are to be settled in cash within two months of the reporting date, with the exception of the interest-bearing loans and borrowings. None of the balances are secured. The transactions were made on terms equivalent to those that prevail in arm's length transactions. There were no provisions for doubtful debt related to these entities as at 31 December 2022 (2021: €nil).

The loan receivable is an unsecured loan owed by INEOS Industries Holdings Limited. The loan attracts interest at commercial rate and had maturity of 2 December 2023. Subsequent to the year-end, this loan was fully settled through a dividend distribution approved on 23 January 2023 (see note 32).

The interest bearing loan is an unsecured loan due to INEOS Enterprises Holdings Limited. The loan bears interest at a rate of 4.5%. There is no formal repayment date under the loan agreement.

Entities controlled by the shareholders of INEOS Limited

The shareholders of INEOS Limited own a controlling interest in the share capital of INEOS Limited and Screencondor Limited. During the year ended 31 December 2022, the Group made no sales or purchases with these companies (2021: €nil). As at 31 December 2022, amounts owed by Screencondor Limited were €1.2 million (2021: €1.2 million).

29 RELATED PARTIES (continued)

Jointly controlled entities and associated undertakings held within the INEOS Limited group and jointly controlled entities and associated undertakings held within the INEOS Quattro Holdings Limited group.

Material trading and non-trading transactions with these entities during the period were as follows:

	Transaction value		Balance outstanding	
	Twelve-Months Period Ended		Period Ended	
	December 31, 2022	December 31, 2021	December 31, 2022	December 31, 2021
	(€ in millions)			
Sale of products	88.6	79.8	-	-
Purchase of raw materials	(553.0)	(570.5)	-	-
Cost recoveries	236.1	191.5	-	-
Services received	(0.4)	-	-	-
Net interest	2.1	2.0	-	-
Trade and other receivables	-	-	77.8	46.7
Trade and other payables	-	-	(67.1)	(164.4)
Loans receivable	-	-	75.1	14.4

In general, all outstanding balances with these related parties are priced based on contractual arrangements and are to be settled in cash within two months of the reporting date with the exception of the interest-bearing loans and borrowings. None of the balances are secured. The transactions were made on terms equivalent to those that prevail in arm’s length transactions. There were no provisions for doubtful debt related to these entities as at 31 December 2022 (2021: €nil).

Loans receivable include a total of €63.1 million loans granted by the Group to INEOS Styrolution Sinopec Advanced Materials (Ningbo) Ltd. These loans are unsecured, attract interest at commercial rate and mature in 2032.

Transactions with key management personnel

The Group define key management as the Directors of the Company. Details of Directors' remuneration are given in note 7.

30 ULTIMATE PARENT UNDERTAKING AND CONTROLLING PARTY

The immediate parent company of the Company is INEOS Industries Holdings Limited.

The ultimate parent undertaking of the Company is INEOS Limited, a company incorporated in the Isle of Man. The directors regard Mr J A Ratcliffe as the ultimate controlling party by virtue of his majority shareholding in INEOS Limited.

The smallest and largest group in which the results of the Company are consolidated is that headed by INEOS Industries Limited. Copies of the financial statements can be obtained from the company secretary at the registered office, INEOS Industries Limited, Hawkslease, Chapel Lane, Lyndhurst, Hampshire, SO43 7FG.

31 CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS

The Group prepares its consolidated financial statements in accordance with adopted IFRSs, which require management to make judgements, estimates and assumptions which affect the application of the accounting policies, and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates. The estimates and assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates are revised and in any future periods.

Critical judgements in applying the Group's accounting policies

On 28 July 2022, INEOS and Sinopec signed a petrochemical deal to establish a total of three joint-ventures for ABS, based on INEOS' proprietary ABS technology. The set-up of the first joint-venture was completed on 28 December 2022. Management had to exercise critical judgement regarding the allocation of the consideration to the disposal of INEOS Styro Advanced Materials (Ningbo) Pte Ltd due to the linked nature of the transactions. The contractual arrangements are such that the first two joint ventures are accounted for together, and the third will be accounted for separately, in due course.

Key sources of estimation uncertainty

The key assumptions concerning the future, and other key sources of estimation uncertainty at the reporting period that may have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year, are discussed below.

Post-retirement benefits

The Group operates a number of defined benefit post-employment schemes. Under IAS 19 Revised Employee Benefits, management is required to estimate the present value of the future defined benefit obligation of each of the defined benefit schemes. The costs and year end obligations under defined benefit schemes are determined using actuarial valuations. The actuarial valuations involve making numerous assumptions, including:

- Future rate of increase in salaries;
- Inflation rate projections;
- Discount rate for scheme liabilities;
- Expected rates of return on the scheme assets;
- Mortality levels.

Details of post-retirement benefits including the major actuarial assumptions and the sensitivity of the post-retirement benefits to the assumptions are set out in Note 20 : pension plan assumptions.

Provisions

Provisions are recognised for the cost of remediation works where there is a legal or constructive obligation for such work to be carried out. Where the estimated obligation arises upon initial recognition of the related asset, the corresponding debit is treated as part of the cost of the related asset and depreciated over its estimated useful life.

Other provisions are recognised in the period when it becomes probable that there will be a future outflow of funds resulting from past operations or events that can be reasonably estimated. The timing of recognition requires the application of judgement to existing facts and circumstances, which can be subject to change.

Estimates of the amounts of provisions recognised are based on current legal and constructive requirements, technology and price levels. Because actual outflows can differ from estimates due to changes in laws, regulations, public expectations, technology, prices and conditions, and can take place many years in the future, the carrying amounts of provisions are regularly reviewed and adjusted to take account of such changes.

The nature and amount of provisions as well as the key assumptions are included within the financial statements are detailed in note 21. The discount rate applied to reflect the time value of money in the carrying amount of provisions requires estimation. The discount rate applied is reviewed regularly and adjusted following changes in market rates. If the estimated discount rate, one of the key assumptions in determining the environmental provisions, used in the calculation had been 1% higher than management's estimate, the carrying amount of the environmental provisions would have been €3.9 million lower.

31 CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS (continued)

Key sources of estimation uncertainty (continued)

Impairment tests for goodwill and other non-financial assets

Goodwill impairment testing is performed annually or of there is an indication of impairment. Goodwill impairment tests are based on cash generating units and compare the recoverable amount of the unit with the respective carrying amount. The recoverable amount of an asset or cash generating unit is the higher of its fair value less costs of disposal and its value in use. The value in use is determined using a discounted cash flow method, considering earnings forecast of the unit. The management of the Group identified the operating segments as cash generating units ("CGUs") for the purposes of testing goodwill for impairment. Each unit or group of units to which goodwill is allocated to shall represent the lowest level within the entity at which the goodwill is monitored for internal management purposes. The goodwill is internally monitored at the level of business units.

Intangible assets other than goodwill assets and property, plant and equipment are generally valued at cost less amortisation. Impairment losses on intangible assets and property, plant and equipment are recognised when the recoverable amount of the cash generating unit which includes the asset is lower than the respective carrying amount. In accordance with the definition of a cash generating unit under IAS 36, the individual production plants generally do not represent separate cash generating units, but are part of larger asset groups that form the cash generating units.

Since assessment whether goodwill or a non-financial asset is impaired is based on long-term business plans for the cash generating units and the determination of an appropriate discount rate, management uses significant estimates and assumptions in making these assessments. Details on the estimates used for the goodwill impairment test are disclosed in note 11.

Partial disposal of business with joint control retained

On 28 December 2022, the Group transferred 50% of its shareholding in INEOS Styrolution Advanced Materials (Ningbo) Pte Limited to China Petroleum & Chemical Corporation (Sinopec). As a result, the Group gave up control but retained joint control. The 50% equity share in the joint-venture acquired by the Group has been measured at fair value on the date of acquisition by applying discounted cash flow method based on a long-term business plan with a detailed planning period of seven years.

The discount rate of 9.0% applied to reflect the time value of money of the cash flows expected based on the long-term business plan requires estimation. If the estimated discount rate, one of the key assumptions in determining the fair value, used in the calculation had been 1% higher than management's estimate, the fair value of 50% share of the joint-venture will have been €81 million lower.

32 SUBSEQUENT EVENTS

On 23 January 2023, the Group declared a dividend payment to its owners of €500.9 million. The dividend was used to settle an inter-company loan (principal plus interest) owed by the Group's owners and as such has not resulted in any cash outflow (see note 16).

On 14 March 2023, the Group entered into an Incremental Facility Agreement to raise a new Dollar Term Loan B of $500.0 million (€471.6 million equivalent) and a new Euro Term Loan B of €375.0 million. The gross proceeds received under these borrowings were used on 15 March 2023 to pay an interim dividend to the Group's owners of €500.0 million with the remaining proceeds used to increase the liquidity of the Group.

From March 2023, the Dollar Term Loan B Facility due 2027 bears interest at a rate per annum equal to, at the option of US Finco:
(a) the applicable Term SOFR plus 0.10% (subject to a floor of 0% per annum) plus a margin of 2.00%; or
(b) the Alternate Base Rate (subject to a floor of 1.00% per annum) plus a margin of 1.00%.

32 SUBSEQUENT EVENTS (continued)

In April 2023, the Group has initiated the process of transitioning the Dollar Term Loan B Facility due 2026 from LIBOR to SOFR.

Subsequent to the year-end, the Group entered into an interest rate swap agreement with HSBC to hedge the fair value risk in relation to the 2030 Term Loans with the notional principal amount of $500 million. Under this interest rate swap agreement, the Group will exchange the variable SOFR exposure for fixed-SOFR obligations.