



INEOS GROUP HOLDINGS S.A.

2021 ANNUAL REPORT

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CERTAIN DEFINITIONS AND PRESENTATION OF FINANCIAL AND OTHER INFORMATION

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

- all references to the “**2023 Senior Secured Notes**” are to the €770,000,000 aggregate principal amount of 4% Senior Secured Notes due 2023 issued pursuant to the 2023 Senior Secured Notes Indenture, which were redeemed in full on May 1, 2019;
- all references to the “**2023 Senior Secured Notes Indenture**” are to the indenture dated as of May 5, 2015, among INEOS Finance plc, as issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee, The Bank of New York Mellon (Luxembourg) S.A., as registrar, paying agent and Luxembourg transfer agent and Barclays Bank PLC, as security trustee, as amended and supplemented from time to time, pursuant to which the 2023 Senior Secured Notes were issued and which has been satisfied and discharged in connection with the redemption of the 2023 Senior Secured Notes;
- all references to the “**2024 IGH Notes**” and to the “**Senior Notes due 2024**” are to the \$500,000,000 aggregate principal amount of 5⁵/₈% Senior Notes due 2024 and €650,000,000 aggregate principal amount of 5³/₈% Senior Notes due 2024 issued pursuant to the 2024 IGH Notes Indenture, which were redeemed in full on November 9, 2021;
- all references to the “**2024 IGH Notes Indenture**” are to the indenture dated as of August 9, 2016, between IGH, as issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee, collateral agent and principal paying agent, The Bank of New York Mellon (Luxembourg) S.A., as Luxembourg paying agent, registrar and Luxembourg transfer agent, and The Bank of New York Mellon as U.S. paying agent and transfer agent, as amended and supplemented from time to time, pursuant to which the 2024 IGH Notes were issued;
- all references to the “**2024 Senior Secured Term Loans**” are to credit facilities due 2024 made available under the Senior Secured Term Loans Agreement;
- all references to the “**2025 Senior Secured Notes**” and to the “**Senior Secured Notes due 2025**” are to the €550,000,000 aggregate principal amount of 2¹/₈% Senior Secured Notes due 2025 issued pursuant to the 2025 Senior Secured Notes Indenture;
- all references to the “**2025 Senior Secured Notes Indenture**” are to the indenture dated as of November 3, 2017, among INEOS Finance plc, as issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee and principal paying agent, The Bank of New York Mellon SA/NV, Luxembourg Branch, as registrar, Luxembourg transfer agent and paying agent and Barclays Bank PLC, as security trustee, as amended and supplemented from time to time, pursuant to which the 2025 Senior Secured Notes were issued;
- all references to the “**2025 Senior Secured Notes Proceeds Loan**” are to the loan under the loan agreement, dated November 3, 2017, between INEOS Finance plc, as lender, and IHL, as borrower, pursuant to which INEOS Finance plc advanced the gross proceeds of the 2025 Senior Secured Notes to IHL;
- all references to the “**2027 Senior Secured Term Loans**” are to credit facilities due 2027 made available under the Senior Secured Term Loans Agreement;
- all references to “**Borrowers**” are to INEOS Finance plc and INEOS US Finance LLC;
- all references to “**BP**” are to BP p.l.c. and its consolidated subsidiaries;
- all references to the “**Collateral**” are to the collateral provided as security for the performance of the obligations of the Parent, the Borrowers and the other Guarantors under the 2026 Senior Secured Notes Indenture, the 2025 Senior Secured Notes Indenture, the March 2026 Senior Secured Notes Indenture, the Senior Secured Term Loans Agreement and the Schuldschein Loan Agreement, as applicable;

- all references to the “**Entrepreneurial (Refining) Business**” are to the entrepreneurial activities related to the Refining Business, which includes the sales and distribution of refining products through an entrepreneur business model;
- all references to the “**Entrepreneurial (Refining) Business JV**” are to the joint venture that, following the Refining Divestiture, operates the Entrepreneurial (Refining) Business and is owned by PetroChina (50.1%) and INEOS Investments (49.9%);
- all references to the “**Grangemouth Divestiture**” are to the disposals to INEOS Grangemouth plc (formerly INEOS Grangemouth Limited) (a subsidiary of INEOS Holdings AG) of the shares of INEOS Commercial Services UK Limited and INEOS Chemicals Grangemouth Limited (including the assets and liabilities relating to the petrochemical operations carried out by such entities at or in connection with the Grangemouth site) effective October 1, 2013;
- all references to the “**Guarantors**” are to the guarantors under the 2026 Senior Secured Notes Indenture, the 2025 Senior Secured Notes Indenture, the March 2026 Senior Secured Notes Indenture, the Schuldschein Loan Agreement and the Senior Secured Term Loans Agreement, collectively;
- all references to “**IFRS**” are to the International Financial Reporting Standards as adopted by the European Union;
- all references to “**IGH**” or the “**Parent**” are to INEOS Group Holdings S.A. and not to any of its subsidiaries;
- all references to “**IHL**” are to INEOS Holdings Limited, the direct parent company of the Issuer and an indirect wholly owned subsidiary of INEOS Group Holdings S.A.;
- all references to “**IHL Pledged Shares**” are to 100% of the capital stock of IHL;
- all references to the “**Indentures**” or the “**Senior Secured Indentures**” are to the May 2026 Senior Secured Notes Indenture, the March 2026 Senior Secured Notes Indenture and the 2025 Senior Secured Notes Indenture, collectively;
- all references to “**INEOS AG**” are to INEOS AG, a subsidiary of INEOS Limited, one of our ultimate parent undertakings;
- all references to “**INEOS Capital**” are to INEOS Capital Limited;
- all references to “**INEOS Group**,” “**INEOS**,” “**Group**,” “**we**,” “**us**” or “**our**” are to INEOS Group Holdings S.A. and its consolidated subsidiaries;
- all references to “**INEOS Investments**” are to INEOS Investments (Jersey) Limited, an entity that is controlled by the principal shareholders of IGH, is not a member of the INEOS Group (but in which the INEOS Group holds certain ordinary shares and is and will be consolidated into our financial statements for so long as we retain the majority of the economic benefits of the entity) and, as a result of the Refining Divestiture, owns a 50.1% interest in the Refining Business JV, a 49.9% interest in the Entrepreneurial (Refining) Business JV, a 50.0% direct interest in the Infrastructure Entity and a 25.05% indirect interest in the Infrastructure Entity by virtue of its 50.1% stake in the Refining Business JV;
- all references to “**INEOS Limited**” are to INEOS Limited, one of our ultimate parent undertakings;
- all references to the “**Infrastructure Entity**” are to INEOS Infrastructure (Grangemouth) Limited, an entity that acquired certain infrastructure assets at Grangemouth, Scotland (principally a power station in Grangemouth, Scotland, and a terminal and other facilities), and which, following the Refining Divestiture, is jointly owned by INEOS Investments (50.0%) and the Refining Business JV (50.0%);

- all references to “**Innovene**” and the “**Innovene business**” refer to (a) all of BP’s petrochemical operating units for olefins, polymers and other derivatives but excluding BP’s Pasadena LAO operations, the Gelsenkirchen naphtha cracking operations and the *Munchmunster olefins operation* (“**O&D**”), (b) two integrated refinery plants in Grangemouth, United Kingdom and Lavéra, France, (c) a gas fractionator located in Hobbs, New Mexico and certain related pipelines and (d) existing O&D strategic joint venture investments other than BP’s joint ventures with SECCO and in Malaysia, prior to giving effect to the Innovene Acquisition;
- all references to the “**Innovene Acquisition**” are to the purchase by the INEOS Group on December 16, 2005 of all of the shares and assets comprising the Innovene business pursuant to the Innovene Acquisition Agreement;
- all references to the “**Innovene Acquisition Agreement**” are to the Share Sale and Purchase Agreement dated October 7, 2005, as amended from time to time, among certain subsidiaries of BP, IHL, certain subsidiaries of IHL and INEOS Group Limited;
- all references to “**INOVYN**” are to INOVYN Limited, an affiliate of ours that is indirectly controlled by our controlling shareholders, and its consolidated subsidiaries;
- all references to the “**Intercreditor Deed**” are to the intercreditor deed dated May 12, 2010, as amended and restated by a first amendment deed dated December 23, 2010, as further amended by a second amendment deed dated February 18, 2011, as further amended by a third amendment deed dated February 6, 2012, as further amended and restated by a fourth amendment deed dated May 4, 2012, as further amended and restated by a fifth amendment deed dated May 8, 2013, as further amended and restated by a sixth amendment deed dated July 8, 2014, as further amended by a seventh amendment deed dated May 5, 2015, as further amended and restated by an eighth amendment deed dated January 5, 2017, as further amended and restated by a ninth amendment deed dated November 3, 2017, as further amended by a tenth amendment deed dated March 22, 2019, as further amended by an eleventh amendment deed dated April 24, 2019, as further amended by a twelfth amendment deed dated October 29, 2020, as further amended by a thirteenth amendment deed dated November 8, 2021 and as subsequently amended, supplemented, varied or restated from time to time, among, *inter alios*, the Senior Secured Notes Issuer, the guarantors acceded thereto, the facility agent under the Senior Secured Term Loans Agreement, Barclays Bank plc, as security trustee, the Trustee, in its capacity as trustee under each of the Indentures and the Schuldschein Loan Trustee;
- all references to the “**Inventory Financing Facility**” are to an inventory financing facility described in “Description of Certain Indebtedness—Inventory Financing Facility”;
- all references to the “**Köln CoGen Facility**” are to a €120 million loan facility and a €60 million loan facility as further described under the caption “Description of Certain Indebtedness— Köln CoGen Facility”;
- all references to the “**LC Facility**” are to the on-demand letter of credit facility entered into by INEOS Treasury (UK) Limited on May 4, 2012 as may be amended, supplemented, varied or restated from time to time and as further described under the caption “Description of Certain Indebtedness—Letter of Credit Facility”;
- all references to “**Lux I**” are to INEOS Luxembourg I S.A., which is a direct subsidiary of IGH;
- all references to the “**March 2026 Senior Secured Notes**” and to the “**Senior Secured Notes due March 2026**” are to the €325,000,000 aggregate principal amount 3³/₈% Senior Secured Notes due 2026 issued pursuant to the March 2026 Senior Secured Notes Indenture;
- all references to the “**March 2026 Senior Secured Notes Indenture**” are to the indenture dated as of October 29, 2020 among INEOS Finance plc, as issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee, The Bank of New York Mellon (Luxembourg) SA/NV, as registrar, Luxembourg paying agent and transfer agent and Barclays Bank PLC, as security trustee, as amended and supplemented from time to time, pursuant to which the March 2026 Senior Secured Notes were issued;

- all references to the “**March 2026 Senior Secured Notes Proceeds Loan**” are to the loan advanced under the loan agreement, dated October 29, 2020, between INEOS Finance plc, as lender, and IHL, as borrower, pursuant to which the gross proceeds of the March 2026 Senior Secured Notes issuance were advanced to IHL, as amended or partially repaid from time to time;
- all references to the “**May 2026 Senior Secured Notes**” and to the “**Senior Secured Notes due May 2026**” are to the €770,000,000 aggregate principal amount 2⁷/₈% Senior Secured Notes due 2026 issued pursuant to the May 2026 Senior Secured Notes Indenture;
- all references to the “**May 2026 Senior Secured Notes Indenture**” are to the indenture dated as of April 24, 2019 among INEOS Finance plc, as issuer, the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee, The Bank of New York Mellon (Luxembourg) SA/NV, as registrar, Luxembourg paying agent and transfer agent and Barclays Bank PLC, as security trustee, as amended and supplemented from time to time, pursuant to which the May 2026 Senior Secured Notes were issued;
- all references to the “**May 2026 Senior Secured Notes Proceeds Loan**” are to the loan advanced under the loan agreement, dated April 24, 2019, between INEOS Finance plc, as lender, and IHL, as borrower, pursuant to which the gross proceeds of the May 2026 Senior Secured Notes issuance were advanced to IHL, as amended or partially repaid from time to time;
- all references to “**PetroChina**” are to PetroChina International (London) Company Limited or one or more of its affiliates, as the context may require;
- all references to the “**Rafnes Facility**” are to the €250 million facility agreement entered into on November 19, 2012 (and as amended from time to time including by an amendment and restatement agreement dated October 30, 2014 and an amendment, restatement and accession agreement dated November 8, 2019);
- all references to the “**Refining and Entrepreneurial JVs**” are to the Refining Business JV and the Entrepreneurial (Refining) Business JV, collectively;
- all references to the “**Refining Business**” are to the refining business, consisting principally of the crude oil refining operations carried out at the refineries located at Grangemouth, Scotland, and Lavéra, France, as reported on the historical financial statements of IGH under the Refining segment;
- all references to the “**Refining Business JV**” are to the joint venture that, following the Refining Divestiture, operates the Refining Business and is owned by PetroChina (49.9%) and INEOS Investments (50.1%);
- all references to the “**Refining Divestiture**” are to the disposal on July 1, 2011, by subsidiaries of Lux I of (i) the Refining Business and the Entrepreneurial (Refining) Business to joint ventures formed between PetroChina and INEOS Investments and (ii) the Infrastructure Entity to a joint venture formed by INEOS Investments (50.0%) and the Refining Business JV (50.0%);
- all references to the “**Schuldschein Loan**” are to the floating rate loan which has been made available under the Schuldschein Loan Agreement on March 26, 2019, as further described under the caption “Description of Certain Indebtedness—Schuldschein Loan”;
- all references to the “**Schuldschein Loan Agreement**” have the meaning ascribed to the term under the caption “Description of Certain Indebtedness— Schuldschein Loan”;
- all references to the “**Schuldschein Loan Trustee**” are to Wilmington Trust SP Services (Frankfurt) GmbH in its capacity as trustee under the Schuldschein Loan Agreement;
- all references to the “**Schuldschein Proceeds Loan**” are to the loans advanced under the loan agreement, dated March 26, 2019, between INEOS Finance plc, as lender, and IHL, as borrower, pursuant to which the gross proceeds of the Schuldschein Loan were advanced to IHL, as amended or partially repaid from time to time;

- all references to the “**Securitization Program**” are to the securitization program as further described under the caption “Description of Certain Indebtedness—Securitization Program”;
- all references to the “**Security Trustee**” are to Barclays Bank plc as security trustee under the Senior Secured Term Loans Agreement and the Senior Secured Notes Indentures and senior security agent under the Intercreditor Deed;
- all references to the “**Senior Secured Note Documents**” have the meaning ascribed to the term in the Intercreditor Agreement, including but not limited to the Senior Secured Notes Indentures;
- all references to the “**Senior Secured Notes**” are to the May 2026 Senior Secured Notes, the March 2026 Senior Secured Notes, the 2025 Senior Secured Notes and the Notes, collectively;
- all references to the “**Senior Secured Notes Issuer**” are to INEOS Finance plc;
- all references to the “**Senior Secured Notes Proceeds Loans**” are to the May 2026 Senior Secured Notes Proceeds Loan, the March 2026 Senior Secured Notes Proceeds Loan, the 2025 Senior Secured Notes Proceeds Loan and the Notes Proceeds Loan, together;
- all references to the “**Senior Secured Term Loans**” and to the “**Term Loans**” are to the credit facilities which have been made available under the Senior Secured Term Loans Agreement at the date of this annual report, as further described under the caption “Description of Certain Indebtedness—Senior Secured Term Loans”;
- all references to the “**Senior Secured Term Loans Agreement**” are to the credit agreement dated as of April 27, 2012, among, *inter alios*, INEOS Finance plc and INEOS US Finance LLC, as borrowers, certain subsidiaries of IGH, Barclays Bank PLC and certain lenders, as subsequently amended, supplemented, varied, novated, extended or replaced from time to time under one or more credit facilities;
- all references to the “**Senior Secured Term Loans Eurobond**” are to the eurobond entered into by IHL, as issuer, and INEOS US Finance LLC, as subscriber, pursuant to which INEOS US Finance LLC subscribed for bonds to the value of the gross proceeds of its borrowings under the Senior Secured Term Loans Agreement;
- all references to the “**Senior Secured Term Loans Euro Proceeds Loans**” are to the loans under the loan agreements entered into by INEOS Finance plc, as lender, and IHL, as borrower, pursuant to which INEOS Finance plc advanced the gross proceeds of its borrowings under the Senior Secured Term Loans Agreement;
- all references to the “**Senior Secured Term Loans Proceeds Loans**” are to the Senior Secured Term Loans Euro Proceeds Loans and to the Senior Secured Term Loans Eurobond;
- all references to “**subsidiaries**” are to all, whether operating or non-operating, the direct and indirect subsidiaries of IGH in the Group;
- all references to the “**Trustee**” are to The Bank of New York Mellon, London Branch in its capacity as trustee under the Indentures.

Unless otherwise stated, references to capacities of INEOS’s facilities refer to the “nameplate capacities,” or theoretical maximum production capacity of such facilities; the effective capacity of such facilities may, however, in fact be more or less than the nameplate capacity due to the current operating conditions and asset configuration of each facility.

All references to “**tonnes**” are to metric tonnes.

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.

FORWARD-LOOKING STATEMENTS

This annual report includes “forward-looking statements,” within the meaning of the U.S. securities laws and the laws of certain other jurisdictions, based on our current expectations and projections about future events, including:

- the cyclical and highly competitive nature of our businesses;
- our significant debt service obligations, as well as our ability to generate sufficient cash flow to service our debt;
- risks associated with our structure and our other indebtedness;
- our sales growth across our principal businesses and our strategy for controlling costs, growing margins, increasing manufacturing capacity and production levels, and making capital expenditures;
- our ability to deleverage through strategic disposals of certain assets and non-core businesses;
- raw material costs or supply arrangements;
- our technological and manufacturing assets and our ability to utilize them to further increase sales and the profitability of our businesses;
- impacts of climate change, including regulatory requirements relating to greenhouse gas emissions, the costs to purchase emissions allowances and the physical risks to our facilities and distribution networks from severe weather conditions;
- current or future health, safety and environmental requirements, including regulations relating to chemical safety and product stewardship, and the related costs of maintaining compliance with, and addressing liabilities under, those requirements;
- operational hazards, including the risk of accidents that result in injury to persons or environmental contamination;
- our ability to retain existing customers and obtain new customers;
- our ability to develop new products and technologies successfully;
- our ability to successfully integrate acquired businesses with our historical business and realize anticipated synergies and cost savings, including with respect to businesses acquired;
- currency fluctuations;
- our ability to attract and retain members of management and key employees;
- our relationship with our shareholders, affiliates and joint ventures;
- the outbreak of COVID-19 or other pandemics or epidemics; and
- general economic, social or political conditions.

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 “believe,” “expect,” “anticipate,” “may,” “assume,” “plan,” “intend,” “will,” “should,” “estimate,” “risk” and similar expressions or the negatives of these expressions are intended to identify forward-looking statements. 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.

HISTORICAL AND CURRENT MARKET AND INDUSTRY DATA

Historical and current market data used throughout this annual report were obtained from internal company analyses, consultants’ reports and industry publications. In particular, information has been provided by NexantECA Limited (“NexantECA”), an industry consultant. 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 this market data, we have not independently verified such 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 the INEOS Group Holdings S.A. audited financial statements for the year ended December 31, 2021, prepared in accordance with IFRS.

Risks Relating to Our Businesses and Industries

Cyclicality of the petrochemical industry—Changing market demands and prices may negatively affect our operating margins and impair our cash flows, which, in turn, could affect our ability to make payments on our debt or to make further investments in our businesses.

Cyclicality and volatility in supply and demand in the petrochemical industry may affect our prices and may negatively impact our operating margins and cash flows and cause us to incur losses. For example, if industry margins in the petrochemical industry were to return to their 2001 or fourth quarter of 2008 levels or decline more significantly than they have in the past, then this may result in a material adverse effect on our business, results of operations and cash flow. Any cyclical downturn may affect our prices and may negatively impact our operating margins and cash flows and cause us to incur losses. Furthermore, increased volatility in industry margins could have a significant impact on our short-term results. In such cases, we would have to absorb any losses or borrow additional funds. If we experience significant margin volatility or if we incur losses over a prolonged period and are unable to obtain additional funds, our liquidity could be materially adversely affected and our ability to make debt payments could be impaired.

The relationship between supply and demand in the petrochemical industry in general, and in our various petrochemical segments historically, has been highly cyclical. This is primarily because product supply is driven by alternating periods of substantial capacity additions and periods in which no or limited capacity is added. Historically, the markets for some of our products have tended to follow trends in economic growth and have experienced alternating periods of constrained supply, causing prices and margins to increase, followed by periods of capacity additions, resulting in oversupply and declining prices and margins. In response, companies typically reduce capacity or limit further capacity additions, eventually causing the market to be relatively undersupplied. Any slowdown in growth for any reason could have a disproportionately negative effect on industry margins for our petrochemical products. For a discussion of the current market environment, see “Operating and Financial Review and Prospects—Overview—Key Factors Affecting Our Results of Operation”.

Historically, margins in the petrochemical industry have been volatile due to a number of factors, most of which are beyond our control. These factors include:

- short-term utilization rate fluctuations due to planned and unplanned plant outages;
- political and economic conditions, which drive rapid changes in prices for our key feedstocks, including the price of crude oil, gas and naphtha;
- customers’ inventory management policies; and
- exchange rate fluctuations.

In addition, we and other petrochemical companies with large asset bases in Europe face pressures due to the fact that many of our key customers in Europe are subject to competition with low-cost producers in Asia. If our European customers are unable to successfully compete with Asian manufacturers, they could reduce their volume of purchases, including from us, or cease making such purchases altogether. To a lesser extent we are also exposed to the risk of our customers in North America being unable to compete in the global marketplace. Each of these risks could materially adversely affect our business, results of operations and financial condition.

Raw materials and suppliers—If we are unable to pass on increases in raw material prices, or to retain or replace our key suppliers, our results of operations may be negatively affected.

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 we require to make these products. The prices for a large portion of our raw materials are cyclical and are correlated closely to the prices of crude oil. Prices of oil 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; however prices have continued to rise in the second half of 2020 and throughout 2021.

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 our contractual arrangements and market conditions. There may be periods of time during which we are not able

to recover increases in the cost of raw materials due to our contractual arrangements or to weakness in demand for, or oversupply of, our products. Specifically, timing differences in pricing between raw material 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 prices decline, we may suffer decreasing profits if raw material price reductions occur at a slower rate than decreases in the selling prices of our products. In addition, when raw material costs decrease, customers may seek relief in the form of lower sales prices. Furthermore, some of our customers 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.

Climate change, and regulatory requirements related to addressing climate change, may result in supply chain disruptions, higher material and energy costs (as a result of environmental impacts from extraction and processing of raw materials), extreme weather events, extreme temperatures, or increased demand for limited resources, which may also impact our operations and sales, including profitability and customer retention.

We obtain a significant portion of our raw materials from selected key suppliers. If any of these suppliers is unable to meet its obligations under present supply agreements, we may be forced to pay higher prices to obtain the necessary raw materials and we may not be able to increase prices for our finished products. Therefore, volatility in raw material prices or interruptions in supply could place increased pressure on our margins and reduce our cash flow, which could impair our ability to make debt payments or make further investments in our business.

If we fail to maintain our relationships with our current suppliers, our suppliers offer pricing and other terms that are not satisfactory to us or a supplier fails to supply raw materials that meet our quality, quantity and cost requirements, 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.

Outbreaks of disease—The outbreak of 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 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 outbreak and how much more extensive it may become is unclear. The outbreak may lead to a disruption of our business. As of the date of this annual report, despite the availability of vaccines, government measures continue to be imposed and continued around the world as new strands of the COVID-19 virus have been discovered.

The adverse impacts the Group has or may experience due to COVID-19 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;
- 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
- cybersecurity issues, as digital technologies may become more vulnerable and experience a higher rate of cyberattacks in the current environment of remote connectivity due to stay-at-home orders

Although we experienced no significant impact from the pandemic in 2021 and do not currently expect any impact in 2022 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 pandemic or the occurrence of new disruptions could have an adverse effect on our business, liquidity, financial condition and results of operations.

As at the date of this annual report, 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 further economic impact of COVID-19 will depend on the continuing spread of the virus 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 pandemic situation 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 on the Group's operational and financial performance will depend on future developments, including the duration, spread and intensity of the outbreak and new 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.

Global economy—Our industry is affected by global economic factors including risks associated with a recession and our customers' access to credit.

We face risks attendant to changes in consumer demand for goods that incorporate our products, economic environments, changes in interest rates and instability in securities markets around the world, among other factors. In particular, a worsening economic climate can result in decreased industrial output and decreased consumer demand for products including automobiles, consumer goods and building materials, all of which incorporate our products. 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.

Our financial results are substantially dependent upon the overall economic conditions in the United States, Europe and 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. For example, during 2020 as a result of the COVID-19 pandemic, margins and volumes were adversely impacted across all regions, as numerous countries experienced lockdowns resulting in lower market demand. As a result of an economic downturn, in 2008 and 2009, we experienced decreased demand for many of our products. Moreover, many of our customers rely on access to credit to adequately fund their operations. The inability of our customers to access credit facilities may adversely affect our business by reducing our sales, increasing our exposure to accounts receivable bad debts and reducing our profitability.

Currency fluctuations—We are exposed to currency fluctuation risks in several countries that could adversely affect our profitability.

Although we report our results in euro, we conduct a significant portion of our business in countries that use currencies other than the euro, and we are subject to risks associated with currency fluctuations.

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 transaction effects when one of our subsidiaries incurs costs or earns revenue in a currency different from its functional currency. Fluctuations in exchange rates may also affect the relative competitive position of our manufacturing facilities, as well as our ability to market our products successfully in other markets. We are exposed to currency fluctuation when we convert currencies that we may 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 and our selling, general and administrative expenses are incurred in currencies other than the euro, principally the U.S. dollar and the British pound, reflecting the location of our sites and corporate and business support centers. At the same time, although many of our sales are invoiced in currencies other than the euro, our consolidated revenues are reported in euro. Therefore, our financial results in any given period are materially affected by fluctuations in the value of the euro relative to the U.S. dollar, British pound and other relevant currencies. If the value of the euro declines against currencies in which our obligations are denominated or increases against currencies in which our revenues are denominated, our results of operations and financial condition could be materially affected.

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 2019 when the value of the U.S. dollar relative to the euro increased, before decreasing at the end of 2020 and before increasing again in 2021.

International operations—We are exposed to risks related to conducting operations in several different countries.

We currently have manufacturing facilities located in the United Kingdom, the United States, Germany, Belgium, Norway and Canada. Notwithstanding the benefits of geographic diversification, our business is subject to risks related to the differing legal, political, social and regulatory requirements and economic conditions of many jurisdictions. Risks inherent in international operations include the following:

- general economic, social or political conditions in the countries in which we operate could have an adverse effect on our earnings from operations in those countries;
- risk of a widespread outbreak of an illness or other public health crisis, such as the ongoing COVID-19 outbreak, the timing and nature of which may differ across the various jurisdictions in which we operate (see also “—Outbreaks of disease—The outbreak of contagious diseases may have a material adverse effect on our business, results of operations, financial condition and cash flows.”);
- compliance with a variety of laws and regulations in various jurisdictions may be burdensome;
- unexpected or adverse changes in laws or regulatory requirements in various jurisdictions may occur;
- the imposition of withholding taxes or other taxes or royalties on our income, or the adoption of other restrictions on foreign trade or investment, including currency exchange controls;
- adverse changes in export duties, quotas and tariffs and difficulties in obtaining export licenses;
- intellectual property rights may be more difficult to enforce;
- transportation and other shipping costs may increase;
- staffing difficulties, national or regional labor strikes or other labor disputes;
- the imposition of any price controls;

- difficulties in enforcing agreements and collecting receivables; and
- volatility of foreign exchange rates.

In addition, as we increase our footprint into new territories such as Asia, our business may be exposed to further economic and geopolitical risks as well as political and social instability which may adversely affect our business, financial condition, results of operations and cash flows. Furthermore, certain markets in which we may operate in the future are emerging markets that are rapidly developing and differ from the economies of most developed countries in material respects, including the macroeconomic challenges they face, the rapidly evolving nature of their financial and legal systems and the extent of government involvement. Operating in these markets presents certain risks, including political and economic instability, the inability to protect contractual or legal rights, market volatility and liquidity, rapid demographic and market changes, evolving laws and regulations in respect of the chemical industry, potential expropriation or nationalization of property or assets, and comparatively underdeveloped legal, financial and enforcement systems.

Competition—We face significant competition in our industries, whether through efforts of new or current competitors or through consolidation of existing customers, which may adversely affect our competitive position, sales and overall operations.

The markets for most of our products are highly competitive. We are exposed to the competitive characteristics of several different geographic markets and industries. Competition in most of our industries is based primarily on price and, to a lesser extent, on product performance, product quality, product deliverability and customer service. Our principal competitors vary from business to business and range from large global petrochemical companies to numerous smaller regional companies. Some of our competitors are larger and more vertically integrated than we are and therefore may be able to manufacture products more economically than we can. In addition, some of our competitors have greater financial, technical, research and technology and marketing resources than we do. Furthermore, some of our competitors are fully or partially state-owned and could have broader goals than maximizing profits, such as investing in the economies of their respective countries and providing local employment and therefore may continue to provide capacity and products even at unprofitable price points creating downward pricing pressure on our products. As the markets for our products expand, we expect that existing competitors may commit more resources to the markets in which we operate, further enhancing competition. All of the above could hinder our ability to compete effectively in the markets in which we operate in the future and our competitive position and results of operations may suffer as a result. For example, in the petrochemical industry in Europe, where the majority of our petrochemical assets are concentrated, and, to a lesser extent, in North America, we face competitive pressures from companies with facilities in the Middle East, which enjoy substantial cost advantages due to access to low-cost gas feedstock available in this region. In addition, our export business in Europe faces competitive pressures from export businesses in North America (including our own North American operations) due to the abundance and use of low-cost ethane in North America. These cost advantages are particularly significant when oil prices are high, as has sometimes been the case in recent years. The competitive pressure we experience could be exacerbated if the Chinese economy fails to grow as expected, in which case more of the product manufactured in the Middle East to meet the growth expected in China could be redirected to Europe and North America, potentially resulting in greater supply to these markets and corresponding downward pricing pressure.

In addition, a number of our customers are participants in industries that are undergoing consolidation. We could lose these customers to competitors if they are acquired by, or consolidate with, other companies that have relationships with our competitors.

Customers—We are subject to the risk of loss resulting from nonpayment or nonperformance by our customers.

Our credit procedures and policies may not be adequate to minimize or mitigate customer credit risk. 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 weakness 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, results of operations, financial condition and liquidity.

Refining Divestiture—We are dependent on contractual arrangements with the Refining and Entrepreneurial JVs for naphtha and if we are unable to obtain this feedstock from these entities, our businesses could be adversely affected.

On July 1, 2011, we disposed of the Refining Business and the Entrepreneurial (Refining) Business to the Refining and Entrepreneurial JVs. In addition, we disposed of the Infrastructure Entity to the Refining Business JV (50.0%) and INEOS Investments (50.0%). See “Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture” for a more detailed discussion of the Refining Divestiture.

We have entered into several contractual arrangements with the Refining and Entrepreneurial JVs to allow the INEOS Group to continue to receive the requisite feedstocks and access to entrepreneurial activities and utilities services. However, there is no guarantee that (i) the Refining and Entrepreneurial JVs will deliver the requisite feedstocks or access to entrepreneurial activities or utilities services, set forth in the contractual arrangements, (ii) we will be able to find other suppliers to cover any shortfalls in the feedstock supplies, entrepreneurial activities or utilities services that we require and (iii) any agreements we enter into with other suppliers will be on terms as favorable as those under the agreements that have been executed with the Refining and Entrepreneurial JVs. See “Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture.”

To ensure that the companies in the INEOS Group retain access to the naphtha feedstock provided by the Refining and Entrepreneurial JVs, we have entered into a long-term agreement with the Refining and Entrepreneurial JVs for the continued provision of the naphtha supply that we have historically received from the Refining Business, on substantially similar commercial terms as those that governed the inter-INEOS Group transfer for the supply of naphtha previously.

Acquisition of DEA UK, certain subsidiaries of Fairfield Energy and DONG Energy A/S Oil & Gas business by INEOS Upstream Limited—We face a risk of loss if INEOS Upstream Holdings Limited is unable to repay the loans extended to the related party.

INEOS Upstream Limited has acquired natural gas assets in the North Sea from a U.K. subsidiary of DEA Deutsche Erdoel AG, which is part of the LetterOne Group and from Fairfield Energy (collectively, the “**2015 Upstream Acquisitions**”) by way of acquiring certain of its subsidiaries. INEOS Upstream Limited is a wholly-owned, oil and gas subsidiary of INEOS Limited, thereby making it an affiliate of ours. In connection with the 2015 Upstream Acquisitions, the Group advanced a loan of \$623.7 million to INEOS Upstream Limited, the proceeds of which have been on-lent to certain of its subsidiaries. Following a corporate reorganization, this loan has been novated to INEOS Upstream Holdings Limited. The loan is unsecured and matures in June 2024.

On September 29, 2017, INEOS Upstream Limited acquired further natural gas assets in the North Sea through its acquisition of the entire oil and gas business of DONG Energy A/S (the “**DONG Acquisition**”). In connection with the DONG Acquisition, the Group advanced a loan of \$376.2 million to INEOS Upstream Limited, the proceeds of which were on-lent to certain of its subsidiaries. Following a corporate reorganization, this loan has been novated to INEOS Upstream Holdings Limited. The loan is unsecured and matures in June 2024.

As at December 31, 2021, the total aggregate amount outstanding on the 2015 Upstream Acquisition loan and the DONG Acquisition loan was \$617.1 million (€544.6 million).

In the event that INEOS Upstream Holdings Limited is unable to repay the 2015 Upstream Acquisitions loan or the DONG Acquisition loan, the Group will suffer losses as a result.

Inability to maximize utilization of assets—We may be adversely affected if we are unable to implement our strategy to maximize utilization of assets.

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 strategy of maximizing utilization of assets in accordance with our plans or at all. 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.

Joint ventures—Some of our petrochemical facilities are owned and operated in joint ventures with third parties. We do not control these joint ventures, and actions taken by our joint venture partners in respect of these joint ventures could materially adversely affect our business.

Some of our petrochemical facilities are owned and operated in whole or part by joint ventures with one or more third parties. These facilities include Cedar Bayou in Texas, which is operated by Chevron Phillips Chemical Company LLC (“**Chevron Phillips**”) in a 50/50 joint venture with Chevron Phillips. While we have a certain amount of influence over each of these joint ventures, we do not control them and are therefore dependent on our respective joint venture partners to cooperate with us in making decisions regarding the relevant joint venture. Moreover, the day-to-day operation of the relevant facilities is the responsibility of the management team of the joint venture or our joint venture partner. Therefore, our ability to influence these operations on a day to day basis is limited and we may be unable to prevent actions that we believe are not in the best interests of our joint ventures or our Group as a whole. Any such actions could materially adversely affect our business, results of operations and financial condition.

Climate change—Existing and proposed regulations to address climate change by limiting greenhouse gas emissions may cause us to incur significant additional operating and capital expenses.

Our operations result in emissions of greenhouse gases (“**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. 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 use of alternative fuels, which could increase our production 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 GHGs addressed by the Kyoto Protocol. Although the United States is not a party to the Kyoto Protocol at this time, all member states of the European Union 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 Agreement is adopted by those individual countries within their respective national or federal law. 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 European Union Emissions Trading System (the “**EU ETS**”), an EU-wide system imposing emissions limits and permitting 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 2021, our costs to purchase emissions allowances under the EU ETS totaled approximately €30 million and annual costs are expected to be similar for 2022, although this is subject to the cost of the allowances which may fluctuate.

In line with the EU’s goal of achieving carbon neutrality by 2050 and a 55% emissions reduction 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 CO₂ 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, cement, iron and steel, aluminium, fertilisers and electricity) 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 proposals are subject to the EU legislative process, including adoption 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**”) (see “—Referendum and United Kingdom withdrawal from the European Union” below). 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 recently adopted by the European Commission. In addition, the United Kingdom is no longer a participant in the EU ETS. In January 2021, the UK 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 UK has been formalized. In addition, as a result of the Paris Agreement, in June 2019, the UK 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 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 Best Available Techniques (“**BAT**”), to competent authorities in the UK 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 UK will continue to operate under the legislative framework applied in the UK. In November 2021, legislation to make provision about targets, plans and policies for improving the natural environment and certain other matters, including provisions relating to air quality (the “**Environment Act**”) was passed into law in the United Kingdom.

In the United States, we are required to monitor and report to the U.S. Environmental Protection Agency (“**EPA**”) annual GHG emissions from certain of our U.S. facilities. In addition, EPA 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 United States, 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 gas 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 European Union), 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. For example, in August 2015, EPA released a final version of the Clean Power Plan (“**CCP**”), which seeks to reduce GHG emissions from power plants. On June 19, 2019, EPA issued the Affordable Clean Energy (“**ACE**”) rule to replace the CPP. The ACE rule established emissions guidelines for states to use in developing plans to address GHG emissions from existing coal-fired power plants, focusing on heat rate improvements to define the “best system of emission reductions” and unit-specific standards of performance. In January 2021, the ACE rule was vacated by a U.S. court on the grounds that it exceeded the EPA’s authority. 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 making climate change central to U.S. policy and setting out several administrative undertakings. 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. It is still too early to determine the specific actions the federal government will take to implement these orders and commitments, but requirements arising from regulations or other initiatives designed to control or limit GHG emissions could have a material adverse impact on our business, financial condition or results of operations, including by reducing demand for our products.

Environmental matters—We will have ongoing costs and may have substantial obligations and liabilities arising from health, safety, security and environmental (“HSSE”) laws, regulations and permits applicable to our operations.

Our businesses 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 our operations, including the manufacture, storage, handling, treatment, transportation and disposal of hazardous substances and wastes, water consumption and 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, 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 ensure compliance with current and future HSSE laws, regulations and permits or the enforcement of such requirements.

We expect that our operations will be subject in the future to new and increasingly stringent HSSE laws, regulations and permit conditions and that substantial costs will be incurred by us to ensure continued compliance. We anticipate that these laws, regulations and permit conditions will continue to require us to incur substantial costs and impose additional operating and capital obligations. We currently anticipate, based on preliminary estimates, that we will spend approximately €25-30 million over a 10-year period to upgrade the wastewater treatment facilities at our Antwerp facility to comply with industrial wastewater discharge requirements, increase treatment capacity and decrease the facility’s total water usage by implementing a circular economy for process water. 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, cleanup 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. 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 unanticipated 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 noncompliance with HSSE laws and/or the permits which authorize operations at these sites. Some of these allegations or instances of noncompliance 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.

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 and remediate releases of hazardous materials or contamination at or migrating from certain of these sites, as well as properties we formerly owned, leased or operated. We are, and in the future may be, responsible for investigating and cleaning up contamination at off-site locations where we or our predecessors disposed of or arranged for the disposal or treatment of hazardous wastes. Under some environmental laws, including the U.S. Comprehensive Environmental Response, Compensation, and Liability Act, commonly referred to as “Superfund,” liability can be imposed retroactively, without regard to fault or knowledge, and on a joint and several basis. In addition, 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, or the imposition of new obligations to investigate or remediate contamination at our facilities, could result in substantial unanticipated costs. We

could be required to establish or substantially increase 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 unanticipated 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 operations involve significant water usage, with annual industrial water costs of approximately €60 million in 2021 and similar costs are expected to be incurred in 2022 and 2023. Changes to relevant environmental regulations and other factors, such as water shortages as a result of climate change, could increase the cost 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. Although we believe that the indemnities given by the selling parties from whom we have acquired assets or businesses will help defray the costs associated with pre-acquisition environmental liabilities, 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.

Potential hazards—Our operations are subject to hazards which could result in significant liability to us.

Our operations are subject to hazards associated with chemical manufacturing and the related use, storage, transportation and disposal of raw materials, products and wastes. These hazards include explosions, fires, severe weather (including but not limited to floods, hurricanes on the U.S. Gulf Coast or in Gulf waters or other adverse weather that may be increasing as a result of climate change) and natural disasters, accidents, mechanical failures, discharges or releases of toxic or hazardous substances or gases, transportation interruptions, human error, pipeline leaks and ruptures and terrorist activities. These hazards can cause personal injury and loss of life, severe damage to or destruction of property and equipment as well as environmental damages, and may result in suspension of operations and the imposition of civil and criminal liabilities, including penalties and damage awards. While we believe our insurance policies are in accordance with customary industry practices, such insurance may not cover all risks associated with the hazards of our business and is subject to limitations, including deductibles and maximum liabilities 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. In addition, from time to time, various types of insurance for companies in our industries have not been available on commercially acceptable terms or, in some cases, have not been available at all. In the future, we may not be able to obtain coverage at current levels, and our premiums may increase significantly on coverage that we maintain. Costs associated with unanticipated events in excess of our insurance coverage could have a material adverse effect on our business, competitive or financial position or our ongoing results of operations. For additional related disclosure, see “Business—Health, Safety, Security and Environment.”

Third parties—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. For example, many of our vendors and subcontractors have operations that are also subject to HSSE risks associated with the use 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 incidents or events, including protests, caused by third parties, our reputation, business and results of operations may be adversely affected.

Product stewardship regulation—Our business could be adversely affected by chemical safety regulation of our products and raw materials.

We use and manufacture hazardous chemicals that are subject to regulation by the European Union and by many national, provincial and local governmental authorities in the countries in which we operate. In order to obtain regulatory approval of certain new products and production processes, we must, among other things, 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.

In addition, some of our products (including our raw materials) are subject to extensive environmental and industrial hygiene regulations that require the registration and safety analysis of and, in some cases, impose restrictions on, their component substances. For example, in connection with the European Union's Registration, Evaluation and Authorization of Chemicals ("REACH") Regulation or the European Union's Classification, Labelling and Packaging ("CLP") Regulation, any key raw material, chemical or substance, including some of 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 workers handling these 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. We manufacture, process, or use a number of substances classified as substances of very high concern under REACH, and the continued use of these substances may require authorization from the European Chemicals Agency ("ECHA"). If we cannot obtain authorization, we may need to discontinue use of such substances.

In June 2016, amendments to the U.S. Toxic Substances Control Act ("TSCA") became law, and it is possible that they could result in risk screening by EPA 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. On December 19, 2016, EPA published a list of ten chemical substances that are the subject of EPA's initial chemical risk evaluations, as required by TSCA. This list includes multiple chemicals we manufacture, including carbon tetrachloride and methylene chloride. In order to prioritize additional chemicals for risk evaluations, in 2019, EPA designated 20 chemical substances as high-priority and 20 chemical substances as low-priority. These designations include 1,3-butadiene that we manufacture.

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. Similar regulations are being considered in other jurisdictions, including the United States, which could result in additional requirements, including notification, testing, labelling and record-keeping obligations, on our operations.

We are further subject to emerging laws and regulations governing workplace exposure to certain

chemicals. For example, benzene has been identified as a genotoxic carcinogen. ECHA's Committee for Risk Assessment ("RAC") recently proposed reducing the occupational exposure limit ("OEL") for benzene to .05 ppm as the maximum allowable concentration in air at workplaces in the European Union. In response, the EU Commission published its proposal for the fourth revision of the Carcinogenic and Mutagenic Directive ("CMD"), which sets out a revised OEL for benzene of 0.5ppm two years after publication and 0.2ppm four years after publication; these proposals will now be discussed at the EU Council and Parliament. RAC also proposed a new OEL of 0.45 ppm for acrylonitrile, a monomer used in many plastics. Because we produce benzene and acrylonitrile, we would become subject to these OELs, if enacted. As another example, butadiene has been classified as a known human carcinogen by the International Agency for Research on Cancer, the U.S. National Toxicology Program and EPA. The U.S. Occupational Safety and Health Administration currently limits the permissible employee exposure to butadiene. If studies on the health effects of butadiene result in additional regulations in the United States 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.

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

A failure to understand, manage and provide greater transparency of our exposure to environmental, social and governance (ESG) related risks may have increasingly adverse implications for us and our stakeholders.

ESG-related risks may directly or indirectly impact our business and the achievement of our strategy and consequently those of our key stakeholders, which range from our employees, customers, investors and suppliers, to policymakers, regulators, industry organizations and local communities. A failure to transparently and consistently implement our ESG strategy across our business may adversely impact our financial condition and reputation and may negatively impact our stakeholders, who all have expectations, concerns and aims related to ESG matters, which may differ, both within and across the markets in which we operate. For more information on our ESG strategy see, "Business—Sustainability".

Increasing scrutiny and changing expectations from investors, lenders and other market participants with respect to ESG performance and policies may impose additional costs on us or expose us to additional obligations or risks.

Companies across all industries are facing increasing scrutiny related to ESG issues, including those relating to sustainable development, renewable resources, environmental stewardship, supply chain management, climate change, diversity and inclusion, workplace conduct, employee well-being, human rights, philanthropy and support for local communities. Investor advocacy groups, certain institutional investors, investment funds, lenders, employees and other market participants are increasingly focused on ESG practices, performance and disclosures and, in recent years, have placed increasing importance on the environmental and social cost and impact of their investments, and the petrochemicals industry in particular faces ESG risks that other industries do not. The increased focus and activism related to ESG and similar matters may hinder access to or increase the cost of capital, as investors and lenders may decide to reallocate capital or to not commit capital as a result of their assessment of a company's ESG practices. While we have made certain commitments with respect to ESG performance, such as our commitment to have Net Zero emissions by 2050, if we fail to meet applicable standards or expectations with respect to these issues across all of our operations and activities, including voluntary commitments we may make, our reputation and brand image could be damaged, we may lose the trust of our stakeholders (including investors, customers and employees), and our business, financial condition and results of operations could be adversely impacted. In addition, while we seek to report our ESG practices and performance in alignment with certain relevant reporting frameworks and to engage with leading sustainability rating agencies and other stakeholders, these frameworks and ratings providers may not be the same as those evaluated by our stakeholders, may emphasize different aspects of ESG practices and performance, or may not accurately reflect our ESG performance in certain respects. In addition, changes in consumer and market demands, regulatory requirements and other ESG-related considerations may negatively impact our performance on key ESG indicators or otherwise impact our reputation and accordingly our business and financial results.

The third-party ESG Rating referenced in this annual report may not accurately reflect our risks based on environmental, social and governance matters. Any actual or perceived lack of transparency or underperformance regarding ESG matters as a result of increasing scrutiny and changing expectations from investors, lender and other market participants may adversely affect the value of our securities and other debt instruments.

The impact of our ESG-related risks and practices, including with respect to various environmental, social and governance matters in our business and in the local communities in which we operate, has been and will continue to be independently assessed by non-accredited ratings organizations and various stakeholders in the ESG community. These rating agencies and stakeholders may not view our ESG policies as being sufficiently transparent or consistent with their performance standards or goals. If this view were shared in the broader ESG community, our reputation could be damaged which, in certain cases, could effectively limit our access to capital markets and result in scrutiny regarding our commitment to ESG principles and standards.

In addition, ESG ratings may vary among the different ESG ratings organizations and are subject to differing methodologies, assumptions and priorities used by such organizations to assess ESG performance and risks. Each ESG rating provider's rating should be evaluated independently of any other ESG rating provider's rating. There is no guarantee that the methodology used by any particular ESG rating provider will conform with the expectations or requirements of any investor or any present or future applicable standards, recommendations, criteria, laws, regulations, guidelines or listing rules. As a result, our ESG ratings are not necessarily indicative of our current or future operating or financial performance, our commitment to ESG standards and principles, or any future ability to service our indebtedness and are only current as of the dates on which they were issued. Any ESG rating obtained by the Group provides no guarantee as to the actual environmental and/or social impacts of the Group. In addition, individual company ratings may be based on only publicly available information and in other cases may be based on information supplied by the relevant companies. As such, the quality of information in respect of each company included in our rankings may not be comparable and there may therefore be limitations on the utility of these rankings. Investors must determine for themselves the relevance of any such ESG rating information contained in this annual report or elsewhere. Moreover, ESG ratings are not a recommendation by us or any other entity or person to buy, sell or hold any securities or other debt instruments. As of the date of this annual report, Sustainalytics, which has provided an ESG rating for INEOS Group Holdings S.A. as disclosed in "Business—Sustainability—ESG Risk Rating", is not subject to any regulatory or other governmental oversight in respect of its determination of ESG ratings or the underlying methodologies it uses to make such determinations and may revise or replace entirely the methodology it applied to derive its ESG ratings. No assurance can be given that the rating will remain constant for any given period of time or that the rating will not be lowered or withdrawn entirely by Sustainalytics if, in its judgment, circumstances in the future so warrant. The past or future issuance of any ESG ratings which reflect low performance on ESG matters or high ESG-related risk, or are not consistent with our own views on our commitment to implement ESG principles and standards throughout our business and our commitment to our business and local communities as an ESG company, could adversely affect the value of an investment in our securities or other debt instruments.

Litigation—We are subject to certain risks related to litigation filed by or against us, and adverse results may harm our business.

We cannot predict with certainty the cost of defense, the cost of prosecution 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. Litigation and other proceedings may include, but are not limited to, actions relating to intellectual property, commercial arrangements, environmental, health and safety, joint venture agreements, labor and employment or other harms resulting from the actions of individuals or entities outside of our control. 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 and 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 matters or human exposure to hazardous substances in the workplace or from our products could result in significant liability for us. Adverse outcomes could have a material adverse effect on our business.

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

The sale of our products involves the risk of product liability claims arising out of the use of, or exposure to, our products or the chemicals in them. While most of our products have some hazardous properties,

some of them, such as acrylonitrile, require specialized handling procedures due to their acute and chronic toxicity. Furthermore, our polymer products have widespread end uses in a variety of consumer industries, including food packaging and medical applications. A successful product liability claim or series of claims against us in excess of our insurance coverage for payments for which we are not otherwise indemnified or have not otherwise provided for could have a material adverse effect on our business, financial condition or results of operations and cash flows. In particular, we could be required to increase our debt or divert resources from other investments in our business in order to discharge any such claims.

In addition, we have licensed our polyethylene, polypropylene, polystyrene, polyvinylchloride, vinyl chloride monomer, ethylene dichloride and acrylonitrile technologies to third parties. Generally, our licensing agreements provide that any liability arising from the implementation of such technology is retained by us during the first 18 months of the agreements. As a result, we are liable for any damages arising from the implementation by our licensees of our technology during this period.

Key personnel—Our success depends on the continued service of certain key personnel.

Our success depends in significant part upon the continued service of our shareholders, directors and senior management, including James A. Ratcliffe, Andrew Currie and John Reece and the executive officers at each of our business divisions. In addition, our future growth and success also depends on our ability to attract, train, retain and motivate skilled managerial, sales, administration, operating and technical personnel. We generally do not have employment agreements with, and we do not maintain any “key man” life insurance for, any member of our senior management. The loss of one or more of our key management or operating personnel, or the failure to attract and retain additional key personnel, could have a material adverse impact on our business, financial condition and results of operations.

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

As of December 31, 2021, we employed approximately 7,300 people (measured as full-time equivalents (“FTEs”)) in our operations around the world, not including employees of our joint ventures. The majority of our employees are unionized. In addition, a majority of our employees reside in countries in which employment laws provide greater bargaining or other rights to employees than the laws of the United States. These employment rights may require us to expend greater time and expenses in altering or amending employees’ terms of employment or making staff reductions. For example, most of our employees in Europe are represented by works councils which generally must approve changes in conditions of employment, including salaries and benefits. Further, a labor disturbance or work stoppage at any of our facilities as a result of any changes to our employment terms and conditions or for any other reason could have a material adverse effect on that facility’s operations and, potentially, on our business, results of operations and financial condition.

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

Proprietary protection of our processes, apparatuses and other technology 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 to ours. For example, 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 advantage. In addition, the laws of many foreign countries do not protect our intellectual property rights to the same extent as the laws of the United States and the United Kingdom. Furthermore, any pending patent application filed by us may not result in an issued patent, 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 or proprietary know-how could result in intense competition, with consequent erosion of profit margins. In addition, our competitors and any other third parties may obtain patents that restrict or preclude our ability to lawfully manufacture and market our products in a competitive manner, which could materially adversely affect our business, results of operations and financial condition.

Some of our patents and patent applications are jointly owned with third parties. In many countries,

both owners have full rights under a jointly-owned patent. In the absence of a specific agreement, such third parties may use our jointly-owned patents to compete with us or grant a license to our competitors. In addition, co-owners may not cooperate with us to enforce or to defend a jointly-owned patent where necessary to protect our rights.

We also rely upon unpatented proprietary know-how and continuing technological innovation and other trade secrets 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;
- such agreements 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, there is no material pending litigation against us regarding any intellectual property claim but we cannot assure you that there will not be future claims. Such claims, regardless of 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 manufacture of products using the contested intellectual property and our business, financial condition and operating results could be adversely affected if any such products are material to our business.

We may also initiate lawsuits to defend the ownership of our inventions and our intellectual property. Like defending against litigation, initiating litigation relating to intellectual property rights is costly and may divert technical and management personnel from their normal responsibilities. Furthermore, we may not prevail in any such litigation or proceeding. A determination in an intellectual property litigation or proceeding that results in a finding of a non-infringement by others to our intellectual property or an invalidation of our patents may result in the use by competitors of our technologies or processes and sale by competitors of products that resemble our products, which may adversely affect our ability to compete as well as create increased supply and corresponding downward pricing pressure.

Cyber security—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. 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 that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of proprietary and other information, or other disruption of business operations. 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. Further, the General Data Protection Regulation (Regulation (EU) 2016/679), came into effect in Europe in May 2018, which has created a range of new compliance obligations, and increased financial penalties for non-compliance significantly. The General Data Protection Regulation (Regulation (EU) 2016/679) has been incorporated into domestic law in the United Kingdom, with minor amendments, by virtue of the EUWA. Further, increased reliance on technology carries with it an increased risk of cybersecurity 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.

Internal controls—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 controls 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 consolidated financial information in conformity with applicable accounting principles. We design our internal controls through the use of internal resources, external consultants and, as the case may be, with joint venture partners.

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 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. Any failure to maintain adequate internal controls or to be able to produce accurate consolidated financial information on a timely basis could increase our operating costs and materially impair our ability to operate our business.

Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, and the Indentures—Our Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Existing Indentures impose, and the Indenture will impose, significant operating and financial restrictions, which may prevent us from capitalizing on business opportunities and taking certain actions.

Our Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Indentures impose significant operating and financial restrictions on us. These restrictions include limitations on our ability to:

- make investments and other restricted payments, including dividends;
- incur additional indebtedness;
- sell our assets or consolidate or merge with or into other companies;
- enter into joint ventures; and
- make capital expenditures.

Our Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Indentures contain covenants that may adversely affect our ability to finance our future operations and capital needs and to pursue available business opportunities. A breach of any of these covenants could result in a default in respect of the related debt. If a default were to occur, the relevant holders or the relevant lenders (as applicable) of such debt could elect to declare the debt, together with accrued interest and other fees, immediately due and payable and, subject to certain limitations, proceed against any Collateral securing that debt. Refer to “Description of Certain Indebtedness” for further information.

Future acquisitions or developments—Any future acquisitions or developments may prove difficult for us to consummate.

We have a history of making acquisitions and in the future we may acquire companies or assets engaged in similar or complementary businesses to our own if we identify appropriate acquisition targets, including acquisitions of interests from our joint venture partners. In addition, we also intend to organically grow our business. INEOS announced its major capital investment in Antwerp, Belgium on January 14, 2019 (“**Project ONE**”) consisting of a new Ethane Steam Cracker and a Propane Dehydrogenation Unit, for the production of ethylene and propylene, respectively, along with associated utilities, tankage and infrastructure. Following a strategic review in 2020, INEOS has determined that the demand for propylene in the quantities previously envisaged was less urgent. As a result, Project ONE was rescope to only consist of an ethane steam cracker with a nameplate capacity of approximately 1,450 kta and associated utilities, tankage and infrastructure. Any additional European propylene capacity will be considered separately in the future.

INEOS has selected Technip to provide the operating technology for the new ethane cracker. Project One remains the largest investment in the European chemicals industry for the past 20 years and we expect it to

be the most environmentally-friendly of its kind. It is planned to be equipped with the best available technologies with very high efficiency in use of raw materials and energy, CO₂ emissions that are expected to be less than half of the best performing similar units in Europe from the outset and a clear path to carbon neutrality on a Scope 1 and Scope 2 basis within 10 years after startup. Latest estimates suggest that the project will represent a capital investment of approximately €3 to 4 billion largely funded by debt secured on the Project ONE assets. The plant is anticipated to be completed by the end of 2026. The project is expected to make a final investment decision in the first quarter of 2022.

Our ability to start construction of Project ONE is dependent on our receiving an executable permit from the Flanders authorities. We received our permit award in December 2021 but are currently awaiting the results of an appeals process which we expect to result in our ability to start construction in the summer of 2022. The success of the project and the ability to complete it within the expected budget and schedule will depend in part on us adequately addressing any technical, regulatory, environmental, labor or other issues that may arise in connection with building such a mega project. We may be required to make significant additional capital expenditure beyond that planned or exceed the anticipated timeframe for Project ONE in order to resolve these issues. However, there can be no assurance that the project will be completed or that it would be completed at the anticipated cost or within the indicated timeframe. We may not be able to successfully implement our strategic and operational initiatives for Project ONE, and an inability to realize the full extent of anticipated benefits could have a material adverse effect on our business, financial condition and results of operations.

However, restrictions in the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Indentures may limit or preclude our ability to make certain acquisitions or capital expenditures. Further, we may use debt financing for any permitted acquisitions or capital expenditures, which would increase our debt service requirements. In order to manage any acquisitions or development projects we successfully complete, we will need to expand and continue to improve our operational, financial and management information systems. If making acquisitions or integrating any acquired business or development projects divert too much management attention from the operations or our core businesses, this could adversely affect our financial condition and results of operations. Any acquisition or development project that we make could be subject to a number of risks, including, as applicable:

- problems with effective integration of operations;
- the inability to maintain key pre-acquisition business relationships;
- increased operating costs;
- costs related to achieving or maintaining compliance with laws, rules or regulations;
- the loss of key employees of the acquired company;
- exposure to unanticipated liabilities; and
- difficulties in realizing projected efficiencies, synergies and cost savings.

We cannot assure you that any acquisition or development project we consummate will ultimately provide the benefits we originally anticipate. 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 venture or Unrestricted Subsidiaries will not be bound by the covenants in the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Indentures (including with respect to limitations on indebtedness and restricted payments, including dividends).

Credit and capital market conditions—Adverse conditions in the credit and capital markets may limit or prevent our ability to borrow or raise capital.

While we believe we have facilities in place that should allow us to borrow or otherwise raise funds as needed, adverse conditions in the credit and financial markets could prevent us from obtaining financing, if the need arises. Our ability to invest in our businesses and refinance maturing 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, we could experience a material adverse effect on our financial position

or results of operations.

Pension plans—Significant changes in pension fund investment performance or assumptions relating to pension costs may adversely affect the valuation of pension obligations, the funded status of pension plans, and our pension cost.

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. Our pension cost is materially affected by the discount rate used to measure pension obligations, the level of plan assets available to fund those obligations at the measurement date and the expected long-term rate of return on plan assets. Significant changes in investment performance or a change in the portfolio mix of invested assets may result in corresponding increases and decreases in the valuation of plan assets, particularly equity securities, or in a change of the expected rate of return on plan assets. 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 specified funding levels. Any decrease in interest rates will result in an increase of pension liabilities. Our pension plans are subject to legislative and regulatory requirements of applicable jurisdictions.

Eurozone—Market perceptions concerning the instability of the euro, the potential re-introduction of individual currencies within the eurozone, or the potential dissolution of the euro entirely, could have adverse consequences for us with respect to our outstanding debt obligations that are euro-denominated.

The Eurozone continues to be heavily indebted, which has contributed to the instability of the financial markets. Financial markets may continue to be negatively impacted by concerns about a slowdown in growth in certain economies of the Eurozone and uncertainties regarding the overall stability of the euro and the sustainability of the euro as a single currency given the diverse economic and political circumstances in individual member states. Governments and regulators have implemented austerity programs and other remedial measures to respond to these concerns around the economies and financial system of the Eurozone, but the actual impact of such programs and measures are difficult to predict.

In the event that concerns around the economies and financial system of the Eurozone and the stability and sustainability of the euro are not resolved, it is possible that one or more countries may default on their debt obligations and/or cease using the euro and re-establish their own national currency or that the eurozone may collapse. Should the euro dissolve entirely, the legal and contractual consequences for holders of euro denominated obligations and for parties subject to other contractual provisions referencing the euro such as supply contracts would be determined by laws in effect at such time.

The official exchange rate at which our euro-denominated debt instruments (including the Senior Secured Notes, the Senior Secured Term Loans denominated in euro and the Schuldschein Loan) may be re-denominated may not accurately reflect their value in euro. These potential developments, or market perceptions concerning these and related issues, could adversely affect the value of our euro-denominated debt instruments and could have adverse consequences for us with respect to our outstanding debt obligations that are euro-denominated, and, as we have a substantial amount of debt denominated in euro, our financial condition may be materially affected.

Furthermore, a number of our debt instruments (including the Senior Secured Notes, the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Indentures) contain covenants restricting our and our subsidiaries' corporate activities. See "Risks Relating to Our Capital Structure—Restrictive covenants in our debt instruments—We are subject to restrictive debt covenants that may limit our ability to finance our future operations and capital needs and to pursue business opportunities and activities. If we default under these covenants, we will not be able to meet our payment obligations." Certain of such covenants impose limitations based on euro amounts (e.g., the amount of additional indebtedness we or our subsidiaries may incur). As such, if the euro were to significantly decrease in value, the restrictions imposed by these covenants would become tighter, further restricting our ability to finance our operations and conduct our day to day business.

Risks Relating to 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 obligations with respect to the Senior Secured Notes, the Senior Secured Term Loans and the Schuldschein Loan and to use debt to fund future capital needs.

We are significantly indebted and as of December 31, 2021, had total consolidated loans and borrowings of €7,785.2 million as compared to total equity of €3,264.0 million. In addition, we had €782.0 million available for future borrowings under the unused portion of our Securitization Program. Our substantial indebtedness could have important consequences to holders of the Senior Secured Notes and the creditors under the Senior Secured Term Loans and the Schuldschein Loan 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 Senior Secured Notes, the Senior Secured Term Loans and the Schuldschein Loan. 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 arrangements. The terms of the Indentures, the Schuldschein Loan Agreement and the Senior Secured Term Loans Agreement 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 Senior Secured Notes, the Senior Secured Term Loans and the Schuldschein Loan, and may be secured by collateral that does not secure the Senior Secured Notes, the Senior Secured Term Loans and the Schuldschein Loan. For example, in connection with Project ONE, we expect to enter into a project financing agreement to borrow the majority of the capital expenditure plus associated financing costs during construction, which will be secured by the Project ONE assets. The Project ONE assets will not form part of the collateral that secures the Senior Secured Notes, the Senior Secured Term Loans and the Schuldschein Loan.

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

Unless the maturity date of the Securitization Program is extended, the Securitization Program will mature in December 2024. We satisfy a significant amount of our short-term liquidity needs with amounts available under the Securitization Program. While we have in principle agreed to terms with our securitization providers, our ability to refinance the Securitization Program 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 Program on acceptable terms or at all, and we can provide no assurance we will be able to do so.

The availability under the Securitization Program varies depending on the underlying receivables. For a more detailed discussion, please see “Description of Certain Indebtedness—Securitization Program.” In addition, the Securitization Program contains various covenants, and if we fail to comply with these covenants, a default may occur under the Securitization Program. If a default occurs under the Securitization Program, 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 Senior Secured Term Loans, the Schuldschein Loan and the Senior Secured Notes, 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 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 Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Indentures, 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.

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 Senior Secured Term Loans Agreement and the Schuldschein Loan Agreement, bears or will bear interest at per annum rates equal to EURIBOR, USD LIBOR 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 of LIBOR or other interest rate benchmarks may affect our sources of funding.

Some of our sources of funding are linked to LIBOR or other interest rate benchmarks. See “Description of Certain Indebtedness—Senior Secured Term Loans.” Various interest rate benchmarks (including LIBOR) are the subject of recent national and international regulatory guidance and reform. In addition, on July 27, 2017, the UK Financial Conduct Authority (the “FCA”) announced that it will no longer

persuade or compel banks to submit rates for the calculation of the LIBOR rates after 2021, and on March 5, 2021, the FCA announced that: (a) immediately after December 31, 2021, publication of the one-week and two-month LIBOR for U.S. dollars will permanently cease; (b) immediately after June 30, 2023, publication of the overnight and 12-month LIBOR for U.S. dollars will permanently cease; and (c) immediately after June 30, 2023, the one-month, three-month and six-month LIBOR for U.S. dollars will cease to be provided or, subject to the FCA's consideration of the case, be provided on a synthetic basis and no longer be representative of the underlying market and economic reality they are intended to measure and that representativeness will not be restored. Companies and firms are urged to be able to run their business without LIBOR from this date and to reduce the stock of "legacy" LIBOR contracts. Furthermore, since April 2018, the Bank of England has been setting the primary sterling interest rate benchmark using Sterling Over Night Index Average rate ("SONIA") and SONIA is now the primary sterling interest rate benchmark. It is not possible to predict the effect of the phasing out of LIBOR as a reference rate for debt instruments, including to the rules promulgated by the FCA in relation thereto, that will be enacted in the United Kingdom and elsewhere, which may adversely affect the loan and bond markets in respect of LIBOR-based debt instruments.

More generally, any of the above matters or any other 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 our outstanding indebtedness. The discontinuation of LIBOR or changes in the manner of administration of replacement 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 Senior Secured Term Loans Agreement, the administrative agent and the Borrowers are required to endeavor to establish an alternate rate of interest to LIBOR in certain circumstances such as when the administrative agent determines that LIBOR is not available or if the supervisor for the administrator of LIBOR or a governmental authority having jurisdiction over the administrative agent publicly announces a specific date after which LIBOR 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, including in connection with a refinancing of the Group's existing debt. 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 additional annual report. 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 net 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. For example, in connection with Project ONE, we expect to enter into a project financing agreement to borrow the majority of the capital expenditure plus associated financing costs during construction, which will be secured by the Project ONE assets. The Project ONE assets will not form part of the collateral that secures the Senior Secured Notes, the Senior Secured Term Loans and the Schuldschein Loan.

SELECTED FINANCIAL INFORMATION

The following table sets forth selected historical consolidated financial information for INEOS Group Holdings S.A. for the years ended December 31, 2021, December 31, 2020 and December 31, 2019.

	<u>At or for the year ended December 31,</u>		
	<u>2021</u>	<u>2020</u>	<u>2019</u>
	(€ in millions)		
Income Statement:			
Revenue	18,826.7	11,303.7	13,705.0
Cost of sales.....	(15,357.7)	(10,040.0)	(11,774.4)
Gross profit.....	3,469.0	1,263.7	1,930.6
Distribution costs.....	(215.1)	(207.4)	(229.7)
Administrative expenses.....	(389.5)	(396.4)	(489.1)
Operating profit	2,864.4	659.9	1,211.8
Total share of (loss)/profit of associates and joint ventures using the equity accounting method.....	(42.5)	(210.0)	67.0
Profit on disposal of fixed assets	0.3	1.1	-
Profit on disposal of investments.....	-	78.3	2.6
Profit before net finance costs	2,822.2	529.3	1,281.4
Net finance (costs)/income	(280.3)	22.1	(341.8)
Profit before tax	2,541.9	551.4	939.6
Tax (charge)/credit	(449.6)	24.8	(216.3)
Profit for the year.....	<u>2,092.3</u>	<u>576.2</u>	<u>723.3</u>
Other Financial Data:			
EBITDA before exceptionals ⁽⁴⁾	3,616.2	1,535.0	1,945.1
Depreciation, amortization and impairment	760.7	866.2	685.2
Capital expenditures ⁽¹⁾	809.0	1,311.0	1,380.0
Total Indebtedness ⁽²⁾	7,785.2	7,630.6	6,887.3
Net debt ⁽³⁾	5,679.1	6,288.4	5,904.4

(1) Capital expenditures represents payments to acquire property, plant and equipment as recorded on the consolidated cash flow statements.

(2) Total debt represents long-term debt plus short-term debt, excluding lease liabilities before deduction of unamortized debt issuance costs. Under IFRS, debt issuance costs are deducted from the related debt amounts for the purposes of balance sheet presentation and are amortized over the life of the debt.

(3) Net debt represents total debt less cash and cash equivalents.

(4) EBITDA before exceptionals represents operating profit before depreciation, amortization, impairment and exceptional charges. In accordance with IFRS, we use both the FIFO and weighted average cost methods of accounting for purposes of determining our inventory cost in connection with the preparation of our audited annual consolidated financial information. EBITDA before exceptionals is based on the FIFO and weighted average cost methods of accounting for inventory used in connection with the preparation of such financial information. EBITDA before exceptionals is derived from income statement line items calculated in accordance with IFRS on a historical cost basis. Although our EBITDA-based measures should not be considered a substitute measure for operating profit, profit, cash flows from operating activities or other measures of performance as defined by IFRS, we believe that they provide useful information regarding our ability to meet future debt service requirements. The EBITDA measure presented may not be comparable to similarly titled measures used by other companies.

The reconciliation of INEOS' operating profit to EBITDA before exceptionals is as follows:

	<u>Year ended December 31,</u>		
	<u>2021</u>	<u>2020</u>	<u>2019</u>
	(€ in millions)		
Operating profit	2,864.4	659.9	1,211.8
Depreciation, amortization and impairment	760.7	866.2	685.2
Exceptional administrative (gains)/expenses.....	(8.9)	8.9	48.1
EBITDA before exceptionals	<u>3,616.2</u>	<u>1,535.0</u>	<u>1,945.1</u>

Use of Non-GAAP Financial Measures

We have presented certain information in this annual report based on non-GAAP measures. As used in this annual report, this information includes “EBITDA before exceptionals”.

- ***EBITDA before exceptionals*** represents operating profit before depreciation, amortization, impairment and exceptional charges. In accordance with IFRS, we use both the first in first out (“FIFO”) and weighted average cost methods of accounting for purposes of determining our inventory cost in connection with the preparation of our audited annual consolidated financial information. EBITDA before exceptionals is based on the FIFO and weighted average cost methods of accounting for inventory used in connection with the preparation of such financial information. EBITDA before exceptionals is derived from income statement line items calculated in accordance with IFRS on historical cost basis.

EBITDA before exceptionals, is not a measure of financial performance under IFRS. EBITDA-based measures are non-GAAP measures. We believe that the presentation of EBITDA-based measures enhances an investor’s understanding of our financial performance. However, EBITDA-based measures should not be considered in isolation or viewed as a substitute for operating profit, profit, cash flows from operating activities or other measures of performance as defined by IFRS. These EBITDA-based measures, as used herein, are not necessarily comparable to other similarly titled captions of other companies due to potential inconsistencies in the method of calculation. Our management has used, and expects to use, EBITDA-based measures to assess operating performance and to make decisions about allocating resources among our various segments. In assessing our overall performance and the performance of each of our segments, management reviews EBITDA-based measures as a general indicator of performance compared to prior periods. Furthermore, management and employee bonuses can be linked to the EBITDA-based performance of the business and the region in which they work. Our EBITDA-based measures exclude items that management does not consider in assessing operating performance. Our management believes it is useful to eliminate such items because it allows management to focus on what it considers to be a more meaningful indicator of operating performance and ability to generate cash flow from operations.

The information presented by EBITDA before exceptionals is unaudited and has not been prepared in accordance with IFRS or any other accounting standards. In addition, the presentation of this measure is not intended to and does not comply with the reporting requirements of the SEC; compliance with its requirements would require us to make changes to the presentation of this information.

Presentation

Rounding adjustments have been made in calculating some of the financial information included in this annual report. Figures shown as totals in some tables and elsewhere may not be exact arithmetic aggregations of the figures that precede them.

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 “pounds sterling,” “sterling,” “Sterling,” “British pounds” or “£” are to the lawful currency of the United Kingdom; all references to the “United States” or the “U.S.” are to the United States of America; and all references to “U.S.\$,” “U.S. dollars,” “dollars” or “\$” are to the lawful currency of the United States.

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 one of the world’s largest chemical companies as measured by revenue. Our business has highly integrated, world-class chemical facilities and production technologies. We have leading global market positions for a majority of our key products and a strong and stable customer base. We operate 33 manufacturing sites in six countries throughout the world. We are led by a highly experienced management team with, on a combined basis, over 100 years of experience in the chemical industry. As of December 31, 2021, our total chemical production capacity was approximately 23,100 kta, of which 55% was in Europe and 45% was in North America.

We operate our business through three segments: Olefins & Polymers Europe, Olefins & Polymers North America and Chemical Intermediates. The products we manufacture are derived from crude oil and natural gas, and include olefins, polymers and various petrochemical products directly or indirectly derived from olefins. Our products serve a broad and diverse range of end markets, including packaging, construction, automotive, white goods/durables, agrochemicals and pharmaceuticals.

Our highly integrated, world class production facilities and technological know how allow us to process raw materials into higher value-added products. In Europe we own two sites integrated with crackers and polymer units. Typically, these two sites account for approximately 76% of our European olefin and polymer volumes. The polyolefins plants on our two major sites in Europe receive more than 95% of their feedstock supply from our integrated crackers. Similarly, in the United States, much of our olefin feedstock requirements for our polymer business is supplied by either our Chocolate Bayou cracker in Texas or by integrated third party facilities, such as the Tesoro facility in Carson, California. We believe that with our highly integrated facilities we are able to capture attractive margins across the value chain, enjoy greater certainty of feedstock supply, reduce logistical costs, improve energy management and optimize our product slate.

We benefit from the cost advantages of operating large-scale, well-invested, highly integrated facilities strategically located near major transportation facilities and customer locations. Since January 1, 2007, we and our predecessors have invested almost €10.0 billion (including investments in divested assets) in our production facilities to ensure that they operate efficiently, resulting in integrated, and state-of-the-art production units. This includes significant investments of almost €3.0 billion in the last four years to further enhance our assets’ capabilities. 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 margin and cash flows even during downturns in industry cycles or customer demand. For the year ended December 31, 2021, our revenue was €18.8 billion and our EBITDA before exceptionals was €3.6 billion.

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 are particularly focused on expanding our footprint in Asia to further access the high demand growth of that region, which may take the form of joint ventures and unrestricted subsidiaries. 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.

Since April 1998, when INEOS was established with the acquisition of the Belgian “Oxide” assets from Inspec plc, we have significantly expanded, both through a series of strategic acquisitions of businesses and assets from major chemical companies, and through organic growth. The combination of INEOS and

Innovene in December 2005 represented a transformational milestone for our company, providing global scale and further upstream integration.

In 2011, we transferred our Refining Business, our Entrepreneurial (Refining) Business and certain infrastructure assets to three joint ventures outside the INEOS Group. Please see “Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Refining Divestiture” for a further description of the disposal of our Refining Business and Entrepreneurial (Refining) Business.

On October 1, 2013, we completed the Grangemouth Divestiture to a newly created subsidiary of INEOS Holdings AG, our indirect parent company. See “Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Grangemouth Divestiture.”

On July 1, 2014 we divested the olefins and polymers assets and Chemical Intermediates assets of the Lavéra site. See “Business—Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture—The Lavéra Divestiture.”

In 2015 we completed the purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the INOVYN group (formerly the Kerling Group), a related party. In 2015 we also acquired aromatics and cumene assets from Axiall Corporation. The acquisition comprised the world’s largest cumene plant in Pasadena, Texas. In addition, Axiall’s phenol, acetone and alpha-methylstyrene business was transferred to the INEOS phenol facility at Mobile, Alabama.

In 2016 the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high-density polyethylene (HDPE) pipe manufacturers in North America. Moreover, in 2016, following a strategic review of the INEOS Technologies business, we decided to cease marketing its polyolefins licensing technology externally and to transfer the remaining parts of the INEOS Technologies business to existing businesses within the Group to provide a clearer focus on individual product lines.

In 2019 the Group acquired a shale oil and gas business located in the Giddings Field in Texas, USA as well as the INESCO combined heat and power plant at the Antwerp site in Belgium.

On December 31, 2020, the Group acquired the remaining 50% interest in the Gemini HDPE joint venture from Sasol Chemicals. The principal activity of the company is the production of high density polyethylene in La Porte, Texas, USA. The acquisition increased the Group’s interest in Gemini to 100%. Prior to the acquisition the Group reflected its 50% interest in Gemini as a joint venture.

On December 31, 2021 the Group acquired the assets of Charter Plastics in Titusville, USA, a manufacturer of high density polyethylene (HDPE) pipe products.

Key Factors Affecting Our Results of Operation

Our results of operations are driven by a combination of factors affecting the petrochemical and chemical intermediate markets generally, including general economic conditions, prices of raw materials, global supply and demand for our products and environmental legislation, including climate change initiatives. Our results of 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 of operations.

Supply and Demand in the Petrochemical Industry

Margins in the petrochemical industry are strongly influenced by industry utilization. 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. In response, petrochemical producers typically reduce capacity or limit further capacity additions, eventually causing the market to be relatively undersupplied.

After a sharp drop in operating rates as a result of demand destruction during the COVID-19 pandemic, NexantECA's analysis of the global supply and demand for ethylene indicates that the rate of capacity addition will exceed consumption growth in the near term. Operating rates fell by five percent to 85% in 2020, and NexantECA forecasts a further decline to 81% by 2023. This reflects the expected completion of some additional capacity in the United States, and most importantly several new liquids-based crackers in China and other parts of Asia. Nevertheless, the rate of margin recovery in the petrochemical industry is highly dependent on the actual speed of global macro-economic growth. In addition to the global petrochemical cycle, margins are also susceptible to potentially significant swings in the short term. This volatility, 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 plant outages, political and economic conditions driving rapid changes in prices for key feedstocks, exchange rate fluctuations and changes in inventory management policies by petrochemical customers (such as inventory building or de-stocking in periods of expected price increases).

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 believe in operating 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, 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 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. Olefins crackers typically undergo major turnarounds every four or five years, with each turnaround lasting four to six weeks. Turnarounds for polymers and derivatives units are more frequent, typically every one to two years, but generally last only seven to 10 days. Likewise, unplanned outages, such as the freezing weather conditions in Texas during the latter part of the first quarter of 2021, the outages at our Green Lake and Seal Sands sites in 2019, the impact of Hurricane Harvey in autumn 2017 and the power outage at the Rafnes, Norway site resulting in a fire in October 2016, can impact our operating results, even if such outages 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.

Oil and Gas Price Movements

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 \$74 per barrel in December 2021, while the natural gas Citygate price in Texas decreased from \$8.23 per thousand cubic feet in January 2008 to \$7.11 per thousand cubic feet in December 2021. During 2021 the crude oil price steadily increased reaching a high of approximately \$86 per barrel in October before finishing the year at approximately \$74 per barrel as compared to approximately \$50 per barrel at the end of 2020. The average price of crude oil, and thus the price of petrochemical products, increased to an average of approximately \$71 per barrel in 2021 as compared to an average of approximately \$42 per barrel for the year ended December 31, 2020.

Our ability to pass on price increases for crude is limited due to the impact of time lags resulting from the repricing intervals of our contracts with suppliers and customers, particularly in the petrochemical business. While most of our feedstock contracts reprice daily, our contracts with customers generally reprice on a monthly basis. A further limitation is that 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. The effect of these time lags and our customers' inventory management policies on our ability to pass through feedstock price increases is magnified in periods of high volatility. In addition, changes in oil and gas prices have a direct impact on our working capital levels and on inventory losses, especially in the event of a sudden decrease in oil and gas prices. While negatively affecting our EBITDA before exceptionals, these inventory losses and cost of sales adjustments are non-cash in nature. In general, increases in feedstock prices

lead to an increase in our working capital and decreases in feedstock prices lead to a decrease in our working capital.

Implementation of Cost Reduction

We have historically focused on implementing our strategies of reducing costs by making rapid reductions in underlying fixed costs and implementing an efficient corporate and management structure and maximizing the utilization of our assets. Our ability to continue to reduce costs will impact, among other things, our profitability and capacity plans.

Debt Structure

As of December 31, 2021, we had €7,785.2 million (December 31, 2020: €7,630.6 million) of indebtedness. Our future results of operations, and in particular our net finance charges, will be significantly affected by the amount of indebtedness, 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.

In November 2021 the Group raised €1.1 billion million of Senior Secured Term Loans which were used to fully redeem the outstanding Senior Notes due 2024.

In December 2020, as part of the Group's purchase of the remaining 50% interest in the Gemini HDPE plant in Texas, USA, from Sasol Chemicals the Group amended and upsized the existing Term Loan facility within the acquired legal entity. The amended loan facility was upsized to \$600 million and the maturity extended to October 31, 2027.

In October 2020, the Group issued €325 million Senior Secured Notes due March 2026 and new euro denominated Senior Secured Term Loans of €375 million which mature on October 27, 2027.

In June 2019, the Group entered into an inventory monetization agreement with J Aron & Company LLC ("J Aron"). Under this arrangement, the Group sold certain inventory to J Aron and agreed to buy back equivalent inventory at the end of the term at the same price. In April 2021, the Group and J Aron agreed an extension of the term to June 2022, and a further extension option may be exercised by mutual agreement.

In April 2019 the Group issued €770 million Senior Secured Notes due March 2026. The proceeds of the refinancing were used to redeem in full the €770 million Senior Secured Notes due 2023 on May 1, 2019.

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 and euro. In our European petrochemical business, product prices, certain feedstock costs and most other costs are denominated in euro and British pounds. In our U.S. petrochemical and chemical intermediates businesses, product prices, raw material costs and most other costs are primarily denominated in U.S. dollars. We generally do not enter into foreign currency exchange instruments to hedge our foreign currency exposure, although we have done so in the past and we 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 and the British pound. In 2019, the value of the euro relative to the U.S. dollar decreased and in the context of the COVID 19 outbreak continued to do so in the first half of 2020 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.

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.

Results of Operations

The consolidated financial information of INEOS is prepared in accordance with IFRS. The income statement data for the years ended December 31, 2021, December 31, 2020 and December 31, 2019 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.* 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 impairment charge.* Exceptional impairment charge is 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 the impairment of property, plant and equipment.
- *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 gain/(expenses).* Exceptional administrative gains/(expenses) are those gains/(expenses) which, because of their size or nature, are disclosed to give a proper understanding of the underlying results for the period. These gains/(expenses) are mainly related to closure and demolition costs, business restructuring and the provision for severance payments.
- *Share of (loss)/profit of associates and joint ventures using the equity accounting method.* Share of (loss)/profit of associates and joint ventures using the equity accounting method relates to the results from the investment in associated undertakings and joint ventures.
- *Total finance income.* Total finance income includes interest receivable on funds invested, expected return on defined benefit pension plan assets, net fair value gain on derivatives and foreign exchange gains.
- *Finance 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.
- *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.

INEOS Group Holdings S.A.						
For the year ended December 31,						
	2021		2020		2019	
	€m	%	€m	%	€m	%
Revenue	18,826.7	100.0	11,303.7	100.0	13,705.0	100.0
Cost of sales before exceptional items	(15,357.7)	(81.6)	(9,921.5)	(87.8)	(11,774.4)	(85.9)
Exceptional impairment charge	-	-	(118.5)	(1.0)	-	-
Gross profit	3,469.0	18.4	1,263.7	11.2	1,930.6	14.1
Distribution costs	(215.1)	(1.1)	(207.4)	(1.8)	(229.7)	(1.7)
Administrative expenses before exceptional items.....	(398.4)	(2.1)	(387.5)	(3.4)	(441.0)	(3.2)
Exceptional administrative gains/(expenses).....	8.9	-	(8.9)	(0.1)	(48.1)	(0.4)
Operating profit	2,864.4	15.2	659.9	5.8	1,211.8	8.8
Share of (loss)/profit of associates and joint ventures using the equity accounting method	(42.5)	(0.2)	(210.0)	(1.9)	67.0	0.5
Profit on disposal of investments	-	-	78.3	0.7	2.6	0.0
Profit on disposal of fixed assets.....	0.3	-	1.1	-	-	-
Profit before finance costs	2,822.2	15.0	529.3	4.7	1,281.4	9.3
Total finance income.....	248.2	1.3	318.3	2.8	91.0	0.7
Finance costs before exceptional item	(525.0)	(2.8)	(296.2)	(2.6)	(421.1)	(3.1)
Exceptional finance costs.....	(3.5)	-	-	-	(11.7)	(0.1)
Profit before tax	2,541.9	13.5	551.4	4.9	939.6	6.9
Tax (charge)/credit.....	(449.6)	(2.4)	24.8	0.2	(216.3)	(1.6)
Profit after tax	2,092.3	11.1	576.2	5.1	723.3	5.3

Year Ended December 31, 2021, Compared With Year Ended December 31, 2020

Consolidated

Revenue. Revenue increased by €7,523.0 million, approximately 66.6%, to €18,826.7 million for the year ended December 31, 2021 as compared to €11,303.7 million for the year ended December 31, 2020. The increase in revenues was driven primarily by higher prices and increased sales volumes. The increase in selling prices followed the significant rise in crude oil prices, which increased to an average of \$71/bbl for the year ended December 31, 2021 as compared to \$42/bbl in the same period in 2020. The largest price increases were in the O&P businesses which experienced higher prices across all product lines reflecting healthy demand and tight markets as economies began to recovery from the COVID-19 pandemic. Overall sales volumes for the Group were approximately 9% higher in the year ended December 31, 2021 as compared to the year ended December 31, 2020 with the O&P and Phenol businesses experiencing the biggest increase from resurgent economies, after 2020 volumes were adversely impacted by the effects of the COVID-19 pandemic.

Cost of sales. Cost of sales increased by €5,436.2 million, approximately 54.8%, to €15,357.7 million for the year ended December 31, 2021 as compared to €9,921.5 million for the year ended December 31, 2020. The increase in cost of sales was largely due to the increase in crude oil prices in 2021, which has meant higher feedstock prices across the Group as well as increased volumes in the year ended December 31, 2021, as compared to the same period in 2020.

Exceptional impairment charge. Exceptional impairment charges of €118.5 million were charged for the year ended December 31, 2020 in relation to certain plant and equipment following the Group's decision to terminate work on a propane dehydrogenation unit and associated infrastructure at its site in Antwerp, Belgium.

Gross profit. Gross profit increased by €2,205.3 million, approximately 174.5%, to €3,469.0 million for the year ended December 31, 2021 as compared to €1,263.7 million for the year ended December 31, 2020. The increase in profitability was driven by higher margins, increased sales volumes and inventory holding gains. Sales volumes were approximately 9% higher in the year ended December 31, 2021 as compared to the same period in 2020 as the Group experienced higher volumes driven by tighter markets from a combination of stronger demand from resurgent economies and industry supply constraints. This also led to an increase in margins across all businesses within the Group due to the favourable market conditions during the year ended December 31, 2021 as compared to the same period in 2020. O&P North America experienced higher margins across all product lines in the year ended December 31, 2021 as compared to the same period in 2020, particularly polyethylene and polypropylene, due to a combination of strong demand from a resurgent US economy and industry supply constraints, whilst olefin margins benefitted from a tighter market. Overall margins in O&P Europe increased during the year ended December 31, 2021 as compared to the same period in 2020 following higher olefin margins due to a stronger market, with demand for butadiene and benzene being particularly strong as compared to the unfavourable market conditions in 2020. The polymers business experienced an increase in margins due to logistical challenges in the market which reduced the level of European imports, coupled with strong US and European demand in both the durables and consumables markets. Inventory holding gains within the O&P segments were approximately €279 million in the year ended December 31, 2021 as compared to inventory holding losses of €43 million in the same period in 2021, reflecting the increased raw material costs during 2021. Chemical Intermediates experienced an increase in profitability across all businesses in the year ended December 31, 2021 as compared to the same period in 2020 with the Oxide business experiencing record margins. This was driven by commodity products within the Oxide business, with both glycol margins and volumes increasing due to lower European imports, competitor outages and strong European and Asian demand. Partially offsetting the increase in profitability across the Group was the depreciation of the US dollar by approximately 5% against the euro in the year ended December 31, 2021 as compared to the same period in 2020 which decreased the reported euro results.

Distribution costs. Distribution costs increased by €7.7 million, approximately 3.7%, to €215.1 million for the year ended December 31, 2021 as compared to €207.4 million for the year ended December 31, 2020. The increase in distribution costs in the year ended December 31, 2021 as compared to the same period in 2020 reflected the higher sales volumes across the Group in 2021, partially offset by the depreciation of the US dollar by approximately 5% against the euro in the year ended December 31, 2021 as compared to the same period in 2020 which decreased the reported euro costs.

Administrative expenses. Administrative expenses increased by €10.9 million, approximately 2.8%, to €398.4 million for the year ended December 31, 2021 as compared to €387.5 million for the year ended December 31, 2020. The increase in administrative expenses was primarily due to higher employee performance

bonus accruals (including long term incentive plans) following a stronger than budgeted performance across all businesses within the Group in the year ended December 31, 2021 as compared to the year ended December 31, 2020.

Exceptional administrative gains/(expenses). Exceptional administrative gains of €8.9 million were credited in the year ended December 31, 2021, which related to the final true up of the original closure cost provision made in December 2019 in respect of the Nitriles facility at Seal Sands, UK following lower than expected demolition costs. Exceptional administrative expenses of €8.9 million were charged for the year ended December 31, 2020, which related to a provision for early retirement costs as part of a restructuring of the Koln site within the O&P Europe business.

Operating profit. Operating profit increased by €2,204.5 million, approximately 334.1%, to €2,864.4 million for the year ended December 31, 2021 as compared to €659.9 million for the year ended December 31, 2020.

Share of loss of associates and jointly controlled entities. Share of loss of associates and jointly controlled entities was €42.5 million for the year ended December 31, 2021 as compared to €210.0 million for the year ended December 31, 2020. The share of loss from associates and jointly controlled entities primarily reflected the Group's share of the results of the Refining joint venture with PetroChina as margins in the European refining market have remained weak during 2021. In 2020 refining volumes were adversely impacted by the COVID-19 virus pandemic which reduced demand for many refined products. In addition falling crude oil prices during 2020 resulted in significant inventory holding losses for the year ended December 31, 2020.

Profit on disposal of investments. Profit on disposal of investments for the year ended December 31, 2020 was €78.3 million and related to the disposal of the Group's previously held equity interest in the Gemini HDPE joint venture following the Group's acquisition of the remaining 50% interest in the joint venture from Sasol on December 31, 2020.

Profit on disposal of fixed assets. Profit on disposal of fixed assets for the year ended December 31, 2021 was €0.3 million as compared to €1.1 million for the year ended December 31, 2020.

Profit before net finance costs. Profit before net finance costs increased by €2,292.9 million, approximately 433.2%, to €2,822.2 million for the year ended December 31, 2021 as compared to €529.3 million for the year ended December 31, 2020.

Finance income. Finance income decreased by €70.1 million, approximately 22.0%, to €248.2 million for the year ended December 31, 2021 as compared to €318.3 million for the year ended December 31, 2020. The decrease in finance income for the year ended December 31, 2021 as compared to 2020 primarily reflected a decrease in foreign exchange gains and interest income on cash balances and other loan receivables, partly offset by an increase in net fair value gains on derivatives. The decrease in net foreign exchange gains primarily associated with short term intra group funding was a gain of €121.4 million in the year ended December 31, 2021 as compared to a gain of €250.2 million for the same period in 2020. This was partly offset by a net fair value gain on derivatives of €76.1 million during the year ended December 31, 2021 as compared to a net fair value gain of €5.8 million for the same period in 2020.

Finance costs. Finance costs increased by €228.8 million, approximately 77.2%, to €525.0 million for the year ended December 31, 2021 as compared to €296.2 million for the year ended December 31, 2020. The increase in finance costs for the year ended December 31, 2021 primarily reflected an increase in foreign exchange losses primarily associated with short term intra group funding which was a loss of €234.4 million in the year ended December 31, 2021 as compared to a loss of €21.8 million for the same period in 2020. There was also additional interest and amortisation of issue costs on the Senior Secured Terms Loans and Senior Secured Notes due March 2026 issued in October 2020.

Exceptional finance costs. Exceptional finance costs of €3.5 million were charged for the year ended December 31, 2021 following the write-off of deferred issue costs as a result of the early redemption of the Senior Notes due 2024 in November 2021.

Profit before tax. Profit before tax increased by €1,990.5 million, approximately 361.0%, to €2,541.9 million for the year ended December 31, 2021 as compared to €551.4 million for the year ended December 31, 2020.

Tax (charge)/credit. Tax (charge)/credit increased by €474.4 million, to a charge of €449.6 million for the year ended December 31, 2021 as compared to a credit of €24.8 million for the year ended December 31, 2020 primarily due to the increased profitability of the Group. In 2020 the Group recognised tax refunds due in the US in accordance with the recently enacted CARES Act. This Act allowed the Group to carry back net operating losses in the US for a period of up to five years to obtain retroactive tax refunds at the tax rates applicable for the years the losses are utilised. Net operating losses were created in the US by the application of 100% tax depreciation on significant capital expenditure projects that were placed into service in the years ended December 31, 2020 and 2019. The effective tax rate for the Group for the year ended December 31, 2021 was lower than the standard rate in Luxembourg of 24.94% as profits were made in regions with lower rates (such as UK and Switzerland) which more than offset profits made in regions with higher rates than the standard rate (such as Germany and Belgium).

Profit for the year. Profit for the year increased by €1,516.1 million, approximately 263.1%, to €2,092.3 million for the year ended December 31, 2021 as compared to €576.2 million for the year ended December 31, 2020.

Business segments

The Group reports under three business segments: O&P North America, O&P Europe and Chemical Intermediates.

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

	For the year ended December 31,	
	2021	2020
	(€ in millions)	
<i>Revenue</i>		
Continuing operations		
O&P North America	5,527.3	2,785.0
O&P Europe	7,526.0	4,658.3
Chemical Intermediates	8,496.2	5,352.9
Eliminations	(2,722.8)	(1,492.5)
	<u>18,826.7</u>	<u>11,303.7</u>
 <i>EBITDA before exceptionals</i>		
Continuing operations		
O&P North America	1,577.2	554.2
O&P Europe	948.2	395.3
Chemical Intermediates	1,090.8	585.5
	<u>3,616.2</u>	<u>1,535.0</u>

O&P North America

Revenue. Revenue in the O&P North America segment increased by €2,742.3 million, or 98.5%, to €5,527.3 million for the year ended December 31, 2021, as compared to €2,785.0 million for the year ended December 31, 2020. The increase was driven by higher prices and higher volumes in the year ended December 31, 2021 as compared to the year ended December 31, 2020. The weighted average sales price for the whole business was higher in the year ended December 31, 2021 as compared to the same period in 2020, as the olefins, polymers and pipe businesses all experienced a rise in prices during 2021. Sales volumes increased by approximately 11% in the year ended December 31, 2021 as compared to the same period in 2020 driven by higher sales volumes within the olefins, polymers and pipe businesses. The increase in the olefin volumes was driven by the debottleneck project at the Chocolate Bayou, USA site and additional feedstock sales. The increase in additional polyethylene

volumes was mainly due to the acquisition of the remaining 50% interest in the HDPE plant at the Battleground site in Texas, USA on December 31, 2020.

EBITDA before exceptionals. EBITDA before exceptionals in the O&P North America segment increased by €1,023.0 million, or 184.6%, to €1,577.2 million for the year ended December 31, 2021 as compared to €554.2 million for the year ended December 31, 2020. The increase in profitability in the year ended December 31, 2021 as compared to the year ended December 31, 2020 was driven by higher margins and volumes. Margins were higher across all product lines in the year ended December 31, 2021 as compared to the same period in 2020, particularly polyethylene and polypropylene, due to a combination of strong demand from a resurgent US economy and industry supply constraints, whilst olefin margins benefitted from a tighter market. Total sales volumes increased approximately 11% in the year ended December 31, 2021 as compared to the same period in 2020 driven by higher sales volumes within the olefins, polymers and pipe businesses. Inventory holding gains were €75 million in the year ended December 31, 2021, as compared to inventory holding gains of €54 million in the same period in 2020. Partially offsetting the increase in profitability was the depreciation of the US dollar by approximately 5% against the euro in the year ended December 31, 2021 as compared to the same period in 2020 which decreased the reported euro results.

O&P Europe

Revenue. Revenue in the O&P Europe segment increased by €2,867.7 million, or 61.6%, to €7,526.0 million for the year ended December 31, 2021 as compared to €4,658.3 million for the year ended December 31, 2020. The increase in revenues was driven by higher selling prices and increased sales volumes in the year ended December 31, 2021 as compared to the year ended December 31, 2020. The increase in selling prices was driven by the general price environment, which was higher in the year ended December 31, 2021 as compared to the same period in 2020, as crude oil prices increased to an average of \$71/bbl for the year ended December 31, 2021 as compared to an average of \$42/bbl for the year ended December 31, 2020, which in turn led to an increase in prices across all product lines. The naphtha price increased continuously throughout 2021, averaging 71% higher than in 2020. Feedstock, such as butane and propane also rose by 90% and 85% respectively in 2021 as compared to 2020. Sales prices also saw strong increases reflecting the economic recovery from the COVID-19 pandemic, healthy demand and tight markets. Sales volumes increased by approximately 10% in the year ended December 31, 2021 as compared to the same period in 2020 driven by higher olefin and polypropylene volumes which reflected the market recovery in 2021, as 2020 was adversely impacted by the COVID-19 pandemic.

EBITDA before exceptionals. EBITDA before exceptionals in the O&P Europe segment increased by €552.9 million or 139.9% to €948.2 million for the year ended December 31, 2021, as compared to €395.3 million for the year ended December 31, 2020. The results for the year ended December 31, 2021 have increased compared to the year ended December 31, 2020, due to higher margins, increased volumes and higher inventory holding gains. Sales volumes increased by approximately 10% in the year ended December 31, 2021 as compared to the same period in 2020 driven by higher olefin and polypropylene volumes. Inventory holding gains were €204 million in the year ended December 31, 2021 as compared to losses of €97 million in the year ended December 31, 2020. The inventory holding gains were driven by the increase in feedstock prices, particularly naphtha, butane and propane which all experienced significant increases during the year ended December 31, 2021. Overall margins increased in 2021 as compared to 2020 following higher olefin margins due to a stronger market, with demand for butadiene and benzene being particularly strong as compared to the unfavourable market conditions in 2020. The polymers business experienced an increase in margins due to logistical challenges in the market which reduced the level of European imports, coupled with strong US and European demand in both the durables and consumables markets. The Trading & Shipping business experienced lower margins in the year ended December 31, 2021 as compared to the same period in 2020 as higher freight costs adversely impacted profitability.

Chemical Intermediates

Revenue. Revenue in the Chemical Intermediates segment increased by €3,143.3 million, or 58.7%, to €8,496.2 million for the year ended December 31, 2021 as compared to €5,352.9 million for the year ended December 31, 2020. The Oxide business revenues increased in the year ended December 31, 2021 as compared to the year ended December 31, 2020 driven by higher prices and increased sales volumes. Overall prices increased in the year ended December 31, 2021 as compared to the same period in 2020, as pricing closely followed the rise in underlying raw material costs of ethylene and propylene, with high demand and limited supply also contributing to rising prices. Sales volumes were approximately 8% higher in the year ended December 31, 2021 as compared to the same period in 2020, most notably in the commodity area where ethylene and propylene glycols performed much stronger due to the absence of US imports as a result of the extreme weather seen in Texas in early 2021, outages at some competitors and improved demand due to the resurgence of the economy from the COVID-19

pandemic. The Oligomers business revenues were higher in the year ended December 31, 2021 as compared to the year ended December 31, 2020, as a result of higher prices and increased sales volumes. Regional prices ordinarily move in line with the underlying raw material prices of ethylene and naphtha. Regional feedstock prices were higher in the year ended December 31, 2021 as compared to the same period in 2020 with higher European and US ethylene prices and increased naphtha prices impacting selling prices. Sales volumes were approximately 5% higher in the year ended December 31, 2021 as compared to the year ended December 31, 2020 as LAO, PAO and SO all experienced higher sales volumes. The increase in sales volumes were primarily due to strong demand across most customer industries as economies began to open up again from the COVID-19 related disruptions experienced during 2020. LAO volumes also benefitted from additional production from the new LAO plant at Chocolate Bayou, USA which became operational in the fourth quarter of 2021. Nitriles revenues increased in the year ended December 31, 2021 as compared to the year ended December 31, 2020, driven by higher prices. The average acrylonitrile sales price increased by 75% in the year ended December 31, 2021 as compared to the same period in 2020, driven by higher propylene prices and the US market predominately being cost plus pricing. Excluding the impact of the closure of the Seal Sands, UK plant in December 2020 the sales volumes of acrylonitrile for the year ended December 31, 2021 was in line with the volumes achieved in 2020 despite limited product availability from unplanned outages at Green Lake and a force majeure declaration in Koln during 2021. The Phenol business revenues increased in the year ended December 31, 2021 as compared to the year ended December 31, 2020, driven primarily by higher prices and increased volumes. Selling prices moved in line with the underlying raw material prices with acetone and phenol prices moving significantly higher due to historically high US and European propylene and benzene feedstock prices as well as a tighter market in 2021. Sales volumes were approximately 11% higher in the year ended December 31, 2021 as compared to the year ended December 31, 2020 as a result of higher phenol and acetone sales. The increased volumes were driven by much improved European demand in the year ended December 31, 2021 as compared to the same period in 2020.

EBITDA before exceptionals. EBITDA before exceptionals in the Chemical Intermediates segment increased by €505.3 million, or 86.3%, to €1,090.8 million for the year ended December 31, 2021 as compared to €585.5 million for the year ended December 31, 2020. The Oxide business results for the year ended December 31, 2021 increased as compared to the year ended December 31, 2020, mainly driven by record margins and increased volumes. The increase in margins in the year ended December 31, 2021 as compared to the same period in 2020 was driven by commodity products with glycol margins and volumes both increasing due to lower US imports related to the after-effects of the earlier freezing weather conditions in Texas at the start of 2021, competitor outages and strong European and Asian demand. EO and EO derivatives also experienced increased margins due to improved European demand from a resurgent economy. The Oligomers business profitability increased in the year ended December 31, 2021 compared with the year ended December 31, 2020, as a result of increased sales volumes and higher margins. Sales volumes were approximately 5% higher in the year ended December 31, 2021 as compared to the year ended December 31, 2020 as LAO, PAO and SO all experienced higher sales volumes primarily due to strong demand across most customer industries as economies began to open up again from COVID-19 related disruptions. Overall margins were higher in the year ended December 31, 2021 as compared with the year ended December 31, 2020 which was driven by higher LAO margins in North America and Asia. The increase in overall margins was partly offset by lower PAO and SO margins which were adversely impacted by higher production and conversion costs. The Nitriles business experienced an increase in profitability in the year ended December 31, 2021 as compared to the year ended December 31, 2020, due to higher margins and lower fixed costs. Margins were higher in the year ended December 31, 2021 as compared to the year ended December 31, 2020 due to stronger market conditions, as recovery from the COVID-19 pandemic continued throughout 2021 with average acrylonitrile margins increasing by 39% for the year ended December 31, 2021 as compared to the year ended December 31, 2020. Fixed costs were lower in the year ended December 31, 2021 as compared to the same period in 2020 mainly due to the cost savings from the closure of the Seal Sands, UK plant in December 2020. The Phenol business profitability increased in the year ended December 31, 2021 as compared to the year ended December 31, 2020, primarily due to higher margins and increased volumes. Volumes were higher in the year ended December 31, 2021 as compared to the same period in 2020, driven by higher phenol and acetone volumes following significantly improved European demand during 2021. Margins were higher in the year ended December 31, 2021 as compared to the same period in 2020, driven by higher European and US benzene prices and increased phenol adders in 2021, partly offset by weaker acetone margins.

Year Ended December 31, 2020, Compared With Year Ended December 31, 2019

Consolidated

Revenue. Revenue decreased by €2,401.3 million, approximately 17.5%, to €11,303.7 million for the year ended December 31, 2020 as compared to €13,705.0 million for the year ended December 31, 2019. The decrease in revenues was driven primarily by lower prices and to a lesser extent lower volumes. The decrease in selling prices followed the significant fall in crude oil prices, which decreased to an average of \$42/bbl for the year ended December 31, 2020 as compared to \$64/bbl in the same period in 2019. The largest decrease was in the O&P Europe business as prices were adversely impacted by lower market demand, especially in butadiene and benzene. Sales volumes were approximately 2% lower in the year ended December 31, 2020 as compared to the same period in 2019 as the COVID-19 virus pandemic impacted demand across all regions, as numerous countries entered lockdowns throughout 2020. Nevertheless, demand for packaging, medical, food and cleaning applications was strong, largely offsetting the automotive and construction downturn as a result of the pandemic.

Cost of sales. Cost of sales decreased by €1,852.9 million, approximately 15.7%, to €9,921.5 million for the year ended December 31, 2020 as compared to €11,774.4 million for the year ended December 31, 2019. The decrease in cost of sales was largely due to the decrease in crude oil prices, which has meant lower feedstock prices across the Group in the year ended December 31, 2020, as compared to the same period in 2019.

Exceptional impairment charge. Exceptional impairment charges of €118.5 million were charged for the year ended December 31, 2020 in relation to certain plant and equipment following the Group's decision to terminate work on a propane dehydrogenation unit and associated infrastructure at its site in Antwerp, Belgium.

Gross profit. Gross profit decreased by €666.9 million, approximately 34.5%, to €1,263.7 million for the year ended December 31, 2020 as compared to €1,930.6 million for the year ended December 31, 2019. The decrease in profitability was primarily driven by lower margins and to a lesser extent lower volumes. Sales volumes were approximately 2% lower in the year ended December 31, 2020 as compared to the same period in 2019, as the COVID-19 virus pandemic impacted demand as many countries entered lockdowns during 2020. In addition, there were scheduled major turnarounds of one of the Chocolate Bayou crackers and one of the Koln crackers during 2020, which adversely impacted results in the year. O&P North America polymer margins were lower during 2020 as compared to 2019, driven by decreased polyethylene and polypropylene margins, largely as a result of weaker demand due to COVID-19 disruption and additional polypropylene capacity coming online. In addition, the pipe business experienced lower margins in the year ended December 31, 2020 as compared to the same period in 2019, due to more industry capacity coming online and weaker demand in the oil and gas market. The O&P Europe business experienced lower olefin margins in the year ended December 31, 2020 as compared to the same period in 2019, as a result of the COVID-19 pandemic which impacted olefin demand and decreased margins. O&P Europe polymer margins were also lower during 2020, although the business benefitted from strong demand from the consumables sector, specifically healthcare and food packaging consumables which boosted sales volumes and helped minimise the impact on margins from the slowdown in the durables sector as a result of the COVID-19 pandemic. Polymers also benefitted from strong demand in China which helped export sales as Europe remained globally competitive. The O&P Europe business also benefitted from the start-up of the new Mariner East 2 LPG pipeline and supply chain and the commencement of a new ethane supply contract within its Trading & Shipping business. Overall inventory holding losses for the O&P businesses were approximately €43 million in the year ended December 31, 2020, as compared to inventory holding losses of approximately €56 million in the same period in 2019. Chemical Intermediates also experienced a decrease in profitability in the year ended December 31, 2020 as compared to the same period in 2019 driven by lower margins across most businesses and lower sales volumes in certain businesses due to COVID-19 related market weakness impacting demand.

Distribution costs. Distribution costs decreased by €22.3 million, approximately 9.7%, to €207.4 million for the year ended December 31, 2020 as compared to €229.7 million for the year ended December 31, 2019. The fall in distribution costs in the year ended December 31, 2020 as compared to the same period in 2019 reflected the lower sales volumes in the year within the Group.

Administrative expenses. Administrative expenses decreased by €53.5 million, approximately 12.1%, to €387.5 million for the year ended December 31, 2020 as compared to €441.0 million for the year ended December 31, 2019. The decrease in administrative expenses was primarily due to lower employee performance bonus accruals (including long term incentive plans) following a weaker than budgeted performance across all the businesses within the Group in the year ended December 31, 2020 as compared to the year ended December 31, 2019, together with a focus on reduced fixed costs in response to the COVID 19 pandemic during 2020.

Exceptional administrative expenses. Exceptional administrative expenses of €8.9 million were charged for the year ended December 31, 2020, which related to a provision for early retirement costs as part of a restructuring of the Koln site within the O&P Europe business. Exceptional administrative expenses of €48.1 million were charged for the year ended December 31, 2019, which related to €35.1 million in respect for closure costs including severance and outplacement expenses, together with decommissioning and demolition costs following the Group's decision to close the Nitriles facility at Seal Sands, United Kingdom in December 2019. There was also a €13.0 million settlement of an intellectual property dispute in respect of the former Technologies business.

Operating profit. Operating profit decreased by €551.9 million, approximately 45.5%, to €659.9 million for the year ended December 31, 2020 as compared to €1,211.8 million for the year ended December 31, 2019.

Share of (loss)/profit of associates and jointly controlled entities. Share of (loss)/profit of associates and jointly controlled entities was a loss of €210.0 million for the year ended December 31, 2020 as compared to a profit of €67.0 million for the year ended December 31, 2019. The share of loss from associates and jointly controlled entities primarily reflected the Group's share of the results of the Refining joint venture with PetroChina. Refining volumes were adversely impacted by the COVID 19 virus pandemic in the year ended December 31, 2020, which reduced demand for many refined products. Margins in the European refining market have weakened in the year ended December 31, 2020 as compared to the same period in 2019, driven by reduced demand and falling crude oil prices, which have resulted in significant inventory holding losses in the year.

Profit on disposal of investments. Profit on disposal of investments for the year ended December 31, 2020 was €78.3 million and related to the disposal of the Group's previously held equity interest in the Gemini HDPE joint venture following the Group's acquisition of the remaining 50% interest in the joint venture from Sasol. Profit on disposal of investments for the year ended December 31, 2019 was €2.6 million and related to the repayment of the Group's preferential interest in INEOS Investments Partnership following the sale by INEOS Investments Partnership of its assets (shares in PQ Corporation) to INEOS Limited, a related party, for \$296.5 million (€260.5 million).

Profit on disposal of fixed assets. Profit on disposal of fixed assets for the year ended December 31, 2020 was €1.1 million.

Profit before net finance costs. Profit before net finance costs decreased by €752.1 million, approximately 58.7%, to €529.3 million for the year ended December 31, 2020 as compared to €1,281.4 million for the year ended December 31, 2019.

Finance income. Finance income increased by €227.3 million, approximately 249.8%, to €318.3 million for the year ended December 31, 2020 as compared to €91.0 million for the year ended December 31, 2019. The increase in finance income for the year ended December 31, 2020 as compared to 2019 primarily reflected an increase in net foreign exchange gains, partly offset by a reduction in interest income on cash balances and other loan receivables. The increase in net foreign exchange gains primarily associated with short term intra group funding was a gain of €250.2 million in the year ended December 31, 2020 as compared to a gain of €6.8 million for the same period in 2019. During the year ended December 31, 2020 there was also a net fair value gain on derivatives of €5.8 million.

Finance costs. Finance costs decreased by €124.9 million, approximately 29.7%, to €296.2 million for the year ended December 31, 2020 as compared to €421.1 million for the year ended December 31, 2019. The decrease in finance costs for the year ended December 31, 2020 primarily reflected a combination of a decrease in net fair value losses on derivatives and a reduction in variable interest rates on the dollar denominated Term Loans in the year. There was a net fair value gain on derivatives of €5.8 million for the year ended December 31, 2020 (included in finance income) as compared to a net loss of €95.4 million in the same period in 2019.

Exceptional finance costs. Exceptional finance costs of €11.7 million were charged for the year ended December 31, 2019 as a result of the early redemption of the Senior Secured Notes due 2023, which included an early prepayment premium of €7.7 million and the write-off of deferred issue costs associated with the redeemed Notes of €4.0 million.

Profit before tax. Profit before tax decreased by €388.2 million, approximately 41.3%, to €551.4 million for the year ended December 31, 2020 as compared to €939.6 million for the year ended December 31, 2019.

Tax credit/(charge). Tax credit/(charge) decreased by €241.1 million, approximately 111.5%, to a credit of €24.8 million for the year ended December 31, 2020 as compared to a charge of €216.3 million for the year ended December 31, 2019. The decrease in the tax charge was primarily due to the decreased profitability of the Group, together with the recognition of specific tax refunds available in the US. The Group has recognised tax refunds due in the US in accordance with the recently enacted CARES Act. This Act allows the Group to carry back available net operating losses in the US for the years ended December 31, 2020 and 2019 for a period of up to five years to obtain retroactive tax refunds at the tax rates applicable for the years the losses are utilised. Net operating losses were created in the US by the application of 100% tax depreciation on significant capital expenditure projects that were placed into service in the years ended December 31, 2020 and 2019. The effective tax rate for the Group for the year ended December 31, 2019 was lower than the standard rate in Luxembourg of 24.94% as profits were made in regions with lower rates (such as UK and Switzerland) which more than offset profits made in regions with higher rates than the standard rate (such as Germany and Belgium).

Profit for the year. Profit for the year decreased by €147.1 million, approximately 20.3%, to €576.2 million for the year ended December 31, 2020 as compared to €723.3 million for the year ended December 31, 2019.

Business segments

The Group reports under three business segments: O&P North America, O&P Europe and Chemical Intermediates.

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

	For the year ended December 31,	
	2020	2019
	<i>(€ in millions)</i>	
<i>Revenue</i>		
Continuing operations		
O&P North America	2,785.0	3,200.8
O&P Europe	4,658.3	5,861.9
Chemical Intermediates	5,352.9	6,486.8
Eliminations	(1,492.5)	(1,844.5)
	<u>11,303.7</u>	<u>13,705.0</u>
 <i>EBITDA before exceptionals</i>		
Continuing operations		
O&P North America	554.2	726.8
O&P Europe	395.3	591.4
Chemical Intermediates	585.5	626.9
	<u>1,535.0</u>	<u>1,945.1</u>

O&P North America

Revenue. Revenue in the O&P North America segment decreased by €415.8 million, or 13.0%, to €2,785.0 million for the year ended December 31, 2020, as compared to €3,200.8 million for the year ended December 31, 2019. The decrease was primarily driven by lower prices and to a lesser extent lower volumes in the year ended December 31, 2020 as compared to the year ended December 31, 2019. The weighted average sales price for the whole business was lower in the year ended December 31, 2020 as compared to the same period in 2019, as the polymers and pipe businesses all experienced a fall in prices whilst olefin prices remained relatively flat. Sales volumes were only marginally lower in the year ended December 31, 2020 as compared to the same period in 2019, largely due to lower polyethylene volumes being offset by higher olefin and polypropylene volumes. The pipe business experienced lower sales volumes in the year ended December 31, 2020 as compared to the same period in 2019, largely as a result of more industry capacity coming online and a weaker oil and gas market in 2020.

EBITDA before exceptionals. EBITDA before exceptionals in the O&P North America segment decreased by €172.6 million, or 23.7%, to €554.2 million for the year ended December 31, 2020 as compared to €726.8 million for the year ended December 31, 2019. The fall in profitability in the year ended December 31, 2020 as compared to the year ended December 31, 2019 was largely due to lower margins partially offset by inventory holding gains. In addition, there was a scheduled major turnaround of one of the Chocolate Bayou crackers during 2020, which adversely impacted results in the year. Overall margins were lower in the year ended December 31, 2020 as compared to the same period in 2019 as polymer margins were lower, driven by decreased polyethylene and polypropylene margins, largely as a result of weaker demand due to COVID-19 disruption and additional polypropylene capacity coming online. The pipe business experienced lower margins in the year ended December 31, 2020 as compared to the same period in 2019, due to more industry capacity coming online and weaker demand in the oil and gas market. Total sales volumes decreased marginally in the year ended December 31, 2020 as compared to the same period in 2019, largely driven by lower polyethylene volumes, partially offset by higher olefin and polypropylene volumes. Inventory holding gains were approximately €54 million in the year ended December 31, 2020, as compared to inventory holding losses of approximately €43 million in the same period in 2019.

O&P Europe

Revenue. Revenue in the O&P Europe segment decreased by €1,203.6 million, or 20.5%, to €4,658.3 million for the year ended December 31, 2020 as compared to €5,861.9 million for the year ended December 31, 2019. The decrease in revenues was driven by lower selling prices partially offset by higher polymer and Trading & Shipping sales volumes in the year ended December 31, 2020 as compared to the year ended December 31, 2019. The decrease in selling prices was driven by the general price environment, which was lower in the year ended December 31, 2020 as compared to the same period in 2019, as crude oil prices fell to an average of \$42/bbl for the year ended December 31, 2020 as compared to an average of \$64/bbl for the year ended December 31, 2019, which in turn led to a fall in prices across most product lines. Butadiene prices experienced the most significant price decrease compared to the same period in 2019, due to a considerably weaker automotive market. Other olefin products also experienced a price reduction compared to the same period in 2019, generally as a result of oversupply and weaker demand. The polymers business also experienced price reductions in the year, especially in the automotive and construction markets. The fall in these markets was partially offset by continued high demand for medical and food packaging consumables as a result of the COVID-19 pandemic. The business experienced higher Trading & Shipping sales volumes in the year ended December 31, 2020 as compared to the same period in 2019 primarily due to the start-up of the Mariner East 2 LPG pipeline and supply chain, and the commencement of a new ethane supply contract. In addition, the polymers business experienced higher sales volumes in the year ended December 31, 2020 as compared to the same period in 2019 as there was strong demand in the medical and food packaging consumables sectors, together with the construction and piping sectors rebounding in the last quarter of 2020 following the adverse impact on demand of the COVID-19 pandemic earlier in the year. Strong demand in China also helped export sales as Europe remained globally competitive, which helped offset some of the weaker European demand. Olefin sales volumes were lower in the year ended December 31, 2020 as compared to same period in 2019 due to reduced demand particularly in the automotive industry and the adverse impact on volumes of a scheduled major turnaround of one of the Koln crackers during the year.

EBITDA before exceptionals. EBITDA before exceptionals in the O&P Europe segment decreased by €196.1 million or 33.2% to €395.3 million for the year ended December 31, 2020, as compared to €591.4 million for the year ended December 31, 2019. The results for the year ended December 31, 2020 have decreased compared to the year ended December 31, 2019, due to lower margins and higher inventory holding losses which were only partially offset by higher polymer and Trading & Shipping sales volumes. Inventory holding losses were approximately €97 million in the year ended December 31, 2020 as compared to losses of approximately €13 million in the year ended December 31, 2019. Higher inventory holding losses were driven by the reduction in feedstock prices, particularly naphtha, in the year. Olefins margins were also lower for the year ended December 31, 2020 as compared with the same period in 2019 as a result of reduced demand due to the COVID-19 pandemic which impacted olefin volumes and reduced margins. There was also a scheduled major turnaround of one of the Koln crackers in the year ended December 31, 2020, which adversely impacted results for the year. Polymer margins were also lower during 2020, although the business benefitted from strong demand from the consumables sector, specifically healthcare and food packaging consumables, which boosted sales volumes and helped minimise the impact on margins from the slowdown in the durables sector as a result of the COVID-19 pandemic. Polymers also benefitted from strong demand in China which helped European export sales. The Trading & Shipping business experienced lower margins in the year ended December 31, 2020 compared to the same period in 2019 due to adverse market conditions, although this was offset by higher sales volumes due to the start-up of the Mariner East 2 LPG pipeline and supply chain operations and the commencement of a new ethane supply contract during 2020.

Chemical Intermediates

Revenue. Revenue in the Chemical Intermediates segment decreased by €1,133.9 million, or 17.5%, to €5,352.9 million for the year ended December 31, 2020 as compared to €6,486.8 million for the year ended December 31, 2019. The Oxide business revenues decreased in the year ended December 31, 2020 as compared to the year ended December 31, 2019 driven by lower prices, partially offset by higher volumes. Overall prices decreased in the year ended December 31, 2020 as compared to the same period in 2019, as pricing closely followed the sharp fall in underlying raw material costs of ethylene and propylene in the second quarter of 2020, which did not fully recover by the end of year. Alkox products also experienced a fall in prices in the year ended December 31, 2020 as compared to the same period in 2019, driven by weaker demand due to the adverse impact of COVID-19 on demand throughout most of 2020. Sales volumes experienced a small increase in the year ended December 31, 2020 as compared to the same period in 2019, as the adverse impact of COVID-19 on commodity product volumes was offset by an increase of specialised products in the cleaning and surfactant sectors. The Oligomers business revenues were lower in the year ended December 31, 2020 as compared to the year ended December 31, 2019, as a result of both lower sales volumes and lower prices. Sales volumes were approximately 4% lower in the year ended December 31, 2020 as compared to the same period in 2019 as most products experienced a decline. The lower sales volumes were the result of the COVID-19 pandemic with PAO and SO products experiencing the biggest decreases, whilst LAO was only marginally down on 2019 levels. Prices decreased in line with the movement in the underlying raw material prices in the year ended December 31, 2020 as compared to the year ended December 31, 2019, however an effective product mix strategy was utilised such that the reduction in realisation levels was smaller than that of the underlying raw material prices. Nitriles revenues decreased in the year ended December 31, 2020 as compared to the year ended December 31, 2019, driven by lower selling prices partially offset by higher sales volumes. The average acrylonitrile sales price was approximately 19% lower in the year ended December 31, 2020 as compared to the same period in 2019, driven by the fall in feedstock costs and market weakness, with the US market being predominately cost plus pricing. Sales volumes of acrylonitrile increased by approximately 5% in the year ended December 31, 2020 as compared to the same period in 2019, as the adverse impact of the COVID-19 pandemic on volumes throughout most of 2020 was less than the impact of the unplanned outages at Green Lake and Seal Sands during 2019. Revenues of the Phenol business decreased in the year ended December 31, 2020 as compared to the year ended December 31, 2019 due to falling prices and lower sales volumes. Phenol and acetone sales volumes were approximately 8% lower in the year ended December 31, 2020 as compared to the same period in 2019 as a result of falling market demand, intensified by the global COVID-19 pandemic, and an unplanned outage at the Antwerp plant during the year. Selling prices moved in line with the underlying raw material prices with phenol prices decreasing in the year ended December 31, 2020 as compared to the same period in 2019, in line with a decline in benzene prices, whilst acetone prices were also lower, reflecting the fall in propylene feedstock prices.

EBITDA before exceptionals. EBITDA before exceptionals in the Chemical Intermediates segment decreased by €41.4 million, or 6.6%, to €585.5 million for the year ended December 31, 2020 as compared to €626.9 million for the year ended December 31, 2019. The Oxide business results in the year ended December 31, 2020 decreased as compared to the year ended December 31, 2019, driven by lower margins. The decrease in margins in the year ended December 31, 2020 as compared to the same period in 2019 was a result of weaker margins on both commodity and specialised products due to the adverse effect of COVID-19 on the general economic climate and increased competition which put margins under pressure. Some margin relief was seen in the last quarter of 2020 due to increased demand from Asia and some competitor outages in Europe. The Oligomers business profitability declined in the year ended December 31, 2020 as compared with the year ended December 31, 2019, primarily due to lower margins and lower volumes. The lower margins were the result of LAO margins being adversely impacted across all regions as supply into the automotive, drilling fluid and lubricant markets were impacted by COVID-19 related market weakness. PAO and SO margins for the year ended December 31, 2020 set new records as strong European and North American margins offset weaker Asian margins. Strong hi-viscosity sales supported the record PAO margins, whilst record SO margins benefitted from holding realisations above declining feedstock costs. Volumes were lower in the year ended December 31, 2020 as compared to the same period in 2019 as a result of the impact of the COVID-19 pandemic on market demand. The Nitriles business experienced an increase in profitability in the year ended December 31, 2020 as compared to the same period in 2019, primarily due to higher sales volumes and lower fixed costs, partially offset by lower margins. Sales volumes of acrylonitrile increased by approximately 5% in the year ended December 31, 2020 as compared to the same period in 2019, as the adverse impact that the COVID-19 pandemic had on volumes was less than the impact of the unplanned outages at Green Lake and Seal Sands during 2019. The closure of the Seal Sand facility in December 2019 has led to reduced fixed costs during the year ended December 31, 2020 as compared to 2019. Margins decreased in the year ended December 31, 2020 as compared to the same period in 2019 due to the negative impact of the COVID-19 pandemic on market demand. The Phenol business profitability increased in the year ended December 31, 2020 as compared to the year ended December 31, 2019,

primarily due to higher margins, partially offset by lower volumes. Margins were higher in the year ended December 31, 2020 as compared to the same period in 2019, driven by higher acetone returns and lower energy costs. Volumes were lower in the year ended December 31, 2020 as compared to the year ended December 31, 2019 primarily due to lower market demand as a result of the COVID-19 pandemic and an unplanned outage at the Antwerp plant during the year.

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, and to fund growth in our working capital.

Our primary sources of liquidity are cash flows from operations of subsidiaries, cash on our balance sheet and borrowings under the Receivables Securitization Program and Inventory Financing Facility. 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 future borrowings under the Receivables Securitization Program and Inventory Financing Facility, will be sufficient to fund our working capital requirements, anticipated capital expenditures and debt service requirements as they become due, although this may not be the case.

Financing Arrangements

The Group's capital structure includes a mixture of secured term loans and secured notes. These various debt instruments are denominated in both Euros and US Dollars where appropriate, to approximately match the main currencies of the cash flows generated by the Group's operations.

The Group has a €800.0 million Receivables Securitization Facility in place, which matures in December 2024. The Group also has an Inventory Financing Facility in place, which matures in June 2022, although this is extendable by mutual agreement.

The Group has a €300.0 million Letter of Credit facility. Under the terms of the facility the Group undertakes to provide cash collateral to cover any letters of credit, guarantees, bonds or indemnities issued under the facility.

Following the Group's purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the Kerling group in July 2015, the Group assumed the obligations of loan facility of Noretyl AS. In November 2019 following the repayment of the initial loan the term loan facility was amended and restated with a new facility amount of €250.0 million (the 'Rafnes Facility'). The facility matures in November 2024.

As part of a project at the Group's Koln site to replace part of its incineration or cogeneration unit, the Group entered into a €120.0 million loan facility which matures in December 2024, together with a €60.0 million additional loan facility which matures in June 2026.

As part of the Group's purchase of the remaining 50% interest in the Gemini HDPE plant in Texas, USA, from Sasol Chemicals on December 31, 2020, the Group amended and upsized the existing Term Loan facility within the acquired legal entity. The amended loan facility was upsized to \$600.0 million and matures on October 31, 2027.

As of December 31, 2021, the Group had a total of €4,851.1 million Senior Secured Term Loans, €550.0 million Senior Secured Notes due 2025, €325.0 million Senior Secured Notes due March 2026 and €770.0 million Senior Secured Notes due May 2026 and a €141.0 million Schuldschein Loan facility outstanding.

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 years ended December 31, 2021, 2020 and 2019 capital expenditures analyzed by business segment were as follows:

	<u>For the year ended December 31,</u>		
	<u>2021</u>	<u>2020</u>	<u>2019</u>
	(€ in millions)		
O&P North America.....	163.2	547.0	590.3
O&P Europe	285.8	407.6	276.9
Chemical Intermediates	360.0	356.4	512.8
Total	809.0	1,311.0	1,380.0

The main capital expenditures for the year ended December 31, 2021 related to further expenditure within the O&P North America segment on a debottleneck project at the Chocolate Bayou, USA site and expenditure on a SAP system upgrade. The main capital expenditures in the O&P Europe segment were at the Koln, Germany site on completion of the cogeneration project and the life cycle cracker project, together with turnaround spend at the Lillo, Belgium and Koln, Germany sites. The main expenditure in the Chemical Intermediates segment was further growth expenditure by the Phenol business on the new cumene unit project at Marl, Germany and new Phenol terminal at Pasadena, USA together with turnaround spend at the Mobile, USA site. There was further growth expenditure by the Oligomers business on the LAO and PAO platforms and barge dock at the Chocolate Bayou, USA site. There was also expenditure within the Oxide business on a planned turnaround and catalyst change at the Koln, Germany site and planned turnarounds at the Antwerp, Belgium and Hull, UK sites. The remaining capital expenditure related primarily to sustenance expenditure.

The main capital expenditures for the year ended December 31, 2020 related to further expenditure within the O&P North America segment on a furnace replacement project, debottleneck and major scheduled turnaround on one of the crackers at Chocolate Bayou, USA, together with expenditure on an office building at the site and a number of smaller turnarounds and projects. The main capital expenditures in the O&P Europe segment were at the Koln, Germany site on completion of the cogeneration project and further expenditure on a new jetty, together with a major scheduled turnaround on one of the crackers at the site. In addition, there was expenditure on a planned propane dehydrogenation ('PDH') unit and new ethane cracker at the Antwerp, Belgium site (the PDH project has subsequently been cancelled and impaired). The main expenditure in the Chemical Intermediates segment was further growth expenditure by the Oligomers business on the LAO and PAO platforms as well as a barge dock. There was also expenditure within the Oxide business at the Antwerp, Belgium site in respect of a planned turnaround. The Phenol business also had expenditure on a new cumene unit project at Marl, Germany. The remaining capital expenditure related primarily to sustenance expenditure.

The main capital expenditures for the year ended December 31, 2019 related to further expenditure within the O&P North America segment on a furnace replacement project, a cogeneration project and a debottleneck of one of the crackers at Chocolate Bayou, together with a number of smaller turnarounds and growth projects. The main capital expenditures in the O&P Europe segment were at the Koln site on a cogeneration project, new office buildings and a jetty, together with a turnaround on a small butadiene unit. The main expenditure in the Chemical Intermediates segment was additional growth expenditure by the Oligomers business on the LAO and PAO platforms and a barge dock at Chocolate Bayou, USA as well as expenditure on LAO railcars. There was also expenditure within the Oxide business at the Antwerp, Belgium site in respect of commissioning the alkox 6 unit and EO storage project which came into operation during the first quarter of 2019, as well as some turnaround costs. The Phenol business also had expenditure on a new cumene unit project in Germany whilst the Nitriles business had expenditure on a turnaround on its ammonia unit in Koln. The remaining capital expenditure related primarily to sustenance expenditure.

Working Capital

We anticipate that our working capital requirements will vary due to changes in raw material costs, which affect inventory and account receivables levels, and 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 our Receivables Securitisation Facility and Inventory Financing Facilities.

Cash Flows

During the years ended December 31, 2021, 2020 and 2019 our net cash flow was as follows:

	For the year ended December 31,		
	2021	2020	2019
		(€ in millions)	
Cash flow from operating activities	2,738.7	1,886.2	2,085.5
Cash flow used in investing activities	(639.9)	(1,553.7)	(1,162.9)
Cash flow (used in)/from financing activities	(1,465.1)	96.4	(2,027.2)

Cash flows from operating activities

Net cash flow from operating activities was an inflow of €2,738.7 million for the year ended December 31, 2021 compared to an inflow of €1,886.2 million for the year ended December 31, 2020. The inflow was due to the profit generated from operations, partly offset by working capital outflows of €739.9 million for the year ended December 31, 2021 compared to an inflow of €319.0 million for the year ended December 31, 2020. The working capital outflows for the year ended December 31, 2021 primarily reflected the higher working capital levels of the Group due to increased raw material prices, and consequently product prices, as crude oil prices increased significantly to an average of \$71/bbl for the year ended December 31, 2021 as compared to an average of \$42/bbl for the year ended December 31, 2020. In addition, overall sales volumes increased by approximately 9% for the year ended December 31, 2021 as compared to the year ended December 31, 2020 which also resulted in higher levels of working capital.

Net cash flow from operating activities was an inflow of €1,886.2 million for the year ended December 31, 2020 compared to an inflow of €2,085.5 million for the year ended December 31, 2019. The inflow was due to the profit generated from operations and working capital inflows of €319.0 million for the year ended December 31, 2020 compared to an inflow of €337.4 million for the year ended December 31, 2019. The working capital inflows for the year ended December 31, 2020 primarily reflected the lower working capital levels of the Group due to lower raw material prices, and consequently product prices, which decreased significantly as crude oil prices decreased to an average of \$42/bbl for the year ended December 31, 2020 as compared to an average of \$64/bbl for the year ended December 31, 2019.

Taxation payments of €109.7 million were made for the year ended December 31, 2021 compared to receipts of €68.2 million for the year ended December 31, 2020. The payments for the year ended December 31, 2021 primarily reflected tax payments in Switzerland, Germany, Belgium, Norway, Canada and the US, some of which had been deferred from 2020 in response to the coronavirus pandemic. These payments were partially offset by further tax refunds of \$270 million from the US under the CARES Act.

Taxation receipts of €68.2 million were received for the year ended December 31, 2020 compared to payments of €172.4 million for the year ended December 31, 2019. The net receipts for the year ended December 31, 2020 primarily reflected tax refunds from the US (including a refund under the CARES Act), partially offset by payments made to the tax authorities in Germany, Belgium, Canada and the UK. The payments for the year ended December 31, 2019 primarily reflect payments made to the tax authorities in the US, Germany, Canada, Belgium and Switzerland, partially offset by contributions received from related parties.

Cash flows used in investing activities

On December 31, 2021 the Group acquired the business and assets of Charter Plastics in Titusville, USA for cash consideration of €56.4 million (\$63.5 million). The business manufactures high density polyethylene (HDPE) pipe products.

In July 2014 the Group set up a joint venture with Sasol to build and operate an HDPE plant at the Battleground site in Texas, USA. The plant became fully operational in the fourth quarter of 2017. The Group received €0.7 million from the joint venture during the year ended December 31, 2020 (December 31, 2019: nil). On December 31, 2020 the Group acquired the remaining 50% interest in the joint venture for cash consideration of €187.3 million to become the 100% owner of the plant. Cash balances acquired with the business were €6.2 million. The purchase agreement provided for corrections for actual net working capital contributions compared to target which resulted in a final consideration payment of €0.4 million during the year ended December 31, 2021.

In October 2020 the group invested €1.6 million into a joint venture set up with a Chinese partner to jointly develop Acrylonitrile technology for use within the Chinese market, and to protect against mis-use of technology where appropriate. During 2021 the Group invested a further €3.3 million into the joint venture.

On November 1, 2016 the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high-density polyethylene (HDPE) pipe manufacturers in North America. During the year ended December 31, 2020 the Group paid a further €15.6 million (December 31, 2019: €15.0 million) in relation to the acquisition. This payment was the final instalment of the contingent consideration which was subject to the acquired business achieving certain targets over a three year period.

In March 2019 the Group received cash proceeds of €260.5 million (\$296.5 million) in respect of the repayment of the Group's preferential interest in INEOS Investments Partnership following the sale by INEOS Investments Partnership of its assets (shares in PQ Corporation) to INEOS Limited, a related party.

On March 1, 2019 the Group acquired the INESCO combined heat and power plant from RWE Generation NL B.V for cash consideration of €70.4 million. Cash balances acquired with the business were €41.9 million.

In July 2019 the Group acquired a shale oil & gas business located in the Giddings Field in Texas, USA for cash consideration of €27.2 million.

During 2015 the Group provided a loan of \$623.7 million (€568.4 million) to INEOS Upstream Limited, a related party, in connection with its acquisition of natural gas assets in the North Sea. The loan facility is unsecured, matures in June 2024 and bears interest at 7% per annum. In September 2017, INEOS Upstream Limited, a related party, acquired further natural gas assets in the North Sea through its acquisition of the entire oil and gas business of DONG Energy A/S. In connection with the DONG Acquisition, the Group advanced a further loan of \$376.2 million (€315.7 million) to INEOS Upstream Limited, the proceeds of which were on-lent to certain of its subsidiaries. The loan is unsecured, matures in June 2024 and bears interest at 7% per annum. During 2021 no loan repayments were received (2020: nil, 2019: nil), leaving \$617.1 million (€544.6 million) outstanding under the facility as at December 31, 2021 (2020: \$617.1 million (€501.7 million), 2019: \$617.1 million (€550.8 million)). During the year ended December 31, 2021 the Group received interest of nil million (December 31, 2020: nil million, December 31, 2019: €39.5 million) relating to the loans.

Following the settlement of derivative commodity contracts, the Group received €257.8 million during the year ended December 31, 2021 (December 31, 2020: €0.7 million, December 31, 2019: nil).

During the year ended December 31, 2021, the Group spent €31.0 million (December 31, 2020: €53.6 million, December 31, 2019: €44.5 million) on intangible assets primarily related to the purchase of carbon emission credits.

There were no other significant cash flows from investing activities for the years ended December 31, 2021, 2020 and 2019 other than the acquisition of property, plant and equipment (see “—Capital Expenditures” above).

Cash flows used in financing activities

Interest payments of €466.0 million were made for the year ended December 31, 2021 compared to €349.1 million for the year ended December 31, 2020. The interest payments during the year ended December 31, 2021 related primarily to monthly cash payments in respect of the Senior Secured Term Loans, quarterly interest payments on the Gemini Facility, and semi-annual interest payments on the Senior Secured Notes due 2025, Senior Secured Notes due March 2026 and Senior Secured Notes due May 2026. In addition, there was interest paid on lease liabilities of €41.9 million, together with the settlement of derivative commodity contracts of €162.7 million. There were also semi-annual interest payments on the Senior Notes due 2024, together with a final interest payment when these Notes were redeemed in November 2021.

Interest payments of €349.1 million were made for the year ended December 31, 2020 compared to €329.7 million for the year ended December 31, 2019. The interest payments during the year ended December 31, 2020 related primarily to monthly cash payments in respect of the Senior Secured Term Loans, semi-annual interest payments on the Senior Notes due 2024, Senior Secured Notes due 2025 and Senior Secured Notes due May 2026 and interest paid on lease liabilities of €46.3 million, together with the settlement of derivative commodity contracts of €88.6 million. The interest payments during the year ended December 31, 2019 related

primarily to monthly cash payments in respect of the Senior Secured Term Loans, semi-annual interest payments on the Senior Notes due 2024, Senior Secured Notes due 2025 and Senior Secured Notes due May 2026, together with interest paid on lease liabilities of €48.5 million following the adoption of the new accounting standard IFRS 16 Leases and €41.0 million on the settlement of derivative commodity contracts. In addition, there was a final interest payment and early prepayment premium of €7.7 million on the Senior Secured Notes due 2023, which were redeemed in April 2019.

The Group made repayments of €99.1 million (December 31, 2020: €172.1 million repayments, December 31, 2019: €6.4 million drawdown) on the Securitization Facility during the year ended December 31, 2021. In December 2021 the Group entered into an amendment agreement to extend the maturity of the Securitization Facility to December 2024 and paid associated debt issue costs of €0.2 million in relation to the Securitization Facility amendment. In December 2019 the Group paid associated debt issue costs of €1.2 million in relation to a Securitization Facility amendment.

In June 2019 the Group entered into an Inventory Financing Facility and made drawdowns of €114.2 million (December 31, 2020: repayments of €62.1 million, December 31, 2019: drawdowns of €190.9 million) during the year ended December 31, 2021. The Group paid associated debt issue costs of €0.1 million (December 31, 2019: €0.9 million) in relation to the Inventory Financing Facility during the year ended December 31, 2020.

In November 2021 the Group raised €1,073.6 million of Senior Secured Term Loans which was used together with cash on hand to fully redeem the outstanding Senior Notes due 2024 of €1,078.2 million. The additional Senior Secured Term Loans mature on November 8, 2028 and consisted of \$845 million of US dollar denominated Term Loans and €350 million of euro denominated Term Loans. The Group paid associated debt issue costs of €10.3 million in relation to the new loans during the year ended December 31, 2021. In October 2020, the Group issued new euro denominated Senior Secured Term Loans of €375 million which mature on October 27, 2027. The Group paid associated debt issue costs of €7.9 million in relation to the new loan during the year ended December 31, 2020. The Group made scheduled repayments of €38.3 million (December 31, 2020: €35.1 million, December 31, 2019: €35.6 million) on the Senior Secured Term Loans during the year ended December 31, 2021.

On December 31, 2020 the Group acquired the remaining 50% interest in the Gemini joint venture to become the 100% owner of the HDPE plant in Texas, USA. The Group amended and upsized the existing Term Loan facility within the acquired Gemini legal entity to \$600.0 million. The proceeds from the upsized loan were used to repay the previous facility resulting in a net cash inflow of €201.1 million which was used to fund the acquisition from Sasol. The facility matures on October 31, 2027. The Group paid associated debt issue costs of €10.1 million in relation to the Gemini loan facility during the year ended December 31, 2020. During the year ended December 31, 2021 the Group has made scheduled loan repayments of €16.8 million.

In November 2020, the Group entered into a separate bank loan agreement to fund specific capital expenditure on a new cumene unit at Marl, Germany for the Phenol business resulting in an inflow of €10.0 million. During the year ended December 31, 2021 the Group made scheduled repayments of €0.4 million.

In October 2020 the Group issued €325 million Senior Secured Notes due March 2026. The Group paid further associated debt issue costs of €0.3 million (December 31, 2020: €4.5 million) in relation to the Senior Secured Notes during the year ended December 31, 2021.

As part of the Koln project to replace part of its incineration or cogeneration unit, the Group entered into a €120 million loan facility. The Group made scheduled loan repayments of €24.0 million on the Koln CoGen Facility during the year ended December 31, 2021 (December 31, 2020: €24.0 million, December 31, 2019: nil). As part of this project the Group also entered into an additional loan facility of €60.0 million in May 2021. The first repayments under this additional facility start in September 2022. The Group paid associated debt issue costs of €0.3 million in relation to the additional loan facility during the year ended December 31, 2021.

In November 2019 following the final scheduled repayment on the initial Noretyl loan of €27.5 million the term loan facility was amended and restated with a new facility (the Rafnes Facility) resulting in an inflow of €250.0 million. The Group paid associated debt issue costs of €0.1 million (December 31, 2019: €3.5 million) in relation to the renewal of the facility during the year ended December 31, 2020. During the year ended December 31, 2021 scheduled loan repayments of €35.7 million were made under the loan agreement.

In October 2019 the Group entered into a new IKB facility to fund some specific capital expenditure within the Nitriles business, resulting in a drawdown of €1.0 million for the year ended December 31, 2019. The Group has made scheduled loan repayments of €0.6 million on the IKB facility during the year ended December 31, 2021 (December 31, 2020: €0.4 million). As at December 31, 2021 the loan facility had been fully repaid.

In April 2019 the Group issued €770 million Senior Secured Notes due May 2026. The proceeds of the refinancing were used to redeem in full the €770 million Senior Secured Notes due 2023 on May 1, 2019. The Group paid associated debt issue costs of €8.8 million in relation to the refinancing of the Senior Secured Notes during the year ended December 31, 2019.

In March 2019 the Group entered into a €141 million floating rate Schuldschein Loan facility. The facility matures in March 2024. The Group paid associated debt issue costs of €2.5 million in relation to the Schuldschein Loan during the year ended December 31, 2019.

In June 2016, the Group entered into a separate bank loan agreement to fund specific capital expenditure on a freight rail car fleet covering North America for the Oligomers business. The Group has subsequently made a final full repayment of €11.8 million on the bank loan agreement during the year ended December 31, 2019. In August 2020, the Group entered into another freight rail car facility covering North America for the Oligomers business resulting in an inflow of €19.3 million. During the year ended December 31, 2021 scheduled loan repayments of €0.8 million (December 31, 2020: €0.3 million) were made under the loan agreement.

During the year ended December 31, 2021 the Group made payments of €141.9 million (December 31, 2020: €168.2 million, December 31, 2019: €128.4 million) in respect of the capital element of lease liabilities, following the adoption of the new accounting standard IFRS 16 Leases in 2019.

The Company made total dividend payments of €800.0 million (December 31, 2020: nil, December 31, 2019: €2,066.6 million) in the year ended December 31, 2021.

Net debt

Total net debt as at December 31, 2021 was €5,679.1 million (December 31, 2020: €6,288.4 million). The Group held net cash balances of €2,106.1 million as at December 31, 2021 (December 31, 2020: €1,342.2 million) which included restricted cash of €146.4 million used as collateral against bank guarantees and letters of credit. The Group had availability under the undrawn receivables securitization facility of €782.0 million as at December 31, 2021.

Total net debt as at December 31, 2020 was €6,288.4 million (December 31, 2019: €5,904.4 million). The Group held net cash balances of €1,342.2 million as at December 31, 2020 (December 31, 2019: €982.9 million) which included restricted cash of €167.2 million used as collateral against bank guarantees and letters of credit. The Group had availability under undrawn working capital facilities of €393.8 million as at December 31, 2020.

The Group entered into three interest rate swap contracts effective June 2020 to hedge the variable interest rate exposure on \$1.2 billion of the USD denominated Senior Secured Term Loans. On a quarterly basis, the Group will receive 3-month USD LIBOR and pay a fixed rate. These derivative instruments expire in June 2025.

Quantitative and Qualitative Disclosures About Market Risk

In the ordinary course of our business, we are exposed to a variety of market risks arising from fluctuations in foreign currency exchange rates, interest rates and commodity prices. To manage these risks effectively, we may enter into hedging transactions and use derivative financial instruments, pursuant to established internal guidelines and policies, to mitigate the adverse effects of these market risks. We do not enter into financial instruments for trading or speculative purposes.

In the case of commodities, this exposure principally arises from movements in the prices of the feedstocks 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 are typically set on a quarterly, monthly or more frequent basis in line with industry practice. We seek to minimize reductions in our margins by passing through feedstock cost increases to our customers through higher prices for our products.

Our cash flows and earnings are subject to exchange rate fluctuations. In our European petrochemical business, product prices, certain feedstock costs and most other costs are denominated in euro and British pounds. From time to time, we may enter into foreign currency exchange instruments to minimize the short-term impact of movements in foreign exchange rates.

BUSINESS

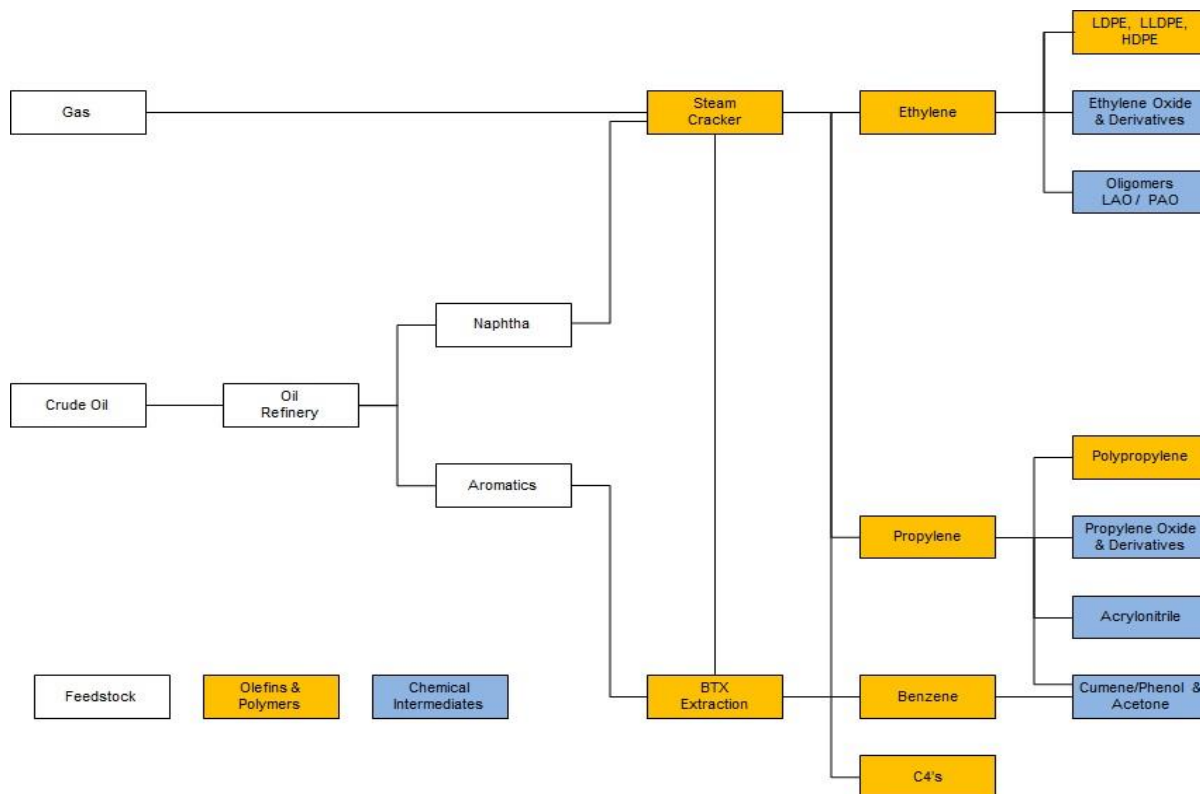
Introduction

We are one of the world's largest chemical companies as measured by revenue. Our business has highly integrated, world-class chemical facilities and production technologies. We have leading global market positions for a majority of our key products and a strong and stable customer base. We operate 33 manufacturing sites in six countries throughout the world. We are led by a highly experienced management team with, on a combined basis, over 100 years of experience in the chemical industry. As of December 31, 2021, our total chemical production capacity was approximately 23,100 kta, of which 55% was in Europe and 45% was in North America.

We operate our business through three segments: Olefins & Polymers Europe, Olefins & Polymers North America and Chemical Intermediates. The products we manufacture are derived from crude oil and natural gas, and include olefins, polymers and various petrochemical products directly or indirectly derived from olefins. Our products serve a broad and diverse range of end markets, including packaging, construction, automotive, white goods/durables, agrochemicals and pharmaceuticals.

Our highly integrated, world class production facilities and technological know how allow us to process raw materials into higher value-added products. In Europe we own two sites integrated with crackers and polymer units. Typically, these two sites account for approximately 76% of our European olefin and polymer volumes. The polyolefins plants on our two major sites in Europe receive more than 95% of their feedstock supply from our integrated crackers. Similarly, in the United States, much of our olefin feedstock requirements for our polymer business is supplied by either our Chocolate Bayou cracker in Texas or by integrated third party facilities, such as the Tesoro facility in Carson, California. We believe that with our highly integrated facilities we are able to capture attractive margins across the value chain, enjoy greater certainty of feedstock supply, reduce logistical costs, improve energy management and optimize our product slate.

The extent of our business integration from upstream to downstream for our major products is summarized as follows:



We benefit from the cost advantages of operating large-scale, well-invested, highly integrated facilities strategically located near major transportation facilities and customer locations. Since January 1, 2007, we and our predecessors have invested almost €10.0 billion (including investments in divested assets) in our production facilities to ensure that they operate efficiently, resulting in integrated, and state-of-the-art production units. This includes significant investments of almost €3.0 billion in the last four years to further enhance our assets' capabilities. 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 margin and cash flows even during downturns in industry cycles or customer demand. For the year ended December 31, 2021, our revenue was €18.8 billion and our EBITDA before exceptionals was €3.6 billion.

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 are particularly focused on expanding our footprint in Asia to further access the high demand growth of that region, which may take the form of joint ventures and unrestricted subsidiaries. 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.

Since April 1998, when INEOS was established with the acquisition of the Belgian "Oxide" assets from Inspec plc, we have significantly expanded, both through a series of strategic acquisitions of businesses and assets from major chemical companies, and through organic growth. The combination of INEOS and Innovene in December 2005 represented a transformational milestone for our company, providing global scale and further upstream integration.

The following table provides an overview of our capacity, global market position and leading regional market positions with respect to our key petrochemical products.

Key products	Full-year capacity as of December 31, 2021 ⁽¹⁾ (Kilotonnes)	Selected market positions ⁽¹⁾
Ethylene.....	5,112	#1 in Western Europe #7 in U.S.
Propylene.....	1,676	#4 in Western Europe #10 in U.S.
Butadiene.....	422	#1 in Western Europe
Polyethylene.....	3,538	#1 in Western Europe #6 in U.S.
Polypropylene.....	1,782	#5 in Western Europe #5 in U.S.
Ethylene Oxide.....	980	#1 in Western Europe #9 Globally
Ethanolamines.....	233	#3 in U.S. #3 Globally
Phenol.....	1,870	#2 in Western Europe #1 Globally #1 in Western Europe #1 in U.S.
Acetone.....	1,139	#1 Globally #1 in Western Europe #1 in U.S.
Acrylonitrile.....	1,044	#1 Globally #1 in Western Europe #1 in U.S.
Linear Alpha Olefins.....	1,002	#1 in Western Europe #3 Globally #3 in U.S.
Poly Alpha Olefins.....	230	#1 in Western Europe #2 Globally #2 in U.S.

Sources: NexantECA and Ineos - 2021

(1) The assets of INEOS Chemicals Grangemouth Limited and INEOS Commercial Services UK Limited were transferred out of IGH on October 1, 2013 in connection with the Grangemouth Divestiture, and the Lavéra Divestiture assets were transferred out of IGH on 1 July 2014; therefore, their capacity has been excluded from the full year capacity figures. However for the estimation of market ranking for IGH their capacities have been included since these assets remain within the broader INEOS family of companies and there has been no restriction to, or change in, the competitive dynamic that the assets exercise within the European market as a part of the INEOS family of companies. Therefore, in management's view, it is helpful to consider the Grangemouth and Lavéra assets in order to reflect the relative overall commercial strength of the INEOS family of companies, which is the same as that of O&P Europe within IGH.

Olefins & Polymers Europe and Olefins & Polymers North America

In our olefins and polymers businesses, we produce olefins, other cracker products, such as butadiene and benzene, and a broad range of polyolefin polymers. We are among the largest producers of olefins and polymers in the world. The focus of our olefins business in Europe and North America is on ethylene and propylene, which are the two largest volume olefins globally and are key building blocks for polymers. The olefins we make are primarily used as feedstock for our derivatives businesses. In addition, we sell olefins to third-party customers for a variety of industrial and consumer applications, including the manufacture of plastics, rubber and fiber. In our polymers business, we focus on polyethylene and polypropylene.

We operate a total of 19 sites for olefins and polyolefins, including our large integrated olefins cracker and polyolefin facilities at Köln, Germany, Rafnes, Norway, and Chocolate Bayou, Texas, United States and nine polyethylene pipe manufacturing sites within the United States. These facilities support our highly competitive proprietary polyolefin process technologies. The technologies include our cost-effective gas phase polypropylene technology, our specialized technology for high-density polyethylene and our flexible proprietary "swing" technology for both linear low-density and high-density polyethylene.

The North American and European markets for olefins and polyolefins are quite distinct, with separate pricing structures and distribution channels. As a result, each market may experience different rates of growth and levels of return. Therefore, we operate these two businesses separately and report them as two distinct segments—INEOS Olefins & Polymers Europe and INEOS Olefins & Polymers North America. For the year ended December 31, 2021, our Olefins & Polymers Europe and Olefins & Polymers North America businesses contributed €7.5 billion and €5.5 billion of revenue and €948.2 million and €1,577.2 million of EBITDA before exceptionals, respectively, excluding inter-segmental eliminations.

Chemical Intermediates

Chemical intermediates are higher-value-added chemical products used as key components in a wide variety of consumer and industrial products. In our Chemical Intermediates business, we utilize olefins as key raw materials and produce a wide range of products including phenol, acetone, alpha olefins, ethylene oxide and derivatives and nitriles.

We have four main product groups within our Chemical Intermediates business: INEOS Nitriles, INEOS Oligomers, INEOS Oxide and INEOS Phenol. Together they produce a wide range of products including phenol, acetone, alpha olefins, ethylene oxide and derivatives, acrylonitrile, ammonia and nitric acid. We have a total of 16 manufacturing sites globally, with many of our plants integrated either directly with their key raw materials on-site, or integrated via pipeline connection.

We are the world’s leading producer of phenol, which is an essential starting material for a wide range of applications in the electrical/electronics, automotive, construction and household/furniture industries. Our main product in the nitriles sector is acrylonitrile, which is used in the production of acrylic fibers and acrylonitrile butadiene styrene plastic. We are also among the largest volume suppliers of linear and poly alpha olefins in the world. According to NexantECA, we are the largest producer of ethylene oxide in Western Europe. We have a range of associated products, including ethylene glycol, propylene oxide, propylene glycol and acetate esters. We manufacture and supply high quality catalysts and additives in support of various technologies to major companies around the world, and also to our own manufacturing assets. For the year ended December 31, 2021, our Chemical Intermediates revenue and EBITDA before exceptionals were €8.5 billion and €1,090.8 million, respectively, excluding intersegmental eliminations.

Business Segments

Set forth below is a discussion of our business along the segment lines of Olefins & Polymers Europe, Olefins & Polymers North America and Chemical Intermediates in the following areas: products, manufacturing, raw materials and energy, transportation, customers and contracts, research and intellectual property and competition.

Olefins and Polymers

We operate two Olefins and Polymers businesses: Olefins & Polymers Europe and Olefins & Polymers North America. Set forth below is a general discussion of the products, manufacturing, research and intellectual property, transportation and competition, followed by a more detailed review of the products, manufacturing, raw materials and energy and customers and contracts, of our Olefins & Polymer Europe business and our Olefins & Polymers North America business.

Products

The following table provides an overview of our key olefin and polymer products and their principal applications. All market positions are provided by NexantECA, as measured by average annual capacity assessed as at December 31, 2021.

Key products	Principal applications	Selected market positions⁽⁴⁾
<i>Olefins and related products</i>		
Ethylene ⁽¹⁾	Polyethylene, polyvinyl chloride, ethylene oxide and styrene	#1 in Western Europe #7 in U.S.
Propylene ⁽²⁾	Polypropylene, acrylonitrile, cumene and propylene oxide	#4 in Western Europe #10 in U.S.

Key products	Principal applications	Selected market positions ⁽⁴⁾
Butadiene	Synthetic rubbers and acrylonitrile, butadiene styrene	#1 in Western Europe
Benzene	Styrene, cumene and nylon	#6 in Western Europe
<i>Polymers</i>		
Polyethylene (high density polyethylene, low density polyethylene, linear low density polyethylene)	Films for packaging, agricultural applications, molded products, pipes and coatings	#1 in Western Europe ⁽³⁾ #6 in U.S.
Polypropylene.....	Molded products, filaments, fibers and films	#5 in Western Europe #5 in U.S.

- (1) In Europe, we consume more ethylene than we produce, which allows us to operate our crackers in Europe at higher operating rates than the industry average. In North America, the olefin crackers at our Chocolate Bayou facility manufacture substantially more ethylene than is required by our polymers and derivatives units in the Gulf Coast region. As a result, we sell substantial amounts of the ethylene that we produce to customers in the Gulf Coast region of the United States.
- (2) In Europe and North America, we consume more propylene than we produce. Our propylene consumption is primarily related to the production of polypropylene, propylene oxide, oxo alcohols, phenol and acrylonitrile.
- (3) According to NexantECA, measured by average annual capacity, we are the second largest manufacturer of high-density polyethylene in Europe and the third largest manufacturer of linear low-density polyethylene in Europe.
- (4) The assets of INEOS Chemicals Grangemouth Limited and INEOS Commercial Services UK Limited were transferred out of IGH on October 1, 2013 in connection with the Grangemouth Divestiture, and the Lavéra Divestiture assets were transferred out of IGH on 1 July 2014. However for the estimation of market ranking for IGH their capacities have been included since these assets remain within the broader INEOS family of companies and there has been no restriction to, or change in, the competitive dynamic that the assets exercise within the European market as a part of the INEOS family of companies. Therefore, in management's view, it is helpful to consider the Grangemouth and Lavéra assets in order to reflect the relative overall commercial strength of the INEOS family of companies, which is the same as that of O&P Europe within IGH.

Source for market positions: NexantECA and INEOS.

- **Ethylene.** According to NexantECA, ethylene is the world's most widely used petrochemical in terms of volume, accounting for over one-third of the global production of primary petrochemicals. It is the key building block used to produce a large number of higher value added chemicals, including polyethylene, polyvinyl chloride via ethylene dichloride and styrene via ethylbenzene. Ethylene is a flammable gas and is a primary olefin obtained in a cracking process as previously described. Because ethylene is a gas, it must be transported either by pipeline or in the form of a highly pressurized and refrigerated liquid, which is expensive.

While ethylene itself has no consumer applications, demand for ethylene is driven essentially by its use as feedstock for various thermoplastics, which are plastics that soften when heated and harden again when cooled, including polyethylene and other polymer derivatives. Aside from being the feedstock for polyethylene production, demand for ethylene is also driven by the manufacture of ethylene oxide and derivatives, ethylene dichloride and ethyl benzene. According to NexantECA, the global market for ethylene is forecast to grow at 3.4% per annum through 2026 versus forecast GDP growth of 2.9% during the same period, driven by polyethylene applications such as high-density polyethylene and linear low-density polyethylene.

- **Propylene.** Propylene is a flammable gas which is derived as a co-product either of the refinery fluid catalytic cracker process used to make gasoline or of the steam cracking process used to make ethylene. More recently, propylene is also being produced from processes such as propane dehydrogenation and metathesis. Propylene is an important feedstock for a significant number of industrial products and is the main feedstock for polypropylene and acrylonitrile. Propylene is marginally easier to transport than ethylene and may be shipped by pipeline, road, rail or ship.

Global propylene demand is driven essentially by its use as feedstock for various thermoplastics and by the level of demand for propylene derivatives, particularly polypropylene, propylene oxide, acrylonitrile, oxo-alcohols, cumene and acrylic acid. Growth in the demand for polypropylene has stemmed from the substitution of non-polymers (paper, wood, glass and metal, etc.), due to a

relative cost advantage and superior performance. According to NexantECA, the global market for propylene is projected to grow at 3.4% per annum through 2026, driven by polypropylene demand.

- **Butadiene.** Butadiene is a gas and is one of the co-products of the steam cracking process used to manufacture ethylene and propylene. Butadiene is used primarily in the production of polymers, principally synthetic rubbers such as styrene-butadiene rubber, which is used to make tires and other rubber products. Other polymers made from butadiene include acrylonitrile-butadiene styrene and styrene-butadiene latex. Butadiene is also used to make ethylidene norbornene monomer.

Butadiene demand is driven primarily by growth in consumption of synthetic rubber. According to NexantECA, the global market for butadiene is projected to grow at an average of 2.6% per annum through 2026.

- **Benzene.** Benzene is used to produce a number of petrochemical intermediates, such as styrene, cumene for phenol and acetone, cyclohexane and nitrobenzene. It is mainly produced from refinery processes or as a co-product of steam cracker operations.

Styrene is the largest chemical outlet for benzene at around 49% of demand. The second largest outlet for benzene, accounting for 20% of demand, is cumene which is nearly all consumed in phenol production with acetone formed as a co product. For 2021, NexantECA estimated the global benzene demand to be 50.5 million tons, with just under 69% being consumed in the production of ethylbenzene for the styrenics industry and cumene for the phenolics industry. NexantECA forecasts an average global growth rate in demand of approximately 2.8% per year in the 2021-2026 period.

- **Polyethylene.** Polyethylene is the world's most widely used thermoplastic and is made by the polymerization of ethylene. Polyethylene is often classified by its density, because greater density corresponds with greater material rigidity.

Film is the largest single use of global polyethylene production and the primary driver of demand, representing approximately one half of worldwide polyethylene consumption. Film includes a myriad of end use applications, from food packaging to trash bags, stretch films and shrink films. Blow molding and injection molding are the next largest uses and are also important demand drivers. In the blow molded category, blow molded bottles are the single largest end use. NexantECA forecasts an average global growth rate in demand for polyethylene of approximately 2.9% per year in the 2021-2026 period.

- **Polypropylene.** Polypropylene is the world's second most widely used thermoplastic after polyethylene and is among the fastest growing categories of thermoplastics. It is manufactured by the polymerization of propylene. The rapid growth of polypropylene-based products reflects the superior cost and performance characteristics of this material. As one of the industry's most versatile polymers, polypropylene is achieving a portion of its growth by displacing other polymers, such as polyethylene and polystyrene.

According to NexantECA, the global polypropylene market is projected to grow at 3.3% per annum through 2026. NexantECA expects that the demand for polypropylene in Asia will continue to grow at higher rates than North America and Europe, primarily as a result of growth in the Chinese market.

Manufacturing

Olefins are produced primarily by the steam cracking of hydrocarbon feedstocks. In steam cracking, a gaseous or liquid hydrocarbon feed, such as naphtha, liquefied petroleum gas or ethane, is diluted with steam and briefly heated in a furnace without the presence of oxygen. Typically, the reaction temperature is very high, at around 850°C, but the reaction is only allowed to take place very briefly. In modern cracking furnaces, the reaction time is further reduced to milliseconds, resulting in gas velocities faster than the speed of sound, to improve yield. After the cracking temperature has been reached, the gas is quickly quenched to stop the reaction in a transfer line heat exchanger. The products produced in the reaction depend on the composition of the feed, the hydrocarbon-to-steam ratio and on the cracking temperature and furnace residence time.

Light hydrocarbon feeds, such as ethane, liquefied petroleum gas or light naphtha, yield product streams rich in the lighter alkenes, including ethylene, propylene and butadiene. Heavier hydrocarbon feeds (full-range and heavy naphthas, as well as other refinery products) yield some of these products too, but also yield products rich in aromatic hydrocarbons and hydrocarbons suitable for inclusion in gasoline or fuel oil. Higher cracking temperatures (also referred to as higher levels of “severity”) favor the production of ethylene and benzene, whereas lower cracking temperatures (lower levels of “severity”) produce higher amounts of propylene, C4-hydrocarbons and liquid products.

Depending on feedstock, varying levels of ethylene, propylene and other by-products are achieved. Ethane produces the most ethylene but the least propylene. Naphtha produces substantially less ethylene, roughly one-third of that of ethane, but produces more propylene and significantly more by-products.

The main polyolefins are the thermoplastics, polyethylene and polypropylene, which are produced by the polymerization of the olefin monomers ethylene and propylene, respectively. While the majority of polyethylene and polypropylene are homopolymers (a combination of the same monomers), a growing proportion is copolymers, (polymers that are produced from a combination of two or more monomers).

Polyolefins are produced using a number of different technologies that are widely available, including one high-pressure process and three low-pressure processes (Solution, Slurry and Gas Phase). All of the technologies are constantly being adapted to improve product qualities and reduce production costs. For commodity products, produced on modern scale technology, the cost structure of these technologies is similar. Increased cost structures for producing specialty products are typically justified by premium margins.

The following is a summary of the four processes:

High-Pressure Process.

This was the original process used to produce polyethylene and is still in use today. This process is a free radical polymerization that does not require the use of a catalyst, operating at pressures above 1,000 and up to 3,500 bar and temperatures from 150° to 340°C. Originally conducted in a high-pressure autoclave, current processes more commonly use a tubular reactor. This process is used to produce low-density polyethylene, characterized by long-chain branching, considerable flexibility and clarity. Because of the high-pressures involved, this process involves higher risk than low-pressure processes and requires expensive and specialized equipment; consequently, fewer high-pressure processes have been constructed in recent years.

Low-Pressure Processes.

These processes typically operate below 200 bar and have lower capital intensity but require the aid of a catalyst. In addition, it is common to add a comonomer (butene or hexene in the case of polyethylene, and ethylene in the case of polypropylene) to tailor the resultant polymer properties.

- ***Solution Process.*** This process operates at temperatures above the melting point of the polyolefin (above 130°C for polyethylene and above 140°C for polypropylene) and employs metallocene or Ziegler-Natta catalysts and a solvent to dissolve the growing polymer chains. This process is best suited to make high-density polyethylene (having very few chain branches, and those branches that do exist are short—only a few carbon atoms in length) and linear low-density polyethylene (having many short-chain branches, which may be contrasted to low-density polyethylene with many long-chain branches). Solution processes have the ability to produce narrow molecular weight distribution polyolefins.
- ***Slurry (or Suspension) Process.*** This process is a continuous low temperature (60°-105°C, 20-35 bar for polyethylene or 60°-85°C, 35-50 bar for polypropylene) process in which polymer forms as a solid particle in the presence of a catalyst while suspended in a liquid slurry. In the case of polyethylene, the polymerization takes place in an inert liquid carrier such as isobutane. In the case of polypropylene, the polymerization takes place in liquid hexane, heptane, or even liquid propylene monomer. When propylene is utilized as the carrier liquid, the process is often referred to as “bulk slurry.” The carrier liquid serves to aid in the removal of heat as it carries the growing polymer particles through the reaction process. The catalyst may be chromium on silica (polyethylene only), Ziegler- Natta, or metallocene. The reactor may be a stirred tank or a pipe-loop reactor, in either case jacketed to aid in removal of the heat of reaction. One or more reactors may be placed in series to broaden the molecular weight distribution and produce bimodal

polyolefins. This process is best suited to making high-density polyethylene and homopolymer polypropylene. One advantage of this process over other high-density polyethylene processes is the ability to make rapid grade transitions, which makes it particularly well suited to the manufacture of specialty polyethylene products.

- **Gas Phase.** As the name implies, polymerization occurs with the solid polymer particles produced on a heterogeneous catalyst in the gas phase. Like the slurry process, the catalyst may be chromium on silica (polyethylene only), Ziegler-Natta, or metallocene. In the reactor, the growing polyolefin particles are fluidized and cooled by the gaseous reactants and/or nitrogen, or sub-fluidized and mechanically agitated. Liquid monomer may be added and flashed to aid in the removal of heat. The reaction takes place at low temperature (80°-100°C for polyethylene and about 60°-85°C for polypropylene) and pressure (15-35 bar). A gas phase process has advantages over slurry and solution processes in that the heat of reaction is very effectively removed and operates with lower hydrocarbon inventories. In addition, high-ethylene content copolymers of polypropylene can be produced in this process. This process is best suited to the manufacture of linear low-density polyethylene, high-density polyethylene and all types of polypropylene, including homopolymer, random copolymer, impact copolymer and soft thermoplastic polyolefin.

Post polymerization, any catalyst is deactivated, the polyolefin is freed of any solvent, unreacted monomer or liquid diluent, and the resulting polyolefin flake or crumb is combined with additives and extruded into pellets prior to sale to downstream fabricators.

Several of these technologies have recently been adapted to run multiple reactions in series, yielding a product with a wider bi-modal molecular weight distribution that provides superior strength or unique characteristics such as high-impact resistance.

Research and Intellectual Property

Our olefins and polymers businesses are supported by technology centers in Houston (United States), Brussels (Belgium), Rosignano (Italy) and Lavéra (France), which in turn support the following highly proprietary process technologies that we believe together form one of the most competitive technology platforms available in the olefins and polymers industry.

- **Gas phase polypropylene technology.** Our gas phase polypropylene technology enables the cost-effective production of high-performance polypropylene plastics.
- **High-density polyethylene technology.** We own specialized technology for the manufacture of high-density polyethylene that is characterized by low capital investments and low operating costs and is particularly well-adapted to the manufacture of high-performance materials such as high-pressure pipe, one of the fastest growing segments of the high-density polyethylene market.
- **Gas phase polyethylene technology.** This technology is designed to serve the linear low-density polyethylene and high-density polyethylene markets, which are the fastest growing segments of the commodity polyethylene markets. The technology is characterized by low capital investment, low operating cost, low emissions and waste, and no requirement for the use of additional solvents.

Historically the Group has sold over 75 licenses to third parties across the three technologies. However, the Group no longer licenses, and instead focuses on development of advantaged products for the Group's different polymers businesses.

We continue to manufacture and sell polyolefin catalysts to third parties. Management believes that the polyolefin catalyst business is complementary to the polyolefins business, and does not adversely affect INEOS's competitive position in its polyolefin markets. The catalyst business is managed within the Olefins and Polymers business in Europe and has grown significantly over the last four years.

Transportation

We have access to a comprehensive transportation network and associated logistics infrastructure through a combination of ownership and long-term contracts. We believe that this network enables us to move feedstocks and products at competitive rates and provides us with access to the merchant market, enabling us to manage demand and supply imbalances across the petrochemical value chain in response to market conditions.

Because pipelines are the most efficient and least expensive mode of transportation, we consider them to be of strategic importance. We own some of the pipelines we use, while others are consortium-owned pipelines in which we hold a stake or are provided to us by dedicated operators under long-term contracts. Other pipelines in Europe may be accessed without a contract as long as the appropriate tariff is paid.

Where we are reliant on access to shipping channels, we either own or hold stakes in the relevant terminals and storage facilities or have secured access to them through long-term contracts. We own several dedicated barges and also utilise an extensive network of third-party shipping companies which make capacity available to us on a spot or term contract basis that is managed by our own in-house Marine Assurance Service.

Competition

We face intense competition in the olefins and polymers markets in which we compete. Given that most of the products are commodities, the main competitive criterion is price. In certain segments of the polyethylene and polypropylene markets, where products must satisfy specified technical performance criteria, competition is also based on performance, quality and customer service. A key competitive factor is the ability to manage costs successfully, which requires management focus on reducing unit costs and improving efficiency. The main drivers in this respect include technology, scale, feedstock access, asset utilization, logistics and the ability to execute capital projects efficiently.

Because polymers are easily transported in bulk shipping containers or rail cars, there is significant trade between regions. Globally we compete against a large number of polymer companies, many of which have capacity in multiple regions and who market their products in Europe, Asia and North America. Our competitors include Lyondell-Basell, Sabic, Dow and ExxonMobil.

Olefins & Polymers Europe

Set forth below is a discussion of the products, manufacturing, raw materials and energy, transportation and customers and contracts, for our Olefins & Polymers Europe business.

Overview

The following table provides a breakdown of the revenues and EBITDA before exceptionals for the Olefins & Polymers Europe business for the dates indicated:

	For the year ended December 31,		
	2021	2020	2019
	(€ in millions)		
Revenue ⁽¹⁾	7,526.0	4,658.3	5,861.9
EBITDA before exceptionals ⁽²⁾	948.2	395.3	591.4

(1) Revenue excludes revenue from discontinued operations. Excludes inter-segmental eliminations.

(2) For more information on how we calculate EBITDA before exceptionals, see “Presentation of Financial and Non-GAAP Information—Use of Non-GAAP Financial Measures.”

Products

In our olefins business, we manufacture ethylene, propylene, butadiene, raffinate 1, benzene, toluene and gasoline blending components. The majority of our ethylene and propylene is either used for polyolefins production or sold to other INEOS businesses as feedstock. Our butadiene, raffinate 1, benzene, toluene and gasoline blending components are sold to other INEOS businesses as well as other producers of synthetic rubber, ABS plastics, oligomers, cumene, styrene and polyurethanes and are traded on the open markets. Olefins & Polymers Europe is one of the largest olefin and polyolefin producers in Europe.

In our polymers business we manufacture High Density Polyethylene (HDPE), Low-Density Polyethylene (LDPE), Linear Low-Density Polyethylene (LLDPE) and Polypropylene (PP).

In HDPE we are active in car fuel tank, milk bottle, high performance pipe and blow moulding applications, most of which require lengthy customer approval processes. Sales from our HDPE asset have grown significantly since 2013.

Our low-density polyethylene products are particularly well-suited to specialty applications in the wire and cable, medical and coatings sectors which also require lengthy customer approval processes. Our coating customers form the backbone of our LDPE business and we also have a significant volume of medical product sales and other specialty grades which generate high margins.

Our linear low-density polyethylene production is primarily sold to customers in the film sector, and, thanks to the use of our proprietary metallocene technology, we have sales of both commodity and specialty grades into film applications like super-tough and sealable films.

In polypropylene our focus has been in high modulus pipe and related applications, highly reinforced impact copolymers for injection moulding, medical and heat sealable BOPP films, where we have a strong global position in sealant material.

Manufacturing

Olefins & Polymers Europe operates large integrated olefins cracker and polymer sites with a total capacity of 5,050 kilotonnes per annum for the production of ethylene, propylene, butadiene, benzene, polyethylene and polypropylene. We own and operate a large naphtha cracker complex in Köln, Germany, and a large gas cracker in Rafnes, Norway. Until the end of 2015, the gas cracker at Rafnes, received all of its feedstock from gas sources in the North Sea but from 2016 the majority of Rafnes feedstock is ethane sourced from U.S. shale gas fields. The naphtha cracker complex at Köln includes two naphtha crackers and a small integrated ethane cracker which consumes ethane produced by the naphtha crackers. The naphtha crackers are also able to consume butane as part of their feed-slate and this flexibility enables the management of feedstock mix in response to changes in economic and market conditions, resulting in the maximization of margins. Both of these cracker sites are either co-located with, or connected by pipeline to, polyolefin plants and to other olefin-derivative units, with market leading economies of scale and operational optionality that permits us to maximise our margins across a broad portfolio of olefin-derivatives.

The cracker complex in Köln, Germany, benefits from being located in the centre of one of the key industrial clusters of Germany, whilst also being able to access feedstocks by pipeline and barge from the Antwerp and Rotterdam area in the Netherlands; one of the world's most competitive naphtha supply regions. It is the third largest cracker complex in Europe, and largest in Germany. With a proven track record of operational excellence, this very reliable asset benefits from considerable downstream integration with a wide portfolio of olefin derivatives on- and off-site, including polyethylene, ethylene oxide, nitriles, oligomers, ABS engineering plastic and synthetic rubber. It can also sell its excess ethylene and propylene to the merchant market via pipelines and the site can also sell propylene by barge using its own jetties on the river Rhine and by rail. In particular, the Köln site is connected to Europe's largest ethylene pipeline network owned by ARG, a company jointly owned by INEOS and four other European petrochemical companies.

The Noretyl gas cracker in Rafnes has been modernized and recently expanded to its present annual capacity of 645,000 tonnes of ethylene. It is also co-located with on-site derivatives assets, namely O&P Europe's LDPE plant and EDC/VCM plants owned by INOVYN, a related company. In addition, the cracker is connected to dedicated, wholly owned ethylene liquefaction and export terminals from which it exports products to INEOS derivatives and the merchant market in North West Europe.

While our two standalone polyethylene and polypropylene sites in Lillo and Geel in Belgium are not co-located on cracker sites, they are connected to major olefin pipelines. Our Lillo site also benefits from connection to INEOS' ethylene terminal, which is Europe's largest, at the INEOS Oxide site in Zwijndrecht, Antwerp and indirectly with the greater ARG pipeline. In both cases, this infrastructure provides these facilities with flexibility in sourcing feedstock. Both of these sites benefit from easy access to large polyolefin markets.

Since acquiring Olefins & Polymers Europe, we have undertaken a significant improvement and restructuring program across our assets to enhance their long-term cost-competitiveness. In general, cost efficiencies have been substantially improved across all aspects of the business. The asset base has also been added to via the acquisition in 2007 of a 50% share in the Noretyl gas cracker at Rafnes and full ownership of the associated polyolefins at Bamble in Norway. On July 1, 2015, we acquired the other 50% share in the Noretyl gas cracker from INOVYN, a related party.

Significant investments have been made to enhance our assets' capabilities, including the building of a swing furnace on the Köln cracker and the conversion of its linear low density polyethylene unit to highly differentiated metallocene production (a proprietary catalyst technology that permits the production of

super-tough film grades). A key improvement theme of our polyolefins business has been to creep capacities and reduce plant costs. We aim to run our downstream assets as close to their maximum capacity as is operationally prudent while seeking to constantly improve the sales portfolio by focusing on products that can command sustainably higher margins in bottom of cycle conditions over commodity grades, which we refer to as “differentiated” products. We take advantage of our proprietary process technologies, such as at Lillo (Innovene S), at Geel (Innovene P) and at Köln (Innovene G). These state of the art advanced technologies allow us to manufacture distinctive resins.

The most substantial recent investment that was made in our assets was in 2015 at Rafnes, with the completion of a new ethane import tank and new ethane furnace. These investments were timed to coincide with the commission of NGL/LPG export facilities in the U.S. through which we have secured long-term, advantaged U.S. gas feedstock, associated with the shale oil and gas developments in that country. This new source of ethane complements our existing local sources of feedstocks. In 2020, the butane tank in Antwerp was completed which, along with dedicated barges, allows the Koln cracker to increase the proportion of butane used in its feedstock thereby increasing the feedstock flexibility.

Our manufacturing facilities are periodically shut down for scheduled turnarounds, to carry out necessary inspections, testing to comply with industry regulations and any maintenance activities that may be necessary. Olefins crackers typically undergo major turnarounds every five to six years, with each turnaround lasting four to six weeks. Our Rafnes gas cracker is on a seven to nine year turnaround cycle. Polymers units are subject to more frequent maintenance shutdowns, typically one turnaround every one or two years, but in this case each turnaround lasts only seven to 10 days. A significant focus in prior years was placed on enhancing process safety and further improving reliability by initiating a series of process safety audits and reliability reviews to give assurance about the adequacy of our critical safety management systems and that the necessary plans are in place to drive very high levels of reliability.

Raw Materials and Energy

The primary feedstocks for our olefin crackers are naphtha and natural gas liquids, namely ethane, propane and butane. The use of naphtha results in the production of a significant amount of co-products such as propylene, butadiene and benzene, as well as Raffinate 1 and gasoline blending components. The use of natural gas liquids results in the production of a smaller amount of these co-products. From 2016, our Köln naphtha requirements have been sourced from several external suppliers under contract, with the balance being purchased in the open market.

We continue to look for sources of attractive feedstock and in 2012 we announced the completion of supply and infrastructure agreements that secured a significant volume of ethane feedstock from the U.S. for use in our Norwegian cracker. Since then, further ethane and LPG supply agreements have been secured from these advantaged US shale gas sources to complement our existing local sources. In addition, a new infrastructure contract was signed in 2015 which allowed us to export feedstocks from the new Enterprise facility at Morgan’s Point on the Texas coast. Contracts for eight “Dragon” vessels to transport these feedstocks to Europe were signed in 2013, with all ships having now been delivered and fully operational.

The first shipment of ethane from the Marcus Hook Facility in Pennsylvania was exported from the U.S. in March 2016 on the JS INEOS Intrepid, and the first ethane cargo from Morgan’s Point was exported in September 2016 on the JS INEOS Insight.

Although energy is generated at several of our sites, including as part of petrochemical manufacturing processes, we are a significant net purchaser of both electricity and gas. In the past we have typically procured our requirements from local producers or utilities at local market prices, however, we are increasingly moving to a more integrated process to take more advantage of our scale and changing energy markets across the wider INEOS Group, including our ultimate parent company and its other subsidiaries.

Customers and Contracts

In total, we had approximately 1,029 customers worldwide, during the twelve-month period ended December 31, 2021, who are serviced by an in-house team of business, sales and technical service personnel. Customers of our olefins business tend to be major European petrochemical companies, who use our products to make a wide range of polymers, synthetic rubber, intermediates and specialty chemicals. In our downstream business we sell to a large number of companies in a variety of plastic conversion industries involving rigid and flexible packaging, pipe, car fuel systems, rotomoulding, wire and cable, medical and other industrial and

consumer products. In Olefins & Polymers Europe as a whole, in the twelve-month period ended December 31, 2021, no single customer accounted for more than 10% of our annual revenues and our top 10 customers accounted for less than 33% of our annual revenues.

In our olefins business the majority of our ethylene, propylene, raffinate 1 and benzene production is sold to other INEOS olefin-derivative businesses at market-related transfer prices. For the twelve-month period ended December 31, 2021, approximately 71% of the olefin requirements of our downstream polyolefin business was satisfied by internal supply from our own crackers, while the rest was sourced from the open market. Our remaining production of ethylene, propylene, butadiene, raffinate 1, benzene, toluene and gasoline blends are sold directly to customers predominately via contracts of one to three years duration, with pricing either freely negotiated, cost-plus or market-referenced such as ICIS or Platts. Product pricing can therefore change daily or monthly.

In our polymers business sales are mainly conducted under contract. The majority of these contracts are annual with longer durations by exception. Pricing in these contracts is cost plus or based on market references, such as ICIS or Platts, or negotiated on a monthly basis.

In April 2020, our polymer business announced a collaboration with Plastic Energy on the construction of a new plant to convert waste plastic into the raw material to make new plastic. Advanced recycling technology converts waste plastic back to its basic molecules. The resulting material is then used in INEOS crackers to replace traditional raw materials derived from oil.

Olefins & Polymers North America

Set forth below is a discussion of the products, manufacturing, new materials and energy and customers and contracts, for our Olefins & Polymers North America business.

Overview

The following table provides a breakdown of the revenues and EBITDA before exceptionals for the Olefins & Polymers North America business for the dates indicated:

	For the year ended December 31,		
	2021	2020	2019
	(€ in millions)		
Revenue ⁽¹⁾	5,527.3	2,785.0	3,200.8
EBITDA before exceptionals ⁽²⁾	1,577.2	554.2	726.8

(1) Revenue excludes revenue from discontinued operations. Excludes inter-segmental eliminations.

(2) For more information on how we calculate EBITDA before exceptionals, see “Presentation of Financial and Non-GAAP Information.”

Products

Our olefin products—ethylene, propylene, butadiene, mixed butenes, and crude benzene—are the basic building blocks for a vast family of petrochemicals produced by our chemical manufacturing customers. A significant portion of our olefin output serves as feedstock for our polymers production, while the remaining output is sold to affiliates and third parties.

The type of polyethylene we currently manufacture in Olefins & Polymers North America is slurry loop high-density polyethylene. Our high-density polyethylene products are sold to customers for use in manufacturing food packaging, household chemical containers, pipe, injection-molded products such as caps and closures, and crates and pails. Our polypropylene is transformed into crates and trays, roofing membranes, food packaging, carpets, automotive products, , rope and toys. During the twelve-month period ended December 31, 2021, consumables such as caps, closures, film and packaging represented a majority of our polymer sales volume.

Along with olefins and polyethylene, polypropylene is a major product, with manufacturing lines at Chocolate Bayou, Battleground and the Carson manufacturing facilities. Polypropylene is produced with a

combination of produced raw materials (propylene from the olefins crackers) as well as third party purchased propylene. Polypropylene is then shipped by rail and truck to various end-users in North America and abroad.

O&P North America also manufactures polyethylene pipe through our subsidiary, WL Plastics. WL Plastics is solidly positioned as a leader in the North American plastic pipe industry. WL Plastics is a leading manufacturer and distributor of HDPE tubular products for fluid and material transfer applications primarily for energy and industrial infrastructure applications with a deep product mix of pipe diameters of 1/2 inch to 54 inches. In December of 2021, WL Plastics acquired the polyethylene assets of Charter Plastics in Titusville, Pennsylvania. The Titusville site and associated assets have the capability of producing a broad range of polyethylene pipe for numerous end-uses including potable water, reclaimed water, sewer, geothermal, gas, irrigation, and industrial applications.

INEOS USA Oil & Gas, a subsidiary of O&P North America is an operator of onshore U.S. oil & gas wells in the Austin Chalk formation in Texas. The Giddings Field assets produce crude, wet, and dry gas which is sold to third parties.

O&P North America is a fully integrated business from the production of hydrocarbons through to fabrication of polyethylene pipes.

Manufacturing

The key assets of Olefins & Polymers North America include the following:

- the Chocolate Bayou, Texas, facility, one of the largest cracker installations in North America as well as two on-site polypropylene units (PP3 & PP4).
- the Battleground, Texas, facility, one of the largest North American high-density polyethylene facilities, inclusive of the Gemini and heritage Polyethylene assets, integrated with the Chocolate Bayou site through a company-owned pipeline system as well as the BMC Line 3 polypropylene unit;
- a 50% ownership interest in the Horizon high-density polyethylene plant located at Chevron Phillips' Cedar Bayou, Texas, site;
- the Carson polypropylene plant—integrated with the Marathon refinery at Carson, California;
- the Hobbs fractionation unit, which can process 1,455 kta of natural gas liquids feedstock for our Chocolate Bayou cracker;
- the WL Plastics fabrication and distribution locations include Mills, Wyoming; Rapid City, South Dakota; Cedar City, Utah; Elizabethtown, Kentucky; Statesboro, Georgia; Snyder, Bowie and Lubbock, Texas; Titusville, Pennsylvania.
- the Giddings Field Oil & Gas assets have 108 operated wells spread across 44,701 net mineral acres in Austin, Brazos, Burleson, Fayette, and Washington counties in Texas.

All of the olefins crackers are either co-located with, or connected by pipeline to, polymers units, enabling them to realize economies of scale, improve their facilities' energy management and minimize logistics costs.

In North America, our olefins and polymers business comprises five sites including major facilities in Chocolate Bayou, Texas, and Battleground, Texas. As of December 31, 2021, the Chocolate Bayou and Battleground facilities had total production capacity of approximately 4,517 kilotons inclusive of olefins, polyethylene and polypropylene finished goods.

Chocolate Bayou is one of the largest cracker installations in the Gulf Coast region and, according to NexantECA, is the seventh largest site by ethylene capacity in the United States. The site has access to cavern storage, rail service, and approximately 500 miles of pipeline, either owned or leased by us. This allows integration to our polymer assets and our Hobbs fractionation unit, and permits the site to place its surplus ethylene and other products either directly in the local merchant market or in storage to bridge time lags between production and consumption. The scale of the Chocolate Bayou crackers should also enable the

leveraging of the facility's infrastructure and workforce. Another key strength of the facility is the crackers' flexible design. While their main feedstock is natural gas liquid gas-based feedstock, which is obtained from various sources, including a significant amount from our natural gas liquid fractionator near Hobbs, New Mexico, the commodity markets and Marathon's refinery in Texas City, Texas, the facility also has the ability to process naphtha. This flexibility enables management of feedstock mix in response to changes in economic and market conditions. All of our polymers facilities in North America are either connected with the Chocolate Bayou crackers or are adjacent to facilities operated by third parties with whom we have feedstock arrangements.

For our North American polymers business, our key facility is the site at Battleground, Texas, which hosts both polypropylene and high-density polyethylene production. As of December 31, 2020, the previous 50/50 Gemini HDPE joint venture between the Group and Sasol Limited, was purchased and it became 100% owned by Group. Our high-density polyethylene site is one of the largest high-density polyethylene complexes in North America. Battleground is integrated with Chocolate Bayou by way of a pipeline system owned by INEOS. Complementing our Battleground polymers production is our Carson polypropylene unit and our 50% ownership interest in the Cedar Bayou Horizon high-density polyethylene line. The Horizon line, which is operated by Chevron Phillips, is one of the largest single slurry loop high density polyethylene lines in North America.

Raw Materials and Energy

Our procurement efforts remain focused on expanding access to low cost materials, services and equipment and creating independence from sole or limited sources of supply. We are connected via pipeline to multiple hydrocarbon suppliers at Chocolate Bayou Works and Battleground Manufacturing Complex to ensure a secure supply at reasonable costs.

We, together with our North American affiliates, have centralized the purchasing of energy, natural gas, rail routes, ethylene, and propylene (including refinery-, chemical- and polymer-grades), providing scale, common voice in the market and, in the cases of ethylene and propylene, flexibility to manage our supply and demand. Our olefins and polymers business primarily uses naphtha and NGLs as the basic feedstocks for our olefins crackers.

Although most external feedstock supplies of the business are available from a variety of third parties, our Carson polypropylene plant depends on raw materials from the Marathon refinery located on the same site. Most of the petrochemical feedstocks purchased from Marathon are part of a long-term contractual agreement. In addition, a substantial proportion of our feedstock requirements is also obtained on the commodity markets. We manage the procurement and trading of our feedstocks internally.

Although energy is generated at several of our sites, including as part of petrochemical manufacturing processes, we are a significant net purchaser of gas. Typically, we procure our requirements from local producers or utilities at local market prices.

Customers and Contracts

We work with customers to meet evolving market requirements. We market our products both directly—business to business—and through authorized distributors. We have a small base of olefins customers and approximately 350 polymer customers worldwide. Our industrial customers include a large number of companies in a variety of downstream industries involving rigid packaging, fibers and flexible packaging.

Most of our olefins sales are by multi-year contracts, with prices subject to monthly industry pricing. Our polymer sales are to customers in the merchant market and are made either on contract or spot terms. Some contracts are based on negotiated prices, while others are based on pricing formulas or refer to spot market rates.

WL Plastics has a premium value proposition to their approximately 125 domestic customers with industry leading response times, scalable low-cost manufacturing with longer run times and a reputation for reliability.

Chemical Intermediates

Overview

Set forth below is a discussion of the products, manufacturing, raw materials and energy, customers and contracts, research and intellectual property and competition for our Chemical Intermediates activities. This includes the following key businesses: INEOS Nitriles, INEOS Oligomers, INEOS Oxide and INEOS Phenol.

The following table provides a breakdown of the revenue and EBITDA before exceptionals of the Chemical Intermediates business for the periods and as of the dates indicated:

	<u>For the year ended December 31,</u>		
	<u>2021</u>	<u>2020</u>	<u>2019</u>
	(€ in millions)		
Revenue ⁽¹⁾	8,496.2	5,352.9	6,486.8
EBITDA before exceptionals ⁽²⁾	1,090.8	585.5	626.9

(1) Excludes inter-segmental eliminations.

(2) For more information on how we calculate EBITDA before exceptionals, see "Presentation of Financial and Non-GAAP Information."

Products

The following table provides an overview of our key chemical intermediate products and their principal applications:

<u>Business</u>	<u>Key Products</u>	<u>Principal Applications</u>
INEOS Nitriles	Acrylonitrile	Acrylic fibers, acrylamide and acrylonitrile butadiene styrene and styrene acrylonitrile polymers
	Acetonitrile	Performance solvent for pharmaceuticals industry
	Hydrogen Cyanide	Gold extraction, perspex manufacture and animal feeds
	Acetone Cyanohydrin	Chemical intermediates and perspex manufacture
	Ammonium Sulphate	Fertilizers
	Acrylonitrile catalysts Ammonia	Used in the manufacture of acrylonitrile Intermediate used to produce a range of products, including nitric acid, polymer resins and textiles
	Nitric Acid	Polyurethanes
INEOS Oligomers	Linear alpha olefins	Co monomers for high performance polyethylene, plastomers and elastomers, feedstock for synthetic lubricants, surfactants, detergents, lubricant additives, paper sizing chemicals and various other specialty chemicals, base stock for drilling fluids
	Polyalpha olefins	Base stock and blending component for the production of high performance synthetic lubricants, gear oils and greases.

Business	Key Products	Principal Applications
	Isoolefins, Isoparaffins and Specialties	Base stock and intermediates for the manufacture of tires, compressor oils, agrochemicals, fragrances, cosmetics, high purity solvents, specialty chemicals, and blowing agents
	GAS/SPEC specialty amine solvents & additives	Customizable solvents for natural gas processing, various refining applications, tail gas treating, LNG, hydrogen and ammonia production, ethane cracker feed treatment, and coal degasification.
	GAS/SPEC process technology packages	Process technology packages for design of new specialty amine treatment systems and revamp/optimization of existing systems
INEOS Oxide	Ethylene oxide and derivatives, including ethylene glycol, ethanolamines, alkoxyates, glycol ethers	Polyester resins, fibers, film, antifreeze/coolants, industrial detergents, agrochemicals, surfactants, cosmetics, construction chemicals, glyphosates, pharmaceuticals, synthetic lubricants
	Propylene oxide and derivatives, including propylene glycols	Polyurethane foam, polyester resins and de-icing
	Ethylidene norbornene monomer	Ethylene propylene diene monomer rubber
	Ethyl, propyl and butyl acetates	Surface coating, inks, paints, process solvents
INEOS Phenol	Phenol	Bisphenol A for the production of polycarbonates and epoxy resins, phenolic resins, pharmaceuticals and nylon intermediates
	Acetone	Methylmethacrylate, polymethylmethacrylate, bisphenol A, pharmaceuticals, solvents, coatings, personal care products and agrochemicals
	Cumene	Primary raw material for the production of phenol and acetone
	Alphamethylstyrene	Heat resistant thermoplastics, tackifiers, coatings and antioxidants
Other businesses	Catalyst and Additives	Polymers and vinyls

INEOS Nitriles. Our main product in the nitriles sector is acrylonitrile. According to Nexant, measured by average annual capacity for 2021, we are the largest manufacturer of acrylonitrile in the world. The primary applications for acrylonitrile are acrylic fiber and acrylonitrile butadiene styrene plastics. We employ safeguards to ensure the safe handling of Nitriles' products including the use of specially designed railcars and pipelines for transportation to nearby customers. We believe that our competitive position in the worldwide acrylonitrile market is strengthened by our proprietary fluid bed acrylonitrile process and related catalysts.

In addition, the Nitriles business produces acetonitrile, hydrogen cyanide, acetone cyanohydrin and ammonium sulphate, and produces catalysts for use in the acrylonitrile manufacturing process.

In 2019 the ammonia and nitric acid business was transferred to INEOS Nitriles from INEOS Enterprises. Ammonia production finds major application in the fertilizer industry, but in the case of INEOS Nitriles is used in the production of acrylonitrile, nylon and other non-fertilizer applications. Nitric acid is similarly used in the fertilizer industry but for INEOS Nitriles is primarily used in the manufacture of polyurethanes. In this highly competitive market, we benefit from an advantaged location within our Köln integrated petrochemical site and supplying 80% of our customer volume directly by pipeline.

INEOS Oligomers. According to NexantECA, we are the largest linear alpha olefins producer measured by average annual capacity for 2021. NexantECA also believes we are one of the largest producers of poly alpha olefins worldwide. As a “full range” linear alpha olefins producer, we manufacture a broad range of co-produced linear alpha olefins and manage production levels consistent with our ability to utilize or sell the entire product slate. As different segments of the linear alpha olefins market tend to grow at different rates, the business has developed a variety of internal and external outlets for the key products, which allow the plants to operate with minimal constraints. Our unique technology does allow some flexibility to adjust our product slate, to emphasize certain linear alpha olefins products and deemphasize others as demand fluctuates. Linear alpha olefins are used primarily as comonomers in the production of polyethylene, as feedstock in the production of poly alpha olefins, detergents, paper sizing chemicals and lubricant additives and as drilling fluids. Poly alpha olefins are primarily used in synthetic motor oils, transmission fluids and other demanding lubricant applications such as wind turbines.

Specialty Oligomers products are manufactured from crude C4 and C5 olefinic streams and are used as base stock or intermediates in a variety of high margin applications such as the manufacture of tires, compressor oils, agricultural chemicals, plastic additives, specialty chemicals, fragrances, and cosmetics.

Our GasSpec™ specialty amines, which are high performance specialty chemical formulations, often patent protected, are used to remove hydrogen sulphide and carbon dioxide from natural gas, various refinery streams, hydrogen & ammonia production streams, ethane cracker feed gas, and coal degasification product gas. GasSpec™ operates a fully equipped laboratory in Freeport, Texas, that provides comprehensive analytical support to our customers.

INEOS Oxide. We manufacture ethylene and propylene oxide, from which we produce a range of derivatives including ethylene glycol, propylene glycol, EO and PO alkoxyates, ethanolamines and glycol ethers. According to NexantECA we are the largest producer of ethylene oxide and ethylene glycol in Western Europe as measured by aggregate annual capacity for 2021 and we believe we are one of only three commercially viable producers of ethylidene norbornene monomer in the world.

Ethylene oxide is a highly reactive, flammable and toxic molecule. As a consequence, ethylene oxide producers typically use a significant proportion of their ethylene oxide for captive production or sell it to third parties located reasonably close to, or on, their ethylene oxide production sites. The majority of ethylene oxide produced in Western Europe is used for captive production and there are minimal ethylene oxide imports into, or exports from, Western Europe. INEOS Oxide uses its ethylene oxide production for the captive production of ethylene glycol, ethylene oxide derivatives and sales to third parties on its sites in Antwerp and Koln.

Our ethylene oxide derivatives include ethanolamine, a broad range of alkoxyates, and glycol ethers. We own and operate one of the world’s largest ethanolamine units and produce a family of molecules that are used in applications such as agrochemicals, surfactants (used in personal care products and detergent formulations), cement additives, textile chemicals, metal working fluids, electronics and pigments. We have six alkoxyate reactors in Antwerp, which we use to make a broad range of alkoxyates used in construction, household detergents, industrial cleaners, cosmetics, pharmaceuticals, textiles, synthetic lubricants and paint & coatings. We also operate a glycol ether asset in Antwerp producing a range of methyl and ethyl glycol ethers used as solvents in surface coatings and inks, and as jet fuel de-icers.

We are one of only three commercially viable suppliers of ethylidene norbornene (ENB) monomer globally and the only producer in Europe. Ethylidene norbornene monomer is used in the production of ethylene propylene diene monomer (EPDM) rubber, a high-performance rubber that is both wear and weather resistant and is increasingly used in place of conventional rubbers in automobiles, roofing materials and household appliances.

Ethylene glycol is used primarily as a feedstock to produce polyethylene terephthalate for film, fiber and resin and in a variety of other industrial applications including antifreeze/coolants for automotive vehicles.

According to NexantECA we have the largest ethyl acetate plant in Europe with the product being primarily used as an active solvent in formulations for protective coatings (lacquers and enamels), inks, and adhesives. It is also used as a process solvent in pharmaceuticals and organic chemical synthesis. Because it is a naturally occurring compound in many fruits, ethyl acetate has found applications in the food industry as a flavouring component and process extractant for applications such as decaffeination of tea and coffee.

INEOS Phenol. According to NexantECA, measured by average annual capacity in 2021, we are the largest producer of phenol in the world. Our global manufacturing capacity is two times that of our closest competitor. Phenol is a primary material for a large number of chemical products. In recent years, the use of phenol for the production of bisphenol A, an intermediate product used to produce polycarbonate and epoxy resins, has increased substantially and is now the largest phenol application. Polycarbonate is an engineering thermoplastic material which, due to its superior optical qualities, structural strength and weight, has a wide range of uses including; CDs and DVDs, optic-fibers, optical lenses, bulletproof glass and other ballistic resistant materials, structural parts in cars and trucks and housings for electrical household appliances and office equipment. Epoxy resins are used in a wide variety of applications including coatings, adhesives and composite materials, such as carbon fiber.

Phenol is also combined with formaldehyde to produce phenolic resins, which represent the second largest commercial use of phenol. Phenolic resins are used in a wide range of applications, including plywood and oriented strand board, furniture, insulation materials, laminates, foundry molds and adhesives.

The next largest application for phenol is as the raw material for caprolactam and adipic acid for the production of nylon intermediates. Major uses include engineering thermoplastics and synthetic fibers for clothing and carpeting.

Since phenol and acetone are produced together in a fixed ratio, we are also the largest producer of acetone in the world with more than twice as much capacity as the next largest competitor. The largest commercial use of acetone is for solvents, either through the use of acetone itself as a solvent or through the acetone-based production of solvents. The second largest commercial use of acetone is the manufacture of methylmethacrylate. Methylmethacrylate is used to manufacture polymethylmethacrylate resins, including acrylic sheets and compounds for molding and extrusion. Acrylic sheets and compounds are used in a wide range of architectural and industrial applications, ranging from point of sale retail displays to glazing and decorative light panels. The third major use of acetone is in the production of bisphenol A.

Alphamethylstyrene is formed as an intermediate product during the phenol and acetone production process. It is used in heat resistant thermoplastics, tackifiers, coatings and antioxidants.

Manufacturing

INEOS Nitriles operates from three sites, two in the United States and one in Europe. Our Green Lake, Texas, facility is one of the largest facilities for acrylonitrile and related products in the world. The second U.S. site is in Lima, Ohio, and is an integrated nitriles complex, producing acrylonitrile and related products, with access to feedstock from an adjacent refinery. Lima also manufactures acrylonitrile catalysts for other facilities on a global basis. In Europe, we manufacture acrylonitrile, ammonia and nitric acid in Köln, Germany.

INEOS Oligomers operates from five sites split across North America and Europe. Joffre, in Alberta, Canada produces linear alpha olefins from low-cost ethylene derived from Canadian gas. The other North American assets are located in Texas, USA. The LaPorte site manufactures poly alpha olefins starting from certain cuts of linear alpha olefin, and the Chocolate-Bayou site produces linear alpha olefins, primarily using ethylene supplied from the adjacent O&P Chocolate-Bayou crackers. In addition, construction is underway for a new 120,000 tonnes poly alpha olefins plant at Chocolate Bayou, Texas, which we estimate will be operational in the second half of 2022. In Europe, production of linear alpha olefins and poly alpha olefins occurs in Feluy, Belgium, and specialty oligomers are manufactured in Köln, Germany.

INEOS Oxide operates from four main sites, in Antwerp, Belgium, Plaquemine, Louisiana, United States, Köln, Germany and Hull, United Kingdom. Our largest production facility is at the Antwerp complex in the second largest European harbor - and second largest chemical region in the world. This site has direct or indirect connections to three major ethylene pipelines linking it to most ethylene crackers in Northwest Europe as well as the only deep-sea terminal for Ethylene not integrated in a cracker complex. It also has pipeline connections to pipelines for nitrogen, oxygen, natural gas and ship/rail logistic capabilities for sourcing bulk feedstock of propylene oxide, butadiene, acetic acid and alcohols. In addition, the site has its own jetty facility on the Schelde River which links it to the port of Antwerp and the Amsterdam Rotterdam Antwerp ("ARA") pipeline and with rail and road tanker loading facilities. We produce ethanolamine at our Plaquemine plant located on the Mississippi/Gulf Coast of the United States. This is a prime location for chemicals production due to advantaged access to feedstock and direct access to sea jetties and close proximity to our customer base.

INEOS Phenol operates phenol and acetone plants at sites in Gladbeck, Germany; Antwerp, Belgium; and Mobile, Alabama in the United States. All three sites use our own proprietary technology, which has significant advantages in energy consumption and other factors over competing technologies. Our Gladbeck plant is located in the industrial heartland of Germany known as the *Ruhrgebiet*. It receives its raw materials by pipeline from an INEOS owned cumene plant (Marl), as well as other suppliers, and the finished products go out by rail and truck with most customers situated within a 100 kilometer radius. It is the largest single train unit in the world. According to NexantECA our Antwerp site is the largest capacity phenol site in the world. The site is located in the Antwerp industrial area with direct deepwater access. All of the cumene reaches the site via ship. The majority of the site's end-products are transported to customers by ship, with the balance being transported by road and rail. Our Mobile, Alabama, United States, plant is located on Mobile Bay on the Gulf of Mexico, close to several major consumers. All cumene is supplied via ship mainly from an INEOS owned cumene plant (Pasadena, Texas) or producers on the Gulf Coast or Asia. About half of the phenol and acetone produced is transported via ship and barge while the balance goes out by rail and road. INEOS Phenol operate two cumene plants at sites in Marl, Germany and Pasadena, Texas.

We manufacture catalysts for polyethylene, polypropylene and acrylonitrile, and have established toll-manufacturing arrangements for polypropylene catalysts and some polyethylene catalysts. Manufacturing facilities exist in Lima, Ohio, United States (acrylonitrile catalysts), Sarralbe, France (polyethylene catalysts) and Dahej, India (polyolefin catalysts).

Raw Materials and Energy

Acrylonitrile is manufactured from propylene, ammonia and air with the use of a special catalyst. Acrylonitrile is toxic and flammable and, unless chemical stabilizers are added for storage and shipment, can undergo an explosive chemical reaction. We employ safeguards to ensure the safe handling of nitriles, including the use of specially designed railcars and pipelines for transportation to nearby customers. The key raw material for ammonia production is natural gas. Natural gas is supplied from utility companies via pipeline from the German natural gas grid to the Köln plant to manufacture ammonia.

Ethylene is the feedstock for the production of INEOS Oligomers' range of linear alpha olefins (Hexene-1 to C20+). At our Joffre plant in Alberta, Canada, ethylene is supplied from the neighboring, globally cost advantaged ethane Nova cracker complex facility. Ethylene is secured through a long-term supply agreement. In Europe, the Feluy alpha olefin plant is supplied in ethylene from Antwerp by pipeline connected to the ARG and via the INEOS deep sea Antwerp terminal. Ethylene supply is secured through INEOS O&P toll agreements and spot purchases. The new Chocolate Bayou Alpha olefins plant is supplied in ethylene mainly from the adjacent INEOS O&P Chocolate Bayou ethane crackers. INEOS Oligomers produces Poly alpha Olefins at the Laporte, TX and Feluy plants using selective INEOS Oligomers supplied Alpha Olefins cuts. The INEOS Cracker complex in Cologne supplies Raffinate 1 and Crude C5 which is respectively the feedstock for the C4 Iso-olefins/ Iso-paraffins unit and the Iso-amylene and Cyclopentane units.

INEOS Oxide's principal raw material is ethylene. Our supply flexibility is bolstered by access to or ownership of major ethylene deep sea terminals connected to the ARA pipeline network. We have short and medium-term contracts of one to five years that generally specify minimum and maximum volumes with several different suppliers. The cost of our key feedstock ethylene supply is based on a discount to the current Northwestern European contract price.

Cumene, which is made from the combination of benzene and propylene, is INEOS Phenol's main raw material. INEOS owns cumene plants located in Marl, Germany, which is pipeline connected to the Gladbeck site and in Pasadena, Texas in the United States. We acquire the remaining cumene from our suppliers pursuant to four different types of contractual arrangements. Under a toll contract, we supply the benzene and propylene required for the production of cumene to our suppliers, who then convert these inputs into cumene. For this service, we are charged a conversion and capacity reservation fee reflecting the supplier's costs and a margin. Under the second type of contractual arrangement, the suppliers charge us for cumene according to contractually agreed formulas based on benzene and propylene market prices and agreed yield factors. A conversion fee is added to the charge. The third type of arrangement is the toll contract, discussed above, pursuant to which customers pay for or provide raw materials to us and receive, in exchange for a toll fee, corresponding phenol and acetone outputs in fixed proportions. Finally, we also make some incidental purchases of cumene in the open market. As a result of these arrangements, we are exposed to changes in the market contract and spot rates for benzene and propylene. We believe that our use of toll contracts with customers and formula-based contracts can reduce our exposure to raw material price fluctuations.

Customers and Contracts

INEOS Nitriles has approximately 80 acrylonitrile customers in more than 180 locations worldwide, with the top 10 customers accounting for approximately 73% of revenue. Major acrylonitrile customers include Chi Mei, LG, Lotte and Synthomer in Asia, SNF in the US and INEOS Styrolution, Aksa and SNF in Europe. We are the only acrylonitrile supplier to provide customers with the security of supply from capacity in the United States and in Europe and we service all key regions of the world: United States, Europe and Asia (including the Indian subcontinent). Ammonia products are predominantly sold to on-site internal customers for the production of acrylonitrile (INEOS Nitriles) and nitric acid (Covestro), but also supplies to external customers for a wide range of applications. Our Catalyst products are used internally in our Acrylonitrile plants as well as sold to a select number of customers around the globe.

INEOS Oligomers has approximately 300 worldwide customers with its top 10 customers accounting for approximately 45% of revenue. Major customers typically include large polyethylene and elastomer manufacturers, such as Dow, Nova, SK, and LG; and leading lubricant, detergents, and drilling fluid companies.

INEOS Oxide sells most of its products to leading chemical manufacturers, including Arkema, Arlanxeo, BASF, Bayer, Covestro, Proctor & Gamble and Wilmar. The majority of our sales are made pursuant to short- and medium-term market contracts of one to five years in duration. Under a long-term swap agreement entered into with Dow Chemical as part of the ethanolamine and GasSpec™ gas treating amines acquisition in February 2001, we swap a significant proportion of our ethylene glycol production from our Antwerp facilities for an equivalent volume of ethylene oxide production from Dow Chemical's ethylene oxide plant in Plaquemine. We generally determine the prices for our chemicals on a monthly basis based on current market conditions, including raw material costs. Other than ethylene oxide prices, which are based on the European market price, our prices are generally based on the international market price.

INEOS Phenol sells to most of the major phenol and acetone consumers globally, including Olin, Covestro, Sabic, Fibrant, Hexion, Evonik, Roehm, Georgia Pacific, Radici, Arclin and Ascend. We generate approximately 65% of our total sales from our 10 largest customers with whom we have developed strong relationships over more than 50 years of doing business. Many of our sales contracts include provisions whereby raw material price changes are passed through automatically insulating our margins from volatile changes in raw material markets.

Research and Intellectual Property

Our Chemical Intermediates businesses are also supported by a range of technologies, and each business carries out research to improve the different technology platforms to enhance environmental performance, and, where appropriate, to develop novel products, applications, catalysts and additives.

A key technology platform is the proprietary fluid bed acrylonitrile process and related catalysts. We believe that this technology is the leading nitriles manufacturing technology from a cost and operational performance perspective and that it is used in a significant majority of the world acrylonitrile production. In order to sustain the competitiveness of the technology, we invest in the development and manufacture of improved catalysts. These are critical for achieving high product yields with high reliability whilst minimizing emissions and environmental footprint.

Intellectual Property

Active management of our intellectual property rights allows us to preserve the advantages of the products we sell and the technologies we use, and helps us to maximize the return on our investment in research and development. We police our proprietary rights and enforce them against third party infringements or misappropriations. We own over 2,000 patents or patent applications, in the United States, Europe, China and various other commercially relevant regions. In addition, we own a number of registered trademarks. Strict control of our proprietary confidential technical information provides valuable complementary protection to our other intellectual property rights. In addition to our own intellectual property, we are party to licensing and other agreements authorizing us to use and sub-license patents, trade secrets, confidential technical information and related technology owned by third parties.

While we believe that our portfolio of intellectual property rights provides significant competitive advantages, we do not regard our business as being materially dependent on any single patent, trademark, trade secret or agreement.

Competition

Although INEOS Nitriles competes with numerous manufacturers of acrylonitrile, we are the largest producer in the world. In addition, we believe that a significant majority of the world's acrylonitrile capacity is based on our process technology. Our most significant competitor is Asahi Kasei Corporation, closely followed by Sinopec. Other competitors include Ascend and Cornerstone in North America and AnQore in Europe. In the global market for ammonia, we face over 150 competitive production units located in 50 countries. Thirty of these units are within Western Europe.

The main competitors for INEOS Oligomers in linear alpha olefins are Royal Dutch Shell, Chevron Phillips and Sasol Limited. For poly alpha olefins, major competitors include Chevron Phillips and Exxon Mobil.

The main competitors of INEOS Oxide in the ethylene glycol, antifreeze, ethylene oxide and ethylene oxide derivatives markets are BASF, Shell and Dow Chemical, while those in acetate esters include Celanese, BASF and OQ. Our main competitor in the ethylidene norbornene monomer merchant market is ENEOS (previously known as JX Nippon Oil & Energy).

In Europe, the major competitors for INEOS Phenol are Cepsa, Novapex, Borealis and Versalis. In North America, our major competitors are AdvanSix, Shell and Sabic.

Refining Divestiture, Grangemouth Divestiture and Lavéra Divestiture

The Refining Divestiture

On July 1, 2011, subsidiaries of Lux I disposed of (i) the Refining Business and the Entrepreneurial (Refining) Business to joint ventures formed between PetroChina and INEOS Investments and (ii) the Infrastructure Entity to a joint venture owned by INEOS Investments (50.0%) and the Refining Business JV (50.0%), herein referred to as the "Refining Divestiture." The disposal of the Refining Business, the Entrepreneurial (Refining) Business and the Infrastructure Entity was principally a disposal of the Refining segment of the INEOS Group as reported on the financial statements of IGH.

The Refining Business and the Entrepreneurial (Refining) Business disposed of in connection with the Refining Divestiture consist principally of the crude oil refining operations carried out at the refineries located at Grangemouth, Scotland, and Lavéra, France, and related entrepreneurial activities. The Refining Divestiture also involved the transfer to the Infrastructure Entity of certain related infrastructure assets (principally a power station in Grangemouth, Scotland, and a terminal and other facilities). Following the Refining Divestiture, the INEOS Group and the Refining Business share certain assets and will continue to rely on each other for certain goods and services, which include the purchase of feedstock by the INEOS Group from the Refining Business JV, the sale by the INEOS Group of certain hydrocarbons to the Refining Business JV and the provision of certain administrative services to each other (such as security, emergency response, accounting, employee relations, procurement and site management). The Infrastructure Entity acquired the related infrastructure assets and provides certain infrastructure goods and services (such as power and access to terminals) to the INEOS Group and the Refining Business JV. The Infrastructure Entity was transferred by the INEOS Group as part of the Refining Divestiture and is jointly owned by INEOS Investments and the Refining Business JV. Upon the consummation of the Refining Divestiture, service and asset-sharing arrangements were executed to govern the ongoing use of the shared infrastructure and services. The indemnification provisions include the INEOS Group giving an uncapped non-time limited indemnity to the joint venture in respect of environmental liabilities not related to the Refining Business.

As a result of the Refining Divestiture and related transactions, on July 1, 2011, we received net cash proceeds (after expenses and agreed completion adjustments) equal to €658.0 million and 400 Ordinary Shares in INEOS Investments, subscribed for at an aggregate subscription price of \$1.015 billion. The ordinary shares have the right to receive an amount equal to all amounts received by INEOS Investments (net of a good faith estimate of its audit, company secretarial and other administrative expenses, as determined by the directors of INEOS Investments) in respect of its investments, including its equity interest in the Refining and Entrepreneurial JVs and the Infrastructure Entity, and INEOS Investments shall be obliged to distribute to the INEOS Group, subject to applicable legal requirements, in the form of dividends or as a return of capital, all amounts received by it in respect of such investments, less such audit, company secretarial and other administrative expenses. The holders of the ordinary shares are entitled to, in priority to any payment to holders of any other class of shares, \$1.015 billion of the total capital returned to the voting shareholders. While we do

not have voting control of INEOS Investments, the INEOS Group does retain the majority of the current economic benefits of the entity as we are entitled to receive the foregoing amounts through the ordinary shares we hold. By virtue of the Group's retained economic interest in INEOS Investments, the INEOS Group consolidates INEOS Investments as a subsidiary in its consolidated financial statements. The investments in the Refining Business held by INEOS Investments are therefore accounted for as investments in joint ventures in the consolidated financial statements of the INEOS Group. The ordinary shares are unsecured equity interests. Subject to applicable law, the ordinary shares do not carry voting rights other than class voting rights in relation to changes in the Articles of Association of INEOS Investments that would affect the rights of the ordinary shares, including the issuance of shares ranking *pari passu* or prior to the ordinary shares, or in relation to any proposal to wind-up INEOS Investments. Except with respect to the limited class voting rights of the ordinary shares, the voting shares of the principal shareholders of IGH have 100% of the voting rights of INEOS Investments.

The Grangemouth Divestiture

On October 1, 2013, the Group completed the Grangemouth Divestiture which comprised the disposal of its Grangemouth petrochemicals operations, including the assets and pension and other liabilities, to a newly created subsidiary of INEOS Holdings AG, our indirect parent company. The Grangemouth Divestiture was implemented pursuant to a restructuring designed to address concerns that the operations carried out by INEOS Commercial Services UK Limited and INEOS Chemicals Grangemouth Limited at the Grangemouth site had been loss-making for the previous four years, primarily due to a high fixed-costs base at the Grangemouth site and a decline in suitable feedstock supplies. Accordingly, a survival plan was implemented to improve its cost base and to enable it to invest in new infrastructure to import U.S. ethane to the Grangemouth site which will provide a low cost sustainable raw material supply for the business.

The plan formulated for the survival of the Grangemouth operations required a significant investment. This investment included investment in infrastructure necessary to allow the site to import ethane gas from the U.S., including the construction of an import facility and ethane tank. These facilities were completed during 2016 and the first shipment of ethane gas arrived from the U.S. into Grangemouth in September 2016. The investment was funded from the proceeds of the issue by INEOS Grangemouth plc in August 2014 of €285 million 0.75% Guaranteed Notes due 2019, which were guaranteed by the U.K. government's Infrastructure Guarantee Scheme. In July 2019, the €285 million of Guaranteed Notes were redeemed at maturity and replaced with a new €350 million bank facility for the Grangemouth divested business. The new facility has a three year term and comprises a €200 million term loan with a €150 million revolving credit facility. The €200 million affiliate loan between IHL and INEOS Grangemouth plc was cancelled at the time of executing the new refinancing. INEOS Grangemouth Plc has re-registered as INEOS Grangemouth Limited following the redemption of the Guaranteed Notes. In July 2020, the term of the €350 million Grangemouth bank facility was extended for a further three years and matures in 2025.

The Grangemouth Chemicals business has delivered stronger financial performance from 2014 to 2020 than was envisaged in the original business case for the survival plan. Acceleration of the site transformation plan, strong chemicals markets and improvements in the operations of the site have all contributed to higher cash generation and an improvement in the net debt position of the divested business compared to the original business case.

The Lavéra Divestiture

On July 1, 2014, our subsidiaries INEOS Group AG and INEOS Europe AG disposed of certain petrochemical assets and business in France and Italy to a subsidiary of INEOS AG, a company wholly owned by our ultimate parent INEOS Limited. The disposed businesses comprise a petrochemical business at the Lavéra site in France as well as certain other business and assets in France and Italy that were formerly part of our European Olefins & Polymers business unit (the disposed assets and business are together referred to as the "Lavéra businesses"). The total consideration for the sale of the Lavéra businesses amounted to €200 million and was initially provided in the form of vendor loans. As of December 31, 2015, all of the consideration was received by us in cash.

The disposal was part of a restructuring plan for the Lavéra businesses with the objective of improving the reliability and cost base of the Lavéra site.

The acquiror of the Lavéra businesses is not part of the "Restricted Group" under our Senior Secured Term Loans Agreement and the Existing Indentures and as a result the Lavéra businesses are no longer subject

to the covenants and other obligations under our Senior Secured Term Loans Agreement and the Existing Indentures. Further, the Lavéra businesses will not be part of the “Restricted Group” under the Indenture governing the Notes and will consequently not be subject to the covenants and the obligations contained therein.

We continue to provide certain supporting services such as supply chain management, accounting or logistical services to the Lavéra businesses following their disposal. Further, our subsidiary INEOS Europe AG entered into an offtake agreement for ethylene oxide with an entity that is part of the Lavéra business. These services and agreements with the Lavéra businesses are engaged in on an arm’s-length basis.

Contractual Arrangements with the Refining and Entrepreneurial JVs

To ensure that the companies in the INEOS Group retain access to the feedstocks provided by the Refining and Entrepreneurial JVs, we have entered into several contractual arrangements with the Refining Business JV and the Infrastructure Entity. Pursuant to these arrangements, the INEOS Group will retain access to the feedstocks that are essential to the retained business segments, thereby contributing to the long-term viability, security and profitability of our businesses.

Our Köln site within our Olefins & Polymers Europe business has entered into standard supply contracts buying naphtha with the Refining and Entrepreneurial JVs on an arm’s-length basis.

Contracts have been put in place to ensure that the companies in the INEOS Group retain access to the naphtha feedstock produced by the Refining Business JV at Grangemouth, following the separation of the Grangemouth petrochemicals business from the INEOS Group in the Grangemouth Divestiture.

Contractual Arrangements with the Grangemouth petrochemicals business

To retain flexibility on polymer sales, and thus optimisation of value for the INEOS Group businesses, the polymer production at Grangemouth is sold to market through the INEOS Group Limited Risk Distributor companies (“LRDs”). The proceeds (less an agreed sales margin) of the sale of polymer production at Grangemouth through the LRD network are transferred back to INEOS Commercial Services UK Limited, one of the entities divested in the Grangemouth Divestiture.

Contractual Arrangements with the Lavéra, Sarralbe & Rosignano petrochemicals business

Historically, the majority of naphtha feedstock produced by the Lavéra refinery has been consumed by the petrochemicals business at Lavéra. Pursuant to the Lavéra Divestiture, contracts were executed in order to continue this arrangement.

To retain flexibility on polymer sales, and thus optimisation of value for the INEOS Group businesses, the polymer production at Lavéra, Sarralbe and Rosignano is sold to market through the INEOS Group LRDs. The proceeds of the sales through the LRD network sales are transferred back to INEOS Derivatives France Limited (“IDFL”) less an agreed sales margin.

Prior to the divestiture, all contracts for the purchase of ethylene and propylene for IDFL’s polymer plants in Sarralbe, Lavéra & Rosignano were with counterparties external to the INEOS Group and these supply arrangements remain in place following divestiture. From January 1, 2022 the contractual agreements of IDFL was transferred to INEOS Olefins S.A., a related party entity, under the same terms and conditions.

Research and Technology (“R&T”)

Overview

We consider R&T to be a key contributor to both the short-term performance and the long-term growth of our business.

Our R&T work has four principal objectives:

- improve the environmental footprint of our products and processes, for example, by reducing greenhouse gas (“GHG”) emissions, and enhanced recyclability;

- minimize production costs with a view to increasing the margins that can be achieved in the manufacture and sale of our products;
- make better products in order to sustain or capture more margin or market share; and at the same time
- reduce capital costs to minimize the investments necessary to meet demand.

A substantial portion of our R&T expenditure is dedicated to the continuous improvement of our processes and products to reduce GHG emissions associated with our operations and increase the recyclability and recycled content of our products. This R&T work is carried out by a combination of site based teams and centrally located specialists and research teams in one of our R&T centers. R&T projects typically yield returns within one to five years. We protect our process technologies and products by seeking patents or retaining them as trade secrets.

We believe that the quality of our scientific staff is important to our success. Our R&T teams have comprehensive expertise in a variety of areas, including catalysis, process development, product and material science, modeling and project management. The project teams also possess the necessary commercial expertise to enable timely implementation of innovations. We consistently aim to improve the effectiveness of our R&T efforts by targeting our projects at the most valuable applications and using project management tools to monitor progress. To attract and retain the best-qualified scientists, and develop a high level of capability and competence in the key areas of processes, products and operations, we offer our employees challenging development opportunities and a competitive compensation package that is aligned with performance of the relevant business in both the short and long term.

We also draw on external resources to enhance the scope, depth and effectiveness of our internal R&T efforts. We proactively seek mutually beneficial partnerships with third parties, including other petrochemical companies, new technology companies, key customers, and leading universities.

Facilities

We currently lease the office space for our principal executive offices, which are located in Rolle, Switzerland. We also lease administrative, technical and sales office space in various locations in the countries in which we operate.

Our production network comprises 33 manufacturing facilities in six countries throughout the world. The following table provides information regarding these facilities:

Country	Location ⁽¹⁾	Business	Principal products manufactured	Capacity ⁽²⁾
Belgium	Doel ⁽³⁾	Phenol	Phenol, acetone	1,105 kta
	Feluy	Oligomers	Linear alpha olefins, poly alpha olefins	445 kta
	Geel	O&P Europe	Polypropylene	339 kta
	Lillo	O&P Europe	Polypropylene, high-density polyethylene	723 kta
	Zwijndrecht	Oxide	Ethylene oxide, ethylene glycol, ethylene oxide derivatives, ethylidene norbornene monomer, buthyl acetate, alkoxyates	1,524 kta
Canada	Joffre	Oligomers	Linear alpha olefins	295 kta
Germany	Gladbeck	Phenol	Phenol, acetone, alpha methyl styrene	1,105 kta

Country	Location ⁽¹⁾	Business	Principal products manufactured	Capacity ⁽²⁾
	Köln	Nitriles	Ammonia, nitric acid ⁽⁴⁾ , acrylonitrile and related products	1,729 kta
		O&P Europe	Ethylene, propylene, butadiene, benzene, low-density polyethylene, linear low-density polyethylene	3,131 kta
		Oligomers	Isoolefins, isoparaffins, specialties	170 kta
		Oxide	Ethylene oxide and derivatives, ethylene glycol, propylene oxide, propylene glycol	906 kta
	Marl ⁽⁵⁾	Phenol	Cumene	260kta
Norway	Bamble	O&P Europe	Low-density polyethylene	158 kta
United Kingdom	Rafnes Hull	O&P Europe Oxide	Ethylene, propylene Ethyl acetate	699 kta 330 kta
United States	Battleground	O&P North America	High density polyethylene, polypropylene	1,433 kta
	Carson	O&P North America	Polypropylene	218 kta
	Cedar Bayou ⁽⁶⁾	O&P North America	High density polyethylene	210 kta
	Chocolate Bayou	O&P North America	Ethylene, propylene, butadiene, polypropylene	3,084 kta
		Oligomers	Linear alphaolefins	420kta
	Freeport ⁽⁷⁾	Oligomers	Gas treating amines	12 kta
	Green Lake	Nitriles	Acrylonitrile and related products	711 kta
	Hobbs	O&P North America	Ethane/propane mix, propane	1,455 kta
	La Porte	Oligomers	Poly alpha olefins (low and high viscosity)	105 kta
	Lima	Nitriles	Acrylonitrile and related products, acrylonitrile catalyst	230 kta
	Mobile	Phenol	Phenol, acetone	875 kta
	Pasadena	Phenol	Cumene	900 kta
	Plaquemine	Oxide	Ethanolamines	186 kta
	Mills	O&P North America	Polyethylene pipe	41 kta

Country	Location ⁽¹⁾	Business	Principal products manufactured	Capacity ⁽²⁾
	Bowie	O&P North America	Polyethylene pipe	58 kta
	Cedar City	O&P North America	Polyethylene pipe	44 kta
	Elizabethtown	O&P North America	Polyethylene pipe	47 kta
	Snyder	O&P North America	Polyethylene pipe	46 kta
	Rapid City	O&P North America	Polyethylene pipe	39 kta
	Statesbro	O&P North America	Polyethylene pipe	41kta
	Lubbock	O&P North America	Polyethylene pipe	44 kta
	Titusville	O&P North America	Polyethylene pipe	23 kta

- (1) We own all of the production facilities except where otherwise indicated.
- (2) The unit kta is kilo-tonnes per annum.
- (3) We own the production assets but lease the land under a long- term lease that expires in 2040.
- (4) Nitric acid plant owned by third party, operated by INEOS.
- (5) Plant owned by INEOS Styrenics Gmbh, a related party.
- (6) A 50/50 joint venture with Chevron Phillips, operated by Chevron Phillips. The capacities shown are the INEOS share of the activities.
- (7) We have 100% rights until 2036.

Project ONE

In addition to our existing facilities, we are currently developing a new large plant in Antwerp, Belgium, known as Project ONE. Project ONE initially consisted of a new Ethane Steam Cracker and a Propane Dehydrogenation Unit (PDH), for the production of ethylene and propylene, respectively along with associated utilities, tankage and infrastructure. Following a strategic review in 2020, INEOS has determined that the demand for propylene in the quantities previously envisaged was less urgent. As a result, Project ONE was rescoped to only consist of an ethane steam cracker with a nameplate capacity of approximately 1,450 kta and associated utilities, tankage and infrastructure. Any additional European propylene capacity will be considered separately in the future.

INEOS has selected Technip to provide the operating technology for the new ethane cracker. Project One remains the largest and most sustainable investment in the European chemicals industry for the past 20 years and we expect it to be the most environmentally-friendly of its kind. It is planned to be equipped with the best available technologies with very high efficiency in use of raw materials and energy and CO₂ emissions that are expected to be less than half of the best performing similar units in Europe. The project also has a clear pathway to zero carbon (Scopes 1 and 2) emissions within 10 years after startup most likely by increasing the combustion of hydrogen as a heat source. Realizing this ambition is dependant largely on the future availability of environmentally friendly hydrogen in the area which is outside of our control.

Latest estimates suggest that the project will represent a capital investment of approximately €3 to 4 billion largely funded by debt secured on the Project ONE assets. The plant is anticipated to be completed by the end of 2026. The start of construction of the project is currently awaiting the result of an appeals process against our permit, which was awarded by the Flanders authorities in December 2021. A final investment decision is expected in the first quarter of 2022 and we expect to start construction in the summer of 2022.

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. Our aggregate HSSE capital expenditures in 2021 totaled approximately €300 million. Annual HSSE capital expenditures for 2022-2023 are expected to be similar to or less than prior years.

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 are also in the process of investigating and remediating contamination at certain sites where our facilities disposed 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.

Major Regulatory Matters and Developments

Air and Climate Change Regulations and Initiatives

EU Emissions Trading System

Our operations in Europe are covered by the European Union Emissions Trading System (“EU ETS”), a EU-wide trading system for industrial GHG emissions. Industrial sites receive or purchase allowances to emit GHGs and must surrender 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 EU ETS. The number of allowances to emit GHGs that are received by industrial facilities free of charge has been, and we expect will continue to be, reduced over time. Accordingly, in the future, we may be required to purchase more of the allowances we use, or to make emissions reductions at our facilities, which could cause us to incur additional compliance and/or capital costs and/or adversely impact our production and our results of operations. In 2021, our costs to purchase emissions allowances under the EU

ETS totaled approximately €30 million and annual costs are expected to be similar for 2022, although this is subject to the cost of the allowances which may fluctuate.

EU Industrial Emissions Directive (IED)

Our operations are also required to comply with the EU Industrial Emissions Directive (“IED”), which remains applicable during the Transition Period. The European Commission regularly publish new decisions aiming at reducing emissions to air and water from all chemical sites. We actively participate in the process to discuss those regulations to defend our interests and better anticipate the need for capital expenditures which could be required in order to comply with these new rules.

U.S. Clean Air Act and Climate Change Regulations

In the United States, the federal Clean Air Act (“CAA”) regulates air emissions from various sources and requires, among other things, monitoring of specified pollutants, including hazardous air pollutants, stringent air emission limits and technological controls to reduce emissions to air. Strict federal and state controls on ozone, carbon monoxide, benzene, sulphur dioxide, nitrogen oxide and other emitted substances impact our activities and increase our operational costs in the United States.

Growing concern about the sources and impacts of global climate change has led to a number of legislative and administrative measures, both proposed and enacted, to monitor, regulate and limit carbon dioxide and other GHG emissions. For example, we are required to monitor and report to EPA annual GHG emissions from certain of our U.S. facilities. In addition, EPA has taken steps to regulate GHG emissions under the CAA and other existing legislation as comprehensive climate change legislation has not yet been enacted by the U.S. Congress. Under the Trump administration, uncertainty exists as to how GHG regulations will in the future impact large stationary sources, such as our facilities in the United States, and what costs or operational changes these regulations may require. In June 2019, EPA issued the Affordable Clean Energy (“ACE”) rule. The ACE rule has four major components: (i) a definition of the best system to reduce greenhouse gas emissions from coal-fired power plants, (ii) a list of “candidate technologies” states can use to establish standards of performance, (iii) a new preliminary applicability test for determining a “major modification” triggering enhanced review standards, and (iv) new implementing regulations for emissions guidelines under other provisions of the CAA. Plans are required to be submitted by individual states by 2022. Although we believe it is likely that GHG emissions will continue to be regulated in the U.S. and other countries (in addition to the E.U.) in the future, we cannot yet predict the form any such additional regulation will take in the chemical industry itself in various jurisdictions (such as a cap-and-trade program, technology mandate, emissions tax or other regulatory mechanism) or, consequently, to estimate any costs that we may be required to incur, for example, to install emissions control equipment, purchase emission allowances or address other regulatory obligations. We continue to monitor the situation closely.

In addition, EPA has finalized or proposed several rules relating to emissions reporting and emissions reductions. We monitor rules within our industrial sector and rules in other sectors that may set a precedent for ours. Significant capital expenditures could be required for emissions control equipment in order to comply with these new rules.

In the United States, stringent controls on nitrogen oxides (NOx) and hydrocarbon “Volatile Organic Compound” (VOC) emissions, and/or the need to purchase emissions credits for certain facilities, impact our operations and, indirectly, the cost of our products. Credit pricing is subject to general economic conditions. NOx and VOC credits are available and affordable in the markets where we have previously needed such credits, and have not been a deciding factor in growth. EPA has finalized rules that will require states to restrict or prohibit emissions that “significantly contribute” to non-attainment of, or interference with a state’s ability to maintain, the revised ozone standard in other “downwind” states. Both of these developments may require additional NOx and VOC reductions at our facilities over the next decade, and could cause us to incur additional compliance and/or capital costs and/or adversely impact our production and our results of operations.

The Registration, Evaluation, and Authorization of Chemicals (“REACH”) Regulation, the Classification, Labelling and Packaging (“CLP”) Regulation, the Toxic Substances Control Act and the Canadian Environmental Protection Act, 1999 (“CEPA”)

The EU regulates chemical products within the European Union by imposing on all affected industries the responsibility for ensuring and demonstrating the safe manufacture, use and disposal of chemicals. REACH requires the registration of all chemicals manufactured and imported into the European Union (either alone, in

mixtures or in articles) with the European Chemicals Agency (“ECHA”). The regulation requires formal documentation of the relevant data required for hazard assessments for each substance registered as well as development of risk assessments for their registered uses. Most uses of high hazard substances, such as carcinogens, will require authorization by the ECHA. We manufacture, process, or use a number of substances classified as substances of very high concern under REACH. Some of the intermediates and monomers manufactured within some of our businesses are classified as carcinogenic, mutagenic, or reprotoxic. REACH requires extensive toxicological data, documentation and risk assessments for many of our chemical products and raw materials. As a corollary to REACH, the European Union has also adopted the CLP Regulation to harmonize the European Union’s system of classifying, labelling and packaging chemical substances with the United Nation’s Globally Harmonized System. The regulation is expected to standardize communication of hazard information of chemicals and to promote 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.

In the United States and Canada, our products and raw materials are subject to environmental, health and industrial hygiene regulations, including TSCA and CEPA, requiring the registration and safety analysis of the substances contained in them. The U.S. Congress passed the Frank R Lautenberg Chemical Safety for the 21st Century Act in 2016. EPA is currently undergoing adoption of the amended TSCA regulations to comply with the new law’s requirements. The full impact of these amendments to TSCA remains uncertain and it is possible that they could trigger risk evaluations of certain of our products by EPA, which may lead to new or more stringent regulatory obligations and/or restrictions, up to and including prohibitions on manufacture and sale of certain products. On December 19, 2016, EPA published a list of ten chemical substances that are the subject of EPA’s initial chemical risk evaluations, as required by TSCA. This list includes multiple chemicals we manufacture, including carbon tetrachloride and methylene chloride. Work on the risk evaluations has already begun, following the mandatory requirement for EPA to evaluate existing chemicals with clear and enforceable deadlines.

Such regulations could result in a key raw material, chemical, or other substance being classified or reclassified as having a toxicological or health-related impact on the environment, users of our products, or our employees. Such reclassification of one or more of our raw materials or products could affect its availability and marketability, result in a ban on its purchase or sale, or require us to incur increased costs to comply with additional notification, labelling, or handling requirements.

Risk Management—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 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 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 Directive.

In the United States, our manufacturing facilities are subject to 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. 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, 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. ISA 84 is an international standard that addresses the application of safety-instrumented systems for process industries. 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. 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.

Environmental Remediation and Closure Liabilities

Many of our sites have an extended history of industrial chemical processing, storage and related activities, and sites with known or suspected contamination exist. We are currently, and from time to time have been or may be, required to investigate and remediate releases of hazardous materials or contamination at or migrating from certain of these sites, as well as properties we formerly owned, leased or operated. We could also be responsible for investigating and cleaning up contamination at off-site locations where our predecessors or we disposed of or arranged for the disposal or treatment of hazardous wastes. Under some environmental laws, liability can be imposed regardless of whether the owner or operator knew of or caused the contamination and regardless of whether the practices that resulted in the contamination were legal at the time they occurred. 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 damage resulting from hazardous substance contamination or exposure caused by our operations, facilities or products.

Baseline surveys of soil and groundwater conditions were conducted at many of our sites in the European Union in connection with obtaining our Integrated Pollution Prevention and Control ("IPPC") permits, and such data was reported to the relevant authorities. In addition, many of our other sites were the subject of intrusive investigations when they were acquired by us or in connection with historical activities or operational changes over the years. The process of investigation and remediation can be lengthy, varies from site to site and is subject to changing legal requirements and developing technologies. We are not currently aware of any additional sites as to which material claims or clean-up obligations exist. The discovery of previously unknown contamination, however, or the imposition of new obligations to investigate or remediate contamination at our facilities, could result in substantial unanticipated costs. We could be required to establish or substantially increase 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 those costs need to be incurred could be material.

Product Stewardship and Innovation

Many of our products have some hazardous properties, and some of them require specialized handling procedures due to their acute and chronic toxicity. Our polymer products have widespread end uses in a variety of tightly regulated consumer industries, including in food packaging and medical applications. To manage these risks, our product stewardship team works closely with industry associations, government regulators and others to develop regulations, which are based in science and are commensurate with the magnitude of the risk.

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.

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. INEOS’s OSHA rate for the total workforce has decreased in recent years from a high of 0.52 injuries per 200,000 hours in 2013 to only 0.13 in 2021. 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.

Employees

As of December 31, 2021, we had approximately 7,300 employees (measured as full-time equivalents (“FTEs”)) in our operations around the world, excluding employees of our joint ventures. Approximately 63.1% of these employees were located in Europe, approximately 36.6% were located in North America and 0.3% was located in the rest of the world.

Historically, we have enjoyed good labour relations and we are committed to maintaining these relationships. Other than management and professional personnel, the majority of our employees are represented by local trade unions and are covered by collective bargaining agreements, including a European Employee Forum agreement under the European Council 94/45/EC, Article 6, which covers all businesses and employees across Europe within INEOS Group and is designed to provide a formal mechanism for management and employee representatives to communicate on significant or potentially significant issues across the INEOS Group’s European operations.

Insurance

INEOS purchase insurance on an All Risk Basis including business interruption (including consequential loss) and property damage on a replacement cost basis. In addition, we purchase third party liability insurance, directors & officers, marine cargo, protection & indemnity insurance, life insurance for all of our employees. We believe our policies are in accordance with customary industry practices, including deductibles and coverage amounts. Our broker, lead insurers and underwriters perform risk engineering surveys and routinely inspect all assets. We have an ongoing programme to regularly revalue our assets. The insurance replacement value of our assets for business interruption (including consequential loss) and property damage is approximately €30 billion as of December 31, 2021.

Legal proceedings

As is the case with many companies in the chemical industry, we are and may from time to time become a party to claims and lawsuits incidental to the ordinary course of our business. We are not currently involved in any legal or arbitration proceedings that are expected to have a material adverse effect on our financial position and, to our knowledge, no such legal or arbitration proceedings are currently threatened.

Sustainability

Following the Paris Climate Agreement of 2015, many nation states have set the goal to achieve a Net Zero Emission Economy by 2050, and are adopting regulations and legislation to support this.

In response, we have announced a target to be climate neutral by 2050. INEOS's businesses have put in place roadmaps to achieve this while staying ahead of evolving regulations and legislation, and remaining profitable by seizing the new business opportunities arising. We have already undertaken actions and improvements are already in hand. On a like-for-like basis, as compared to 2019, we aim to reduce GHG emissions by 10% by no later than 2025, investing as required to achieve this. By 2030, we aim to meet the EU's target of a 55% reduction in GHG emissions compared to 1990. As part of this effort, we are also investing in new products and technologies to drive the industry to a circular economy in which materials are re-used to the maximum extent, and no products, once used, enter the natural environment.

We believe that the products we make are essential for a myriad of applications on which society relies. That is why Governments worldwide regard the industry as a critical industry, as we have seen during the recent pandemic. The range of applications includes the following:

- health and medical devices;
- clean water;
- food conservation and preservation;
- renewable energy technologies;
- lighter energy saving materials for transport and mobility;
- affordable clothing and apparel;
- construction and transmission of water and gases;
- electrical insulation; and
- household and electrical goods.

Our products are essential for these applications because, based on performance, affordability, and environmental footprint, they are the best available materials for the applications concerned. In some cases, especially in the medical sphere, they are the only available materials. It has been estimated that if polymers and plastics were to be replaced to the maximum extent in applications where they can be substituted, overall life-cycle GHG emissions in Europe would increase by more than 50%.

Product recycling

By 2025, we have committed to achieving the following recycling targets:

- Offer a range of polyolefin products for packaging applications in Europe containing 50% or more recycled content.
- Use, on average, 30% recycled content in products destined for polystyrene packaging in Europe.
- Incorporate at least 325 kta of recycled material into products.
- Ensure 100% of our polymer products can be recycled.

In line with these objectives, and working with our customers, we have designed and launched a new range of Recycl-IN polyolefin products which incorporate over 60% post-consumer recycled polymer in materials that meet the same exacting specifications as virgin material. We are also investing in advanced

recycling technologies that will enable waste polymers to be broken down to their constituent components then reformed back into polymers. In collaboration with Plastic Energy, our polymer business is constructing a new plant to convert waste plastic into the raw material to make new plastic. Production of the new facility is targeted for the end of 2023. This advanced recycling technology will convert waste plastic back to its basic molecules. The resulting material will then be used in our crackers to replace traditional raw materials derived from oil. The use of Plastic Energy's patented technology called Thermal Anaerobic Conversion (TAC), which transforms previously unrecyclable plastic waste into TACOIL, could be used by many INEOS sites to produce virgin plastic for use across medical products, food packaging, lightweight automotive parts and pipes for safe water transportation. This collaboration will enable a much wider range of waste materials to be re-incorporated into polymer manufacturing. This move towards a circular economy will increase resource efficiency, reduce GHG emissions, and provide an improved outlet for waste polymers.

Improving energy efficiency in existing operations

We are working aggressively across all our business and sites to make important reductions in energy use and associated GHG emissions. Our projects vary widely, from finding new ways of improving process efficiency to innovative solutions for heat integration to more selective catalysts for our processes. In addition, each of our sites is measured against previous emission years, other production sites in the business, and its profile in a country. Emissions data for each business are compared against all INEOS businesses. The data also makes it possible to compare sites and units, suggest reduction pathways, prioritize at source or end of pipe solutions, set targets and track roadmap progress. Moreover, site optimisation plans are made and discussed on a regular basis and result in reduction measures.

Investing in new manufacturing assets.

The hallmark of a sustainable business is the ability to invest in new state of the art manufacturing assets to create a step change improvement in efficiency and environmental footprint. For example, we are constructing a new cracker complex in the port of Antwerp, known as Project One, for the production of the olefin intermediates used to manufacture polymers and other high value products which, when commissioned in 2025, is expected to emit less than half of the CO₂ emissions as compared with the next best existing European steam cracker, and is also expected to become the first net zero carbon emission cracker within ten years of start up. This is the first investment at this scale in Europe for over 20 years.

Using renewable bio-sourced feedstocks

We are developing certified bio-attributed olefins and polymers. Each step in the supply chain has been fully certified by the Roundtable on Sustainable Biomaterials (RSB) to track the renewable materials. The final product carries an attribution according to the displacement of fossil fuel-derived raw materials. If successfully developed at scale, these products could provide as much as 100% GHG savings when compared with conventional materials.

Developing alternative low emission energy sources

Most of our sites use clean energy according to the local electricity mix. Some of these clean energy sources include: our own investments in green power, such as wind turbines and solar panels, the use of biomass or landfill gas as fuel for power plants, the purchase of bio-based steam or refueling with H₂ (such as we have at our Köln facility). In addition, sites have invested in electrical site cars to promote low-carbon energy sources. We have also announced agreements to purchase 500 GWh of renewable wind energy for our facilities in Antwerp which is estimated to result in reductions in our carbon footprint in Belgium by about 2 million tonnes over a ten year period.

Capture, utilisation or storage of carbon dioxide

While our goal is to cut emissions at their sources, we recognize that carbon capture and storage will still play an important role in mitigating GHG emissions in the short run, as will utilizing captured carbon in the long run. As such, we have been operating carbon capture at several of our sites. For the last decade, we have been capturing GHG emissions at plants in Antwerp, Belgium and Köln, Germany, removing over one million tonnes of CO₂ – equivalent to the annual emissions from 100,000 cars. We are also working with partners in the port of Antwerp to build a demonstration plant to make clean fuel from captured carbon dioxide and green hydrogen.

We believe that this package of actions will bring substantial benefits to our customers, to the communities in which we operate, and to all our stakeholders, and help ensure that our businesses remain competitive and sustainable in transition to Net Zero Emission Economy by 2050.

Ecovadis Gold Award

Our progress on sustainability has been recognized by the achievement of a gold award for INEOS Europe AG in a recent sustainability assessment by ECOVADIS. This assessment looks in detail at our work on environment, ethics, labor and human rights, and sustainable procurement. The gold rating places INEOS Europe AG in the top 4% of all companies assessed. We were especially recognized for our environmental performance, reflecting our commitment to carbon emission reduction targets and to recycling and the circular economy.

ESG Risk Rating

INEOS Group Holdings S.A. has received an ESG Risk Rating of 20.5 from Sustainalytics, and was assessed to be at medium risk of experiencing material financial impacts from ESG factors. INEOS Group Holdings S.A.'s ESG Risk Rating places it in the third percentile of commodity chemical companies (5th out of 211) and the fifth percentile for chemical companies (17th out of 449). We believe that this Rating is further evidence that we are seen as a leader in implementing sustainable practices in our industry. Our Rating is subject to change and the current rating can be found on the Sustainalytics website.

Governance

Safety, health and environment (“SHE”) is governed at a group level and implemented by each business. Each business determines its own sustainability strategy. Group-wide, this is coordinated through the climate and energy network (“CEN”). The CEN works with all of our businesses on climate and energy matters. CEN ‘issue teams’ work at the policy and advocacy level, sharing best practice, new business opportunities and innovation. The network covers greenhouse gas (GHG) emissions, heat and power, sustainability, innovation, policy, advocacy and more. Updates from the CEN and SHE performance are both shared at the half-yearly meetings bringing together the CEOs of all of our businesses. Every year, the CEO of each of our businesses ensures the compliance of each of their manufacturing sites with our highest operational and financial standards.

In addition, we have developed a science base to calculate carbon footprints and prepare consistent emission reduction roadmaps. Our science base is a robust method for emissions accounting in carbon dioxide equivalent (CO₂-eq) terms aligned with the Greenhouse Gas Protocol. The data collection is managed centrally through the CEN, using a shared online platform. Our reporting is in line with the Global Reporting Initiative (GRI) guidelines, which are set by an international independent standard organization and which aim to enable third parties to assess environmental impact from the activities of the company and its supply chain. Furthermore, we have completed the CDP climate change survey in order to gain external validation for our initiatives.

Our efforts are aligned with 10 of the United Nations Sustainable Development Goals (United Nations SDGs), with particular emphasis on the following areas: good health and well being, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry, innovation and infrastructure, sustainable cities and communities, responsible consumption and production, climate action, life below water and partnerships for the goals. In addition to the United Nations SDGs, we also support the 10 principles of the United Nations Global Compact.

We also engage with key stakeholders to understand sustainability topics relating to the business that are important to them. In 2020, we performed a formal materiality assessment in which 19 topics were assessed across nine stakeholder groups and ranked relative to stakeholder interest. The results of the assessment are reviewed periodically with key stakeholders to maintain relevance and where practical we set quantitative targets for these priorities to help measure and report upon future performance.

In addition, we have also made strides in our approach to product stewardship. We carry out a comprehensive technical and safety audit of each potential customer before deliveries commence. This check ensures that equipment, safety protocols and procedures meet our stringent standards, and we work together to be sure deliveries can be safely received, stored and handled. For example, to ensure safe transport of our products, all Nitriles customers must use approved logistics service providers. We also audit safety standards at

all the major transport hubs that our products pass through, such as ports, terminals and warehouses. INEOS Nitriles also holds product stewardship conferences in the United States and in Europe, bringing customers together to review the latest developments in safety.

We are also a signatory to the International Council of Chemical Associations' (ICCA) Responsible Care Global Charter. By following the guidelines and measures of Responsible Care we commit to safely conducting our business in an ethical and environmentally responsible manner and providing the foundation for development and capital investments. We are committed to fulfilling the REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) obligations which ensures that companies manage the risks associated with their products and provide customers with the information they need to handle them in a safe and sustainable way. We are also a signatory of Operation Clean Sweep, a voluntary stewardship program of the Plastics Industry Association (PLASTICS) and the American Chemistry Council. We apply this commitment to achieve zero pellet, flake and powder loss across our sites and supply chain. We are committed to keeping this material out of the marine environment.

Safe handling and containment of our chemicals and products is of critical importance to us. To monitor our performance, we have developed a measure to give us early warning of any risks and opportunities to improve. Each of the materials we use has a maximum legally permitted level at which its leakage into the environment is tolerated. However, leakage of materials to that level is extremely rare. Our processes, operating procedures and working practices are all designed to secure containment of all products and raw materials. The loss of containment of any materials is extremely rare but each has a level that is legally reportable to the authorities. We closely monitor all systems and we have internal reporting systems that trigger full internal investigation and reporting where there is any loss of containment that is 10% of the reportable level.

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, 2021) and principal position of each of our directors and officers:

<u>Name</u>	<u>Age</u>	<u>Position</u>
James A. Ratcliffe	69	Chairman
Andrew Currie.....	66	Member of the Board
John Reece	64	Member of the Board
Jim Dawson.....	78	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.

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 Fort Anne, Douglas, IM1 5PD, Isle of Man.

Executive Officers and Directors of INEOS Group Holdings S.A.

INEOS Group Holdings S.A. is an indirect wholly owned subsidiary of INEOS AG. The directors of INEOS Group Holdings S.A. are Peter Huyck, Florence Bardot and Natalina Arena. The business address of Mr. Huyck is Nieuwe Weg 1, Haven 1053, 2070 Zwijndrecht, Belgium. The business address for Ms. Bardot is 3, Avenue des Uttins, CH 1180 Rolle, Switzerland. The business address of Ms. Arena is 310, Ransbeekstraat, B 1120 Bruxelles, Belgium. The principal executive offices of INEOS Group Holdings S.A. are located at: at 62 Avenue de la Liberté L-1930, Luxembourg, Grand-Duchy of Luxembourg.

Compensation of Directors and Executive Officers

An aggregate of €1.2 million was paid to our executive officers and directors in their capacity as directors and officers of INEOS Group Holdings S.A. in 2021.

Board Practices

Our board meets on a regular basis to review performance and our business plans. In addition, the board has established policies for the conduct of our business, including delegations of board authority to directors and members of senior management. The board has appointed committees to ensure appropriate

oversight of our companies' operations. None of the members of the board of directors has a service contract that provides for benefits upon his termination as a director.

The audit committee meets at least twice a year. The committee is responsible for appointing auditors and reviewing the suitability and effectiveness of internal control systems and the application of corporate policies.

The remuneration committee meets at least once a year. The primary function of the remuneration committee is to determine remuneration and other terms of employment for the directors and senior employees of the company, having due regard for performance. We anticipate that, in setting the remuneration policy, the committee will consider a number of factors, including the salaries and benefits available to senior management in comparable companies and the need to ensure senior management commitment to the continued success of the business by means of incentive schemes.

PRINCIPAL SHAREHOLDERS

As at December 31, 2021, all of the issued share capital of INEOS Group Holdings S.A. was held directly by INEOS Holdings Luxembourg S.A. The issued voting share capital of INEOS Holdings Luxembourg S.A. is held by INEOS Holdings AG. The remaining non-voting issued share capital is held by Estera Trust (Jersey) Limited, as trustee of the INEOS Group Share Benefit Trust. INEOS Holdings AG exercises a controlling interest over INEOS Holdings Luxembourg S.A. through its majority interest in the voting share capital. 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, 2021, 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

Relationship with INEOS Limited and INEOS AG

INEOS Limited (previously also INEOS AG, a subsidiary of INEOS Limited), provides operational management services to the Group through a management services agreement. During the year ended December 31, 2021 management fees of €91.6 million (2020: €90.5 million, 2019: €88.0 million) were charged to the income statement. As at December 31, 2021 amounts owed to INEOS Limited were €23.3 million (2020: €23.1 million, 2019: nil). As at December 31, 2021 there were no amounts owed to INEOS AG (2020: nil, 2019: €23.1 million). As at December 31, 2021 there were no amounts owed to INEOS Holdings AG, a wholly owned subsidiary of INEOS AG (2020: nil, 2019: €0.9 million). As at December 31, 2021 amounts owed by INEOS Holdings AG were €94.5 million (2020: €28.3 million, 2019: nil). As at December 31, 2021 amounts owed by INEOS Holdings Luxembourg S.A., a wholly owned subsidiary of INEOS Holdings AG were €15.6 million (2020: €0.3 million, 2019: €0.1 million).

In March 2019 the Group received €260.5 million of proceeds in relation to the repayment of the Group's preferential interest in INEOS Investments Partnership following the sale by INEOS Investments Partnership of its assets (shares in PQ Corporation) to INEOS Limited. The Group paid the proceeds received as part of a dividend of €296.3 million to its parent company, INEOS Holdings Luxembourg S.A..

Relationship with other INEOS subsidiaries

INEOS Limited owns and controls a number of operating subsidiaries that are not included in the INEOS Group Holdings S.A. group, including INEOS Industries Limited, INEOS Enterprises Holdings Limited and the Lavéra petrochemical assets and businesses together with other French and Italian assets of INEOS O&P South.

During the year ended December 31, 2021 the Group has made sales to these subsidiaries of €1,727.1 million (2020: €1,044.7 million, 2019: €1,316.1 million), recovered net costs of €180.1 million (2020: €141.4 million, 2019: €77.9 million) and made purchases of €2,100.5 million (2020: €1,031.3 million, 2019: €1,315.2 million). As at December 31, 2021, €690.4 million (2020: €374.2 million, 2019: €471.1 million) was owed by and €288.5 million (2020: €177.4 million, 2019: €154.0 million) was owed to these subsidiaries (excluding the INEOS Upstream Limited loan).

During 2015 the Group provided a loan of \$623.7 million to INEOS Upstream Limited, a related party, in connection with its acquisition of natural gas assets in the North Sea. The loan facility is unsecured and matures in June 2024 and bears interest at 7% per annum. On September 29, 2017, INEOS Upstream Limited, a related party, acquired further natural gas assets in the North Sea through its acquisition of the entire oil and gas business of DONG Energy A/S. In connection with the DONG Acquisition, the Group advanced a loan of \$376.2 million (€315.7 million) to INEOS Upstream Limited, the proceeds of which were on lent to certain of its subsidiaries. The loan is unsecured and matures in June 2024 and bears interest at 7% per annum. There were no loan repayments during 2021 (2020: nil, 2019: nil). As at December 31, 2021 \$617.1 million (€544.6 million) (2020: \$617.1 million (€501.7 million), 2019: \$617.1 million (€550.8 million)) was outstanding under the facility.

Relationship with the Entrepreneurial (Refining) Business JV and the Refining Business JV

The Refining joint ventures are between PetroChina and INEOS Investments (Jersey) Limited, a related party. During the year ended December 31, 2021 the Group made sales to the Refining joint ventures of €2.5 million (2020: €1.4 million, 2019: nil), recovered costs of €35.1 million (2020: €8.4 million, 2019: €8.6 million) and made purchases of €80.1 million (2020: €145.7 million, 2019: €221.4 million). As at December 31, 2021, €1.5 million (2020: €1.2 million, 2019: €0.8 million) was owed by the Refining joint ventures and €1.3 million (2020: €2.0 million, 2019: €25.5 million) was owed to the Refining joint ventures.

Relationship with other joint ventures

INEOS Limited owns interests in a number of joint ventures that are not included in the INEOS Group Holdings S.A. group, including the French joint ventures associated with the Lavera petrochemical assets and businesses which were divested by the Group on July 1, 2014 and the refining joint ventures between PetroChina and INEOS Investments (Jersey) Limited, a related party. Previous to becoming a fully owned subsidiary on December 31, 2020 the Group had a joint venture with Sasol Limited to build and operate a HDPE plant at Battleground site in Texas, USA which became operational at the end of 2017.

During the year ended December 31, 2021 the Group made no sales (2020: €0.1 million, 2019: €0.1 million), recovered net costs of €12.4 million (2020: €0.2 million, 2019: €0.5 million) and made no purchases (2020: €0.2 million, 2019: €0.2 million) from the French joint ventures. As at December 31, 2021 €0.3 million (2020: €0.1 million, 2019: €0.3 million) was owed by the French joint ventures and €0.1 million (2020: nil, 2019: €0.2 million) was owed to the French joint ventures.

Before the HDPE joint venture became a fully owned subsidiary of the Group on December 31, 2020 the Group recovered costs of €60.5 million (2019: €59.1 million) and made purchases of €43.6 million (2019: €47.9 million) from the HDPE joint venture. As at December 31, 2019, €5.6 million was owed by and €5.1 million was owed to the HDPE joint venture.

The Group has entered into a number of derivative contracts with INEOS UK SNS Limited and INEOS Energy Trading Limited, both related parties. The net fair value loss on these derivatives during the year ended December 31, 2021 was €109.5 million (2020: €126.2 million, 2019: €80.3 million). As at December 31, 2021, the mark to market derivative asset was €173.8 million (2020: €17.8 million, 2019: €15.3 million) and the mark to market liability was €193.2 million (2020: €88.0 million, 2019: €54.5 million) in respect of these related party derivative financial instruments.

In general, any trading balances with related parties are priced based on contractual arrangements and are to be settled in cash. The transactions are made on terms equivalent to those that prevail in arm's length transactions.

None (2020: none, 2019: none) of the related party balances are secured and no guarantees have been given or received. There were no provisions for doubtful debt related to any related parties as at December 31, 2021 (2020: nil, 2019: nil).

DESCRIPTION OF CERTAIN INDEBTEDNESS

The following summary of certain 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.

Senior Secured Term Loans

Overview

The Group has outstanding term loans (the “**Senior Secured Term Loans**” or “**Term Loans**”) under a credit agreement dated as of April 27, 2012 (as amended and restated) among INEOS US Finance LLC and INEOS Finance plc as borrowers, each of the guarantors named therein, the lender parties thereto and Barclays Bank PLC as administrative agent and security agent. The credit agreement was last amended and restated as of November 3, 2017. The form of the credit agreement in effect at any time is herein called the “**Senior Secured Term Loans Agreement**.” The Senior Secured Term Loans are denominated in both Euros and U.S. dollars. The Senior Secured Term Loans include euro-denominated Term Loans due 2024 in an aggregate principal amount outstanding of €1,998.2 million (the “**2024 Euro Senior Secured Term Loans**”) and dollar-denominated Term Loans due 2024 in an aggregate principal amount outstanding of €1,309.1 million (equivalent) (the “**2024 Dollar Senior Secured Term Loans**” and, together with the 2024 Euro Senior Secured Term Loans, the “**2024 Senior Secured Term Loans**”). On October 29, 2020, we borrowed €375.0 million aggregate principal amount of new euro-denominated senior secured term loans maturing on October 29, 2027 (the “**2027 Senior Secured Term Loans**”) under the Senior Secured Term Loans Agreement, and on November 8, 2021, we borrowed euro-denominated Term Loans due 2028 in an aggregate principal amount outstanding of €350.0 million (the “**2028 Euro Senior Secured Term Loans**”) and dollar-denominated Term Loans due 2028 in an aggregate principal amount outstanding of \$845.0 million (the “**2028 Dollar Senior Secured Term Loans**” and, together with the 2028 Euro Senior Secured Term Loans, the “**2028 Senior Secured Term Loans**”). What follows below is a summary of the provisions of our Senior Secured Term Loans Agreement.

The aggregate principal amount of Senior Secured Term Loans outstanding at December 31, 2021 before issue costs was €4,851.1 million (December 31, 2020: €3,682.3 million) of which €44.7 million (December 31, 2020: €37.8 million) is due within one year. The total amounts outstanding under the 2024 Euro Senior Secured Term Loans were €1,977.6 million (December 31, 2020: €1,998.2 million), the 2024 Dollar Senior Secured Term Loans were €1,406.5 million (equivalent) (December 31, 2020: €1,309.1 million (equivalent)), the 2027 Senior Secured Term Loans were €371.3 million (December 31, 2020: €375.0 million), the 2028 Euro Senior Secured Term Loans were €350.0 million and the 2028 Dollar Senior Secured Term Loans were €745.7 million (equivalent).

For additional information about the Senior Secured Term Loans, please see note 19 “Interest Bearing Loans and Borrowings” to the financial statements of the Group as of and for the year ended December 31, 2021 included elsewhere in this annual report.

Interest and Fees

As of December 31, 2021, the 2024 Dollar Senior Secured Term Loans bore interest at a rate determined by reference to LIBOR divided by a percentage equal to 100% minus the LIBOR Reserve Percentage (as defined in the Senior Secured Term Loans Agreement) (subject to a floor of 0.00% per annum) plus the Applicable Margin specified below for such loans or the Alternate Base Rate plus the Applicable Margin specified below for such loans. As of December 31, 2021, the 2024 Euro Senior Secured Term Loans bore interest at a rate determined by reference to LIBOR (subject to a floor of 0.50% per annum) plus the Applicable Margin specified below for such loans. As of December 31, 2021, the 2027 Senior Secured Term Loans bore interest at a rate determined by reference to EURIBOR (subject to a floor of 0.50% per annum) plus the Applicable Margin specified below for such loans. As of December 31, 2021, the 2028 Dollar Senior Secured Term Loans bore interest at a rate determined by reference to LIBOR divided by a percentage equal to 100% minus the LIBOR Reserve Percentage (as defined in the Senior Secured Term Loans Agreement) (subject to a floor of 0.50% per annum) plus the Applicable Margin specified below for such loans or the Alternate Base Rate plus the Applicable Margin specified below for such loans. As of December 31, 2021, the 2028 Euro Senior Secured Term Loans bore interest at a rate determined by reference to LIBOR (subject to a floor of 0.50% per annum) plus the Applicable Margin specified below for such loans. Term Loans bearing interest at a rate determined by reference to LIBOR are herein called “**LIBOR Loans**” and Term Loans bearing interest at the rate determined by reference to the Alternate Base Rate are herein called “**ABR Loans**.”

The Alternate Base Rate is a rate per annum determined as the highest of (a) the rate of interest quoted on such day in the print edition of The Wall Street Journal, Money Rates Section as the “prime rate”, (b) the Federal Funds Effective Rate (as defined in the Senior Secured Term Loans Agreement) plus 0.50% and (c) the LIBOR Rate (as defined in the Senior Secured Term Loans Agreement) for an interest period of one month (giving effect to the applicable LIBOR floor) plus 1.00%.

As of December 31, 2021, the Applicable Margins for the 2024 Senior Secured Term Loans and the 2028 Senior Secured Term Loans were:

- in the case of the 2024 Dollar Senior Secured Term Loans that are ABR Loans, 1.00% per annum, and in the case of the 2024 Dollar Senior Secured Term Loans that are LIBOR Loans, 2.00% per annum;
- in the case of the 2024 Euro Senior Secured Term Loans, 2.00% per annum;
- in the case of the 2028 Dollar Senior Secured Term Loans that are ABR Loans, 1.50% per annum, and in the case of the 2028 Dollar Senior Secured Term Loans that are LIBOR Loans, 2.50% per annum; and
- in the case of the 2028 Euro Senior Secured Term Loans, 2.75% per annum;

All of the 2024 Dollar Senior Secured Term Loans and 2028 Dollar Senior Secured Loans were LIBOR Loans as of December 31, 2021.

The Applicable Margin for the 2027 Senior Secured Term Loans is equal to 3.00% per annum, subject to a step-down of 0.25% per annum commencing with the delivery of financial statements and a compliance certificate for the second fiscal quarter ended after October 29, 2020, *provided* that such step-down will only be applicable as long as the ratio of Funded Indebtedness to the extent constituting Senior Secured Indebtedness (each such term as defined in the Senior Secured Term Loans Agreement after giving effect to the modifications contained in Exhibit L-1 thereto) less cash, cash equivalents and temporary cash investments to Consolidated EBITDA (as defined in the Senior Secured Term Loans Agreement after giving effect to the modifications contained in Exhibit L-1 thereto) is less than or equal to 2.50 to 1.00.

Overdue amounts owing under the Senior Secured Term Loans Agreement bear interest (a) in the case of overdue principal, at the interest rate that would otherwise be applicable plus 2% per annum and (b) in the case of other overdue amounts, (x) in the case of the 2024 Senior Secured Term Loans and the 2028 Dollar Senior Secured Term Loans, at the interest rate that would apply to the unpaid principal amount of the 2024 Dollar Senior Secured Term Loans or (in the case of the 2028 Dollar Senior Secured Loans, the 2028 Dollar Senior Secured Term Loans), that are ABR Loans or (y) in the case of the 2027 Senior Secured Term Loans and the 2028 Euro Senior Secured Term Loans, at the interest rate that would apply to the unpaid principal amount of the 2027 Senior Secured Term Loans or 2028 Euro Senior Secured Term Loans, as applicable, in each case plus 2% per annum.

Under the Senior Secured Term Loans Agreement, the administrative agent and the Borrower are required to endeavor to establish an alternate rate of interest to LIBOR in certain circumstances such as when the administrative agent determines that LIBOR is not available or if the supervisor for the administrator of LIBOR or a governmental authority having jurisdiction over the administrative agent publicly announces a specific date after which LIBOR shall no longer be used for determining interest rates for loans denominated in the applicable currency.

Security and Guarantees

The Senior Secured Term Loans share the same security package as the Senior Secured Notes, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities.

The obligations under the Senior Secured Term Loans are jointly and severally guaranteed on a senior basis by the Guarantors (the “**Senior Secured Term Loans Guarantors**”). The obligations under the Senior Secured Term Loans are secured by the same collateral securing the Schuldschein Loan and Senior Secured Notes, including, subject to certain exceptions, substantially all of the assets of the Senior Secured Term Loans Guarantors.

No later than 150 days after the end of each financial year (or such longer period as the administrative agent may agree to), (i) the Consolidated EBITDA (as defined in the Senior Secured Term Loans Agreement) of the Senior Secured Term Loans Guarantors must be at least 85% of the Consolidated EBITDA of the Financial Group (defined in the Senior Secured Term Loans Agreement as IGH, Lux I and the Restricted Subsidiaries (as defined in the Senior Secured Term Loans Agreement) of Lux I) and (ii) the total assets of the Senior Secured Term Loans Guarantors must be at least 85% of the consolidated total assets of the Financial Group, in each case subject to certain exceptions.

Covenants

Subject to certain agreed exceptions, the Senior Secured Term Loans Agreement contains negative covenants similar to the negative covenants applicable to the Senior Secured Notes and the Schuldschein Loan Agreement, including covenants restricting the ability of Lux I, the Borrowers and the other restricted subsidiaries of Lux I 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 incur certain liens;
- transfer, lease or sell certain assets;
- enter into arrangements that impose restrictions on the ability of Restricted Subsidiaries (as defined in the Senior Secured Term Loans Agreement) to pay dividends or make other payments to Lux I;
- engage in certain transactions with affiliates;
- designate Unrestricted Subsidiaries (as defined in the Senior Secured Term Loans Agreement);
- consolidate, merge or transfer all or substantially all assets; and
- impair the security interests for the benefit of the Term Loan lenders.

IGH is also subject to more stringent restrictions upon its activities (for example, in relation to the ownership of assets and the business activities in which it may engage).

The Senior Secured Term Loans 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);
- certain ERISA (Employee Retirement Income Security Act) 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 agreements relating to the Intercreditor Deed (as defined below).

The Senior Secured Term Loans Agreement does not contain any financial maintenance covenants.

Repayment

The 2024 Senior Secured Term Loans made under the Senior Secured Term Loans Agreement are to be repaid in equal quarterly instalments, in aggregate annual amounts equal to 1% of the original principal amount of the 2024 Senior Secured Term Loans (subject to adjustment as set forth below). The balance of any additional 2024 Senior Secured Term Loans outstanding will be payable on March 31, 2024. The 2027 Senior Secured Term Loans are to be repaid in equal quarterly instalments, in aggregate annual amounts equal to 1% of the original principal amount of the 2027 Senior Secured Term Loans (subject to adjustment as set forth below). The balance of any 2027 Senior Secured Term Loans outstanding will be payable on the maturity date therefor. The 2028 Dollar Senior Secured Term Loans are to be repaid in equal quarterly instalments, in aggregate annual amounts equal to 1% of the original principal amount of the 2028 Dollar Senior Secured Term Loans (subject to adjustment as set forth below). No amounts repaid by the Borrowers in respect of the Senior Secured Term Loans may be reborrowed.

Prepayments

Mandatory prepayments of the Senior Secured Term Loans are required in an amount equal to:

- in each financial year, 50% (reduced to 25% when the ratio of consolidated total net debt to consolidated EBITDA is less than or equal to 3.75 to 1.00 but greater than 3.25 to 1.00 and 0% when the ratio of consolidated total net debt to consolidated EBITDA is less than or equal to 3.25 to 1.00) of annual excess cash flow (subject to certain adjustments); and
- 100% of the net cash proceeds from any issuance or incurrence of debt, other than debt permitted under the Senior Secured Term Loans Agreement.

All mandatory prepayments of the Senior Secured Term Loans will be made without premium or penalty (except for reimbursement of breakage and redeployment costs in the case of LIBOR Loans) and will be applied to scheduled amortization instalments of principal of the Senior Secured Term Loans in such order as the applicable Borrower may specify (or, absent such specification, in direct order of maturity).

Voluntary prepayments of the Senior Secured Term Loans are permitted without premium or penalty (except as set forth below and except for reimbursement of breakage and redeployment costs in the case of LIBOR Loans) and will be applied to the remaining scheduled amortization instalments of principal of the Term Loans as directed by the Borrowers. Voluntary prepayments or repricing amendments of the 2028 Senior Secured Term Loans made on or prior to the date that is 180 days after November 8, 2021 as a result of certain refinancing or repricing transactions with a lower All-In Yield (as defined in the Senior Secured Term Loans Agreement) are subject to an early prepayment premium equal to 1% of the amount of the 2028 Senior Secured Term Loans prepaid or mandatorily assigned pursuant to the applicable refinancing or repricing transaction.

Events of Default

The Senior Secured Term Loans 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 Senior Secured Term Loans or under the other Senior Finance Documents (as defined in the Senior Secured Term Loans Agreement);
- breach of covenants;
- inaccuracy of representations and warranties in any material respect;
- cross defaults and certain judgment defaults;
- invalidity of the Senior Secured Term Loans Agreement and other Senior Finance Documents;
- certain bankruptcy and insolvency events;
- the occurrence of certain ERISA-related events;
- the occurrence of a change of control; and
- certain breaches of the Intercreditor Deed.

Miscellaneous

The Senior Secured Term Loans Agreement permits the Borrowers to request the establishment of one or more additional tranches of term loans in principal amounts of not less than \$50,000,000 individually, subject to certain conditions specified in the Senior Secured Term Loans Agreement.

The Senior Secured Term Loans Agreement permits the Borrowers to request extensions of the final maturity of all or a portion of the Senior Secured Term Loans and, in that connection, there may be an increase in the interest rates and/or fees payable with respect to the extended Senior Secured Term Loans. Such extensions shall be subject to certain conditions described in the Senior Secured Term Loans Agreement.

The Senior Secured Term Loans Agreement contains customary “yank a bank” provisions allowing the Borrowers to replace a non-consenting lender in connection with (1) amendments and waivers requiring the consent of all lenders or all affected lenders (or all affected lenders of a particular class of lenders) so long as the required lenders (or, where the consent of the required lenders is not required, a majority in interest of the lenders of the relevant class) have consented to such amendments or waivers, (2) any lender becoming a Defaulting Lender (as defined in the Senior Secured Term Loans Agreement), (3) any lender failing to consent to any Extension/Modification Request (as defined in the Senior Secured Term Loans Agreement) made to such lender and (4) requests by lenders for compensation for increased costs, taxes and similar items.

The Senior Secured Term Loans Agreement contains customary loan buyback provisions, which permits the Borrowers to purchase Senior Secured Term Loans from lenders pursuant to open-market transactions or a Dutch auction, subject to certain conditions, including a requirement that the loans purchased are automatically and permanently cancelled.

The Senior Secured Term Loans Agreement is governed by New York law.

Senior Secured Notes due May 2026

Overview

On April 24, 2019, INEOS Finance plc issued €770,000,000 aggregate principal amount 2⁷/₈% Senior Secured Notes due May 2026 (the “**May 2026 Senior Secured Notes**”) under an indenture dated as of April 24, 2019 (the “**May 2026 Senior Secured Notes Indenture**”), among INEOS Finance plc, each of the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee and principal paying agent (the “**May 2026 Senior Secured Notes Trustee**”), The Bank of New York Mellon SA/NV, Luxembourg Branch, as registrar, Luxembourg paying agent and transfer agent and Barclays Bank PLC, as security trustee. As of December 31, 2021, there were €770,000,000 aggregate principal amount of the May 2026 Senior Secured Notes issued and outstanding.

Ranking

The May 2026 Senior Secured Notes are the general senior secured obligations of INEOS Finance plc and rank equally in right of payment with its existing and future indebtedness that is not expressly subordinated to the May 2026 Senior Secured Notes (including, without limitation, the March 2026 Senior Secured Notes, the 2025 Senior Secured Notes, the Senior Secured Term Loans and the Schuldschein Loan), are guaranteed on a senior secured basis by the May 2026 Senior Secured Notes Guarantors (as defined below), rank effectively senior to all existing and future indebtedness of INEOS Finance plc that is unsecured or secured by liens ranking behind the liens securing the May 2026 Senior Secured Notes to the extent of the value of the collateral and rank senior in right of payment to all existing and future obligations of INEOS Finance plc subordinated in right of payment to the May 2026 Senior Secured Notes. In addition, the May 2026 Senior Secured Notes are effectively subordinated in right of payment to all existing and future indebtedness and other liabilities, including trade payables and letters of credit issued by, Lux I's non-guarantor subsidiaries.

Interest Rates, Payment Dates and Maturity

The May 2026 Senior Secured Notes bear interest at a rate of 2⁷/₈% per annum. Interest on the May 2026 Senior Secured Notes is payable semi-annually in arrears on May 1 and November 1 of each year, beginning November 1, 2019. The May 2026 Senior Secured Notes will mature on November 1, 2026.

Guarantees

The May 2026 Senior Secured Notes are jointly and severally guaranteed on a senior secured basis by the Guarantors (other than the Issuer) (the "**May 2026 Senior Secured Notes Guarantors**").

The guarantee of each May 2026 Senior Secured Notes Guarantor is its general senior secured obligation and (i) ranks equally in right of payment with all existing and future obligations of such May 2026 Senior Secured Notes Guarantor that are not expressly subordinated in right of payment to such guarantee, including with respect to the guarantee of the May 2026 Senior Secured Notes by each May 2026 Senior Secured Notes Guarantor, obligations under the Senior Secured Term Loans, the March 2026 Senior Secured Notes, the 2025 Senior Secured Notes and the Schuldschein Loan and, (ii) ranks effectively senior to all existing and future obligations of such May 2026 Senior Secured Notes Guarantor that are unsecured or secured by liens ranking behind the liens securing the May 2026 Senior Secured Notes to the extent of the value of the collateral, (iii) ranks senior in right of payment to all existing and future obligations of such May 2026 Senior Secured Notes Guarantor that are expressly subordinated in right of payment to such guarantee and (iv) is effectively subordinated to any existing and future obligations of such May 2026 Senior Secured Notes 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. In the event of a bankruptcy or insolvency, each such secured lender of each May 2026 Senior Secured Notes Guarantor will have a prior secured claim to any collateral of such May 2026 Senior Secured Notes Guarantor securing the debt owed to them.

The May 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 Senior Secured Term Loans, the March 2026 Senior Secured Notes, the 2025 Senior Secured Notes, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities.

Optional Redemption and Change of Control

At any time prior to May 1, 2022, INEOS Finance plc may redeem all or part of the May 2026 Senior Secured Notes at a redemption price equal to 100% of the principal amount of the May 2026 Senior Secured Notes redeemed plus the greater of (1) 1.0% of the principal amount of such May 2026 Senior Secured Notes; and (2) the excess of (a) the present value at such redemption date of the redemption price of such May 2026 Senior Secured Notes at May 1, 2022, plus all required interest payments that would otherwise be due to be paid on such May 2026 Senior Secured Notes during the period between the redemption date and May 1, 2022, excluding accrued but unpaid interest, computed using a discount rate equal to the Bund rate at such redemption date plus 50 basis points, over (b) the principal amount of such May 2026 Senior Secured Notes.

The May 2026 Senior Secured Notes are subject to redemption at any time on or after May 1, 2022, at the option of INEOS Finance plc, 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

May 1 of the year indicated below:

<u>Year</u>	<u>2026 Senior Secured Notes Redemption Price</u>
2022	101.4375%
2023	100.71875%
2024 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).

At any time prior to May 1, 2022, INEOS Finance plc or any Parent Holdco (as defined in the May 2026 Senior Secured Notes Indenture), at its option, may redeem up to 40% of the initial aggregate principal amount of each of the May 2026 Senior Secured Notes and any additional May 2026 Senior Secured Notes issued under the May 2026 Senior Secured Notes Indenture (the “**Additional May 2026 Senior Secured Notes**”) with the net cash proceeds of certain public equity offerings at 102.875% of the aggregate principal amount of the May 2026 Senior Secured Notes originally issued and the initial aggregate principal amounts of any Additional May 2026 Senior Secured Notes, in each case, plus certain additional amounts, if applicable, and accrued and unpaid interest, if any, to the redemption date, if at least 60% of the sum of the originally issued aggregate principal amount of the May 2026 Senior Secured Notes and any Additional May 2026 Senior Secured Notes remains outstanding.

In connection with any tender offer for, or other offer to purchase, all of the May 2026 Senior Secured Notes, if holders of not less than 90% of the aggregate principal amount of the then outstanding May 2026 Senior Secured Notes validly tender and do not validly withdraw such May 2026 Senior Secured Notes in such tender offer and INEOS Finance plc, or any other Person making such tender offer in lieu of the INEOS Finance plc, purchases all of the May 2026 Senior Secured Notes validly tendered and not validly withdrawn by such holders, INEOS Finance plc will have the right, subject to certain notice requirements, to redeem all (but not less than all) May 2026 Senior Secured Notes that remain outstanding following such purchase at a price equal to the highest price (excluding any tender premium or similar payment) 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 May 2026 Senior Secured Notes may require INEOS Finance plc to repurchase all or a portion of its May 2026 Senior Secured Notes at a purchase price equal to 101% of the principal amount of such May 2026 Senior Secured Notes, plus accrued and unpaid interest to, but not including, the date of purchase.

If INEOS Finance plc sells assets under certain circumstances, it is required to make an offer to purchase the May 2026 Senior Secured Notes at 100% of the principal amount of the May 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 INEOS Finance plc becomes obligated to pay Additional Amounts (as defined in the May 2026 Senior Secured Notes Indenture) to holders of the May 2026 Senior Secured Notes as a result of changes affecting withholding taxes applicable to payments on the May 2026 Senior Secured Notes, it may redeem the May 2026 Senior Secured Notes in whole but not in part at any time at 100% of the principal amount of the May 2026 Senior Secured Notes plus accrued and unpaid interest to the redemption date.

Covenants

The May 2026 Senior Secured Notes Indenture contains covenants that, among other things, limit the ability of our 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 our subsidiaries to pay dividends or make other payments to Lux I;
- engage in certain transactions with affiliates;
- consolidate, merge or transfer all or substantially all of our assets and the assets of our subsidiaries on a consolidated basis;
- impair the security interests for the benefit of the holders of the May 2026 Senior Secured Notes; and
- amend certain documents.

These covenants are subject to a number of important limitations and exceptions. Currently, all of IGH's subsidiaries are Restricted Subsidiaries (as defined in the May 2026 Senior Secured Notes Indenture).

Events of Default

The May 2026 Senior Secured Notes Indenture contains customary events of default, including, among others, the non-payment of principal or interest on the May 2026 Senior Secured Notes, certain failures to perform or observe any other obligation under the May 2026 Senior Secured Notes Indenture or security documents, the failure to pay certain indebtedness or judgments and the bankruptcy or insolvency of IHL or any Significant Restricted Subsidiary (as defined in the May 2026 Senior Secured Notes Indenture). The occurrence of any of the events of default would permit or require the acceleration of all obligations outstanding under the May 2026 Senior Secured Notes.

Senior Secured Notes due March 2026

Overview

On October 29, 2020, INEOS Finance plc issued €325,000,000 aggregate principal amount 3³/₈% Senior Secured Notes due 2026 (the “**March 2026 Senior Secured Notes**”) under an indenture dated as of October 29, 2020 (the “**March 2026 Senior Secured Notes Indenture**”), among INEOS Finance plc, each of the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee and principal paying agent (the “**March 2026 Senior Secured Notes Trustee**”), The Bank of New York Mellon SA/NV, Luxembourg Branch, as registrar, Luxembourg paying agent and transfer agent and Barclays Bank PLC, as security trustee. As of December 31, 2021, there were €325,000,000 aggregate principal amount of the March 2026 Senior Secured Notes issued and outstanding.

Ranking

The March 2026 Senior Secured Notes are the general senior secured obligations of INEOS Finance plc and rank equally in right of payment with its existing and future indebtedness that is not expressly subordinated to the March 2026 Senior Secured Notes (including, without limitation, 2025 Senior Secured Notes, the May 2026 Senior Secured Notes, the Senior Secured Term Loans and the Schuldschein Loan), are guaranteed on a senior secured basis by the March 2026 Senior Secured Notes Guarantors (as defined below), rank effectively senior to all existing and future indebtedness of INEOS Finance plc that is unsecured or secured by liens ranking behind the liens securing the March 2026 Senior Secured Notes to the extent of the value of the collateral and rank senior in right of payment to all existing and future obligations of INEOS Finance plc subordinated in right of payment to the March 2026 Senior Secured Notes. In addition, the March 2026 Senior Secured Notes are effectively subordinated in right of payment to all existing and future indebtedness and other

liabilities, including trade payables and letters of credit issued by, Lux I’s non-guarantor subsidiaries.

Interest Rates, Payment Dates and Maturity

The March 2026 Senior Secured Notes bear interest at a rate of 3^{3/8}% per annum. Interest on the March 2026 Senior Secured Notes is payable semi-annually in arrears on May 15 and November 15 of each year, beginning May 15, 2021. The March 2026 Senior Secured Notes will mature on March 31, 2026.

Guarantees

The March 2026 Senior Secured Notes are jointly and severally guaranteed on a senior secured basis by the Guarantors (other than the Issuer) (the “**March 2026 Senior Secured Notes Guarantors**”).

The guarantee of each March 2026 Senior Secured Notes Guarantor is its general senior secured obligation and (i) ranks equally in right of payment with all existing and future obligations of such March 2026 Senior Secured Notes Guarantor that are not expressly subordinated in right of payment to such guarantee, including with respect to the guarantee of the March 2026 Senior Secured Notes by each March 2026 Senior Secured Notes Guarantor, obligations under the Senior Secured Term Loans, the 2025 Senior Secured Notes, the May 2026 Senior Secured Notes and the Schuldschein Loan, (ii) ranks effectively senior to all existing and future obligations of such March 2026 Senior Secured Notes Guarantor that are unsecured or secured by liens ranking behind the liens securing the March 2026 Senior Secured Notes to the extent of the value of the collateral, (iii) ranks senior in right of payment to all existing and future obligations of such March 2026 Senior Secured Notes Guarantor that are expressly subordinated in right of payment to such guarantee and (iv) is effectively subordinated to any existing and future obligations of such March 2026 Senior Secured Notes 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. In the event of a bankruptcy or insolvency, each such secured lender of each March 2026 Senior Secured Notes Guarantor will have a prior secured claim to any collateral of such March 2026 Senior Secured Notes Guarantor securing the debt owed to them.

Security

The March 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 Senior Secured Term Loans, the 2025 Senior Secured Notes, the May 2026 Senior Secured Notes, the Schuldschein Loan, certain hedging liabilities and certain cash management liabilities.

Optional Redemption and Change of Control

At any time prior to November 15, 2022, INEOS Finance plc may redeem all or part of the March 2026 Senior Secured Notes at a redemption price equal to 100% of the principal amount of the March 2026 Senior Secured Notes redeemed plus the greater of (1) 1.0% of the principal amount of such March 2026 Senior Secured Notes; and (2) the excess of (a) the present value at such redemption date of the redemption price of such March 2026 Senior Secured Notes at November 15, 2022, plus all required interest payments that would otherwise be due to be paid on such March 2026 Senior Secured Notes during the period between the redemption date and November 15, 2022, excluding accrued but unpaid interest, computed using a discount rate equal to the Bund rate at such redemption date plus 50 basis points, over (b) the principal amount of such March 2026 Senior Secured Notes.

The March 2026 Senior Secured Notes are subject to redemption at any time on or after November 15, 2022, at the option of INEOS Finance plc, 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 November 15 of the year indicated below:

Year	March 2026 Senior Secured Notes Redemption Price
2022	101.688%
2023	100.844%
2024 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).

At any time prior to November 15, 2022, INEOS Finance plc or any Parent Holdco (as defined in the March 2026 Senior Secured Notes Indenture), at its option, may redeem up to 40% of the initial aggregate principal amount of each of the March 2026 Senior Secured Notes and any additional March 2026 Senior Secured Notes issued under the March 2026 Senior Secured Notes Indenture (the “**Additional March 2026 Senior Secured Notes**”) with the net cash proceeds of certain public equity offerings at 103.375% of the aggregate principal amount of the March 2026 Senior Secured Notes originally issued and the initial aggregate principal amounts of any Additional March 2026 Senior Secured Notes, in each case, plus certain additional amounts, if applicable, and accrued and unpaid interest, if any, to the redemption date, if at least 60% of the sum of the originally issued aggregate principal amount of the March 2026 Senior Secured Notes and any Additional March 2026 Senior Secured Notes remains outstanding.

In connection with any tender offer for, or other offer to purchase, all of the March 2026 Senior Secured Notes, if holders of not less than 90% of the aggregate principal amount of the then outstanding March 2026 Senior Secured Notes validly tender and do not validly withdraw such March 2026 Senior Secured Notes in such tender offer and INEOS Finance plc, or any other Person making such tender offer in lieu of the INEOS Finance plc, purchases all of the March 2026 Senior Secured Notes validly tendered and not validly withdrawn by such holders, INEOS Finance plc will have the right, subject to certain notice requirements, to redeem all (but not less than all) March 2026 Senior Secured Notes that remain outstanding following such purchase at a price equal to the highest price (excluding any tender premium or similar payment) 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 March 2026 Senior Secured Notes may require INEOS Finance plc to repurchase all or a portion of its March 2026 Senior Secured Notes at a purchase price equal to 101% of the principal amount of such March 2026 Senior Secured Notes, plus accrued and unpaid interest to, but not including, the date of purchase.

If INEOS Finance plc sells assets under certain circumstances, it is required to make an offer to purchase the March 2026 Senior Secured Notes at 100% of the principal amount of the March 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 INEOS Finance plc becomes obligated to pay Additional Amounts (as defined in the March 2026 Senior Secured Notes Indenture) to holders of the March 2026 Senior Secured Notes as a result of changes affecting withholding taxes applicable to payments on the March 2026 Senior Secured Notes, it may redeem the March 2026 Senior Secured Notes in whole but not in part at any time at 100% of the principal amount of the March 2026 Senior Secured Notes plus accrued and unpaid interest to the redemption date.

Covenants

The March 2026 Senior Secured Notes Indenture contains covenants that, among other things, limit the ability of our 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 our subsidiaries to pay dividends or make other payments to Lux I;
- engage in certain transactions with affiliates;
- consolidate, merge or transfer all or substantially all of our assets and the assets of our subsidiaries on a consolidated basis;
- impair the security interests for the benefit of the holders of the March 2026 Senior Secured Notes; and
- amend certain documents.

These covenants are subject to a number of important limitations and exceptions. Currently, all of IGH's subsidiaries are Restricted Subsidiaries (as defined in the March 2026 Senior Secured Notes Indenture).

Events of Default

The March 2026 Senior Secured Notes Indenture contains customary events of default, including, among others, the non-payment of principal or interest on the March 2026 Senior Secured Notes, certain failures to perform or observe any other obligation under the March 2026 Senior Secured Notes Indenture or security documents, the failure to pay certain indebtedness or judgments and the bankruptcy or insolvency of IHL or any Significant Restricted Subsidiary (as defined in the March 2026 Senior Secured Notes Indenture). The occurrence of any of the events of default would permit or require the acceleration of all obligations outstanding under the March 2026 Senior Secured Notes.

Senior Secured Notes due 2025

Overview

On November 3, 2017, INEOS Finance plc issued €550,000,000 aggregate principal amount 2¹/₈% Senior Secured Notes due 2025 (the “**2025 Senior Secured Notes**”) under an indenture dated as of November 3, 2017, as amended (the “**2025 Senior Secured Notes Indenture**”), among INEOS Finance plc, each of the guarantors named therein, The Bank of New York Mellon, London Branch, as trustee and principal paying agent (the “**2025 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 trustee. As of December 31, 2021, there were €550,000,000 aggregate principal amount of the 2025 Senior Secured Notes issued and outstanding.

Ranking

The 2025 Senior Secured Notes are the general senior secured obligations of INEOS Finance plc and rank equally in right of payment with its existing and future indebtedness that is not expressly subordinated to the 2025 Senior Secured Notes (including, without limitation, the Senior Secured Term Loans, the Schuldschein Loan, the March 2026 Senior Secured Notes and the May 2026 Senior Secured Notes), are guaranteed on a senior secured basis by the 2025 Senior Secured Notes Guarantors (as defined below), rank effectively senior to all existing and future indebtedness of INEOS Finance plc that is unsecured or secured by liens ranking behind the liens securing the 2025 Senior Secured Notes to the extent of the value of the collateral and rank senior in right of payment to all existing and future obligations of INEOS Finance plc subordinated in right of payment to the 2025 Senior Secured Notes. In addition, the 2025 Senior Secured Notes are effectively subordinated in right of payment to all existing and future indebtedness and other liabilities, including trade payables and letters of credit issued by, Lux 's non-guarantor subsidiaries.

Interest Rates, Payment Dates and Maturity

The 2025 Senior Secured Notes bear interest at a rate of 2¹/₈% per annum. Interest on the 2025 Senior Secured Notes is payable semi-annually in arrears on May 15 and November 15 of each year, beginning

May 15, 2018. The 2025 Senior Secured Notes will mature on November 15, 2025.

Guarantees

The 2025 Senior Secured Notes are jointly and severally guaranteed on a senior secured basis by the Guarantors (other than the Issuer) (the “**2025 Senior Secured Notes Guarantors**”).

The guarantee of each 2025 Senior Secured Notes Guarantor is its general senior secured obligation and (i) ranks equally in right of payment with all existing and future obligations of such 2025 Senior Secured Notes Guarantor that are not expressly subordinated in right of payment to such guarantee, including with respect to the guarantee of the 2025 Senior Secured Notes by each 2025 Senior Secured Notes Guarantor, obligations under the Senior Secured Term Loans, the Schuldschein Loan, the May 2026 Senior Secured Notes and the March 2026 Senior Secured Notes, (ii) ranks effectively senior to all existing and future obligations of such 2025 Senior Secured Notes Guarantor that are unsecured or secured by liens ranking behind the liens securing the 2025 Senior Secured Notes to the extent of the value of the collateral, (iii) ranks senior in right of payment to all existing and future obligations of such 2025 Senior Secured Notes Guarantor that are expressly subordinated in right of payment to such guarantee and (iv) is effectively subordinated to any existing and future obligations of such 2025 Senior Secured Notes 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. In the event of a bankruptcy or insolvency, each such secured lender of each 2025 Senior Secured Notes Guarantor will have a prior secured claim to any collateral of such 2025 Senior Secured Notes Guarantor securing the debt owed to them.

Security

The 2025 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 Senior Secured Term Loans, the Schuldschein Loan, the May 2026 Senior Secured Notes, the March 2026 Senior Secured Notes, certain hedging liabilities and certain cash management liabilities.

Optional Redemption and Change of Control

At any time prior to November 15, 2020, INEOS Finance plc may redeem all or part of the 2025 Senior Secured Notes at a redemption price equal to 100% of the principal amount of the 2025 Senior Secured Notes redeemed plus the greater of (1) 1.0% of the principal amount of such 2025 Senior Secured Notes; and (2) the excess of (a) the present value at such redemption date of the redemption price of such 2025 Senior Secured Notes at November 15, 2020, plus all required interest payments that would otherwise be due to be paid on such 2025 Senior Secured Notes during the period between the redemption date and November 15, 2020, excluding accrued but unpaid interest, computed using a discount rate equal to the Bund rate at such redemption date plus 50 basis points, over (b) the principal amount of such 2025 Senior Secured Notes.

The 2025 Senior Secured Notes are subject to redemption at any time on or after November 15, 2020, at the option of INEOS Finance plc, 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 November 15 of the year indicated below:

Year	2025 Senior Secured Notes Redemption Price
2020	101.0625%
2021	100.53125%
2022 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).

At any time prior to November 15, 2020, INEOS Finance plc or any Parent Holdco (as defined in the 2025 Senior Secured Notes Indenture), at its option, may redeem up to 40% of the initial aggregate principal amount of each of the 2025 Senior Secured Notes and any additional 2025 Senior Secured Notes issued under

the 2025 Senior Secured Notes Indenture (the “**Additional 2025 Senior Secured Notes**”) with the net cash proceeds of certain public equity offerings at 102.125% of the aggregate principal amount of the 2025 Senior Secured Notes originally issued and the initial aggregate principal amounts of any Additional 2025 Senior Secured Notes, in each case, plus certain additional amounts, if applicable, and accrued and unpaid interest, if any, to the redemption date, if at least 60% of the sum of the originally issued aggregate principal amount of the 2025 Senior Secured Notes and any Additional 2025 Senior Secured Notes remains outstanding.

In connection with any tender offer for, or other offer to purchase, all of the 2025 Senior Secured Notes, if holders of not less than 90% of the aggregate principal amount of the then outstanding 2025 Senior Secured Notes validly tender and do not validly withdraw such 2025 Senior Secured Notes in such tender offer and INEOS Finance plc, or any other Person making such tender offer in lieu of the INEOS Finance plc, purchases all of the 2025 Senior Secured Notes validly tendered and not validly withdrawn by such holders, INEOS Finance plc will have the right, subject to certain notice requirements, to redeem all (but not less than all) 2025 Senior Secured Notes that remain outstanding following such purchase at a price equal to the highest price (excluding any tender premium or similar payment) 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 2025 Senior Secured Notes may require INEOS Finance plc to repurchase all or a portion of its 2025 Senior Secured Notes at a purchase price equal to 101% of the principal amount of such 2025 Senior Secured Notes, plus accrued and unpaid interest to, but not including, the date of purchase.

If INEOS Finance plc sells assets under certain circumstances, it is required to make an offer to purchase the 2025 Senior Secured Notes at 100% of the principal amount of the 2025 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 INEOS Finance plc becomes obligated to pay Additional Amounts (as defined in the 2025 Senior Secured Notes Indenture) to holders of the 2025 Senior Secured Notes as a result of changes affecting withholding taxes applicable to payments on the 2025 Senior Secured Notes, it may redeem the 2025 Senior Secured Notes in whole but not in part at any time at 100% of the principal amount of the 2025 Senior Secured Notes plus accrued and unpaid interest to the redemption date.

Covenants

The 2025 Senior Secured Notes Indenture contains covenants that, among other things, limit the ability of our 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 our subsidiaries to pay dividends or make other payments to Lux I;
- engage in certain transactions with affiliates;
- consolidate, merge or transfer all or substantially all of our assets and the assets of our subsidiaries on a consolidated basis;

- impair the security interests for the benefit of the holders of the 2025 Senior Secured Notes; and
- amend certain documents.

These covenants are subject to a number of important limitations and exceptions. Currently, all of IGH's subsidiaries are Restricted Subsidiaries (as defined in the 2025 Senior Secured Notes Indenture).

Events of Default

The 2025 Senior Secured Notes Indenture contains customary events of default, including, among others, the non-payment of principal or interest on the 2025 Senior Secured Notes, certain failures to perform or observe any other obligation under the 2025 Senior Secured Notes Indenture or security documents, the failure to pay certain indebtedness or judgments and the bankruptcy or insolvency of IHL or any Significant Restricted Subsidiary (as defined in the 2025 Senior Secured Notes Indenture). The occurrence of any of the events of default would permit or require the acceleration of all obligations outstanding under the 2025 Senior Secured Notes.

Gemini HDPE Term Loans

Overview

An Unrestricted Subsidiary of the Group, Gemini HDPE LLC (the "**Gemini Borrower**"), has €600 million aggregate principal amount of term loans (the "**Gemini Term Loans**") outstanding under a credit agreement dated as of August 7, 2014 (as amended and restated as of December 31, 2020) (the "**Gemini Term Loan Agreement**") among the Gemini Borrower, the lenders party thereto, Barclays Bank PLC, as administrative agent, and Citibank, N.A., as security agent. The Gemini Borrower is the owner of the Gemini high-density polyethylene ("**HDPE**") manufacturing facility in La Porte, Texas.

The Gemini Term Loans do not benefit from any security interests over assets of, or direct guarantees from, IGH or its Restricted Subsidiaries. However, the Gemini Term Loans are supported by a tolling agreement pursuant to which the Gemini Borrower manufactures HDPE products for its direct shareholders, INEOS Gemini HDPE Holding Company LLC and INEOS Gemini HDPE LLC, which are also Unrestricted Subsidiaries (the "**Gemini Shareholders**"). The Gemini Shareholders pay the Gemini Borrower for such HDPE products (including amounts to fund the payments due under the Gemini Term Loans, excluding, among other things, any mandatory prepayments of principal of the Gemini Term Loans and any payment of principal of the Gemini Term Loans that becomes due and payable upon acceleration for reasons other than certain defaults under the tolling agreement), and the tolling agreement obligations are guaranteed on an unsecured basis by IGH. A Restricted Subsidiary of the Group is the operator of the facility and has been designated by the Gemini Shareholders, in accordance with the tolling agreement, with the exclusive right to supply the Gemini Borrower with the required components necessary for the production of the HDPE products at the capacity rights of the Gemini Shareholders under the tolling agreement and to take the quantity of the HDPE products corresponding to the production rights of the Gemini Shareholders under the tolling agreement and, as compensation, has agreed to pay to the Gemini Shareholders (or as directed by them) an amount equal to the toll fee payable by the Gemini Shareholders under the tolling agreement.

Interest and Fees

The Gemini Term Loans bear interest at a rate determined by reference to either (i) LIBOR divided by one minus the Applicable Reserve Percentage (as defined in the Gemini Term Loan Agreement) (subject to a floor of 0.50% per annum) plus the Applicable Margin specified below for such loans ("**Adjusted Eurodollar Rate Loans**") or (ii) the Base Rate (subject to a floor of 1.50%) plus the Applicable Margin specified below for such loans ("**Base Rate Loans**").

The Base Rate is a rate per annum determined as the highest of (a) the rate of interest quoted on such day in the print edition of The Wall Street Journal, Money Rates Section as the "prime rate", (b) the Federal Funds rate plus 0.50% and (c) the reserve-adjusted LIBOR for an interest period of one month (giving effect to the applicable LIBOR floor) plus 1.00%.

The Applicable Margins for the Gemini Term Loans are:

- in the case of Adjusted Eurodollar Rate Loans, 3.00% per annum; and

- in the case of Base Rate Loans, 2.00% per annum.

All of the Gemini Term Loans were Adjusted Eurodollar Rate Loans as of December 31, 2021.

Overdue amounts owing under the Gemini Term Loan Agreement bear interest (a) in the case of overdue principal and overdue interest thereon, at the interest rate that would otherwise be applicable to such principal plus 2% per annum and (b) in the case of other overdue amounts, at the interest rate that would apply to the unpaid principal amount of Base Rate Loans plus 2% per annum.

The Gemini Term Loan Agreement includes a mechanism for establishing an alternate rate of interest to LIBOR in certain circumstances such as when the administrator of LIBOR publicly announces that such administrator has ceased or will cease to provide LIBOR permanently or indefinitely.

Security and Guarantees

The Gemini Term Loans are secured by first priority liens on (i) substantially all assets of the Gemini Borrower with customary exceptions and (ii) 100% of the equity interests in the Gemini Borrower. Currently, there are no guarantors under the Gemini Term Loan Agreement; however, the Gemini Term Loan Agreement requires any new subsidiary of the Gemini Borrower to become a guarantor and grant security over its assets to secure the Gemini Term Loans.

Covenants

Subject to certain agreed exceptions, the Gemini Term Loan Agreement contains negative covenants, including, *inter alia*, covenants restricting the ability of the Gemini Borrower to incur additional indebtedness; make restricted payments, including dividends or other distributions; make certain investments; create or incur certain liens; transfer or sell certain assets; engage in certain transactions with affiliates; enter into sale/leaseback transactions; change the nature of its business; undertake certain fundamental changes, including to consolidate, merge or liquidate; amend the tolling agreement and related guarantee and certain other material project documents; amend its organizational documents; change its accounting policies, reporting practices or fiscal year; enter into certain hedging arrangements; and make capital expenditures.

The Gemini Term Loan Agreement also contains certain affirmative covenants, including, *inter alia*, covenants relating to the provision of financial statements and certain other information and notices; inspections; maintenance of certain insurance; filing of tax returns and payment of taxes; preservation of existence; compliance with laws (including environmental laws); maintenance of governmental authorizations; maintenance of the HDPE facility; additional guarantors and security; use of proceeds; further assurances; bank accounts; maintenance of corporate separateness; use of commercially reasonable efforts to maintain certain ratings; performance of contractual obligations; and books and records.

The Gemini Term Loan Agreement does not contain any financial maintenance covenants.

Repayment

The Gemini Term Loans are to be repaid in quarterly installments according to a mortgage-style amortization schedule with 30% of the loan amortizing by the maturity date. The balance of the Gemini Term Loans outstanding will be payable on December 31, 2027. No amounts repaid by in respect of the Gemini Term Loans may be reborrowed.

Prepayments

Mandatory prepayments of the Gemini Term Loans are required in an amount equal to (i) the net cash proceeds from certain incurrences of debt and (ii) net cash proceeds from certain asset sales, insurance proceeds related to casualty events and eminent domain proceeds, in each case under clause (ii) that are not reinvested by the Gemini Borrower.

All mandatory prepayments of the Gemini Term Loans will be made without premium or penalty and will be applied to scheduled amortization installments of principal of the Gemini Term Loans in such order as the Gemini Borrower may specify.

Voluntary prepayments of the Gemini Term Loans are permitted without premium or penalty (except

for reimbursement of breakage and redeployment costs in the case of Adjusted Eurodollar Rate Loans) and will be applied to the remaining scheduled amortization installments of principal of the Gemini Term Loans as directed by the Gemini Borrower.

Events of Default

The Gemini Term Loan 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 grace periods, thresholds and other qualifications: non-payment of amounts due under the Gemini Term Loans or under the other Financing Documents (as defined in the Gemini Term Loan Agreement) or under the tolling agreement guarantee; breach of covenants; inaccuracy of representations and warranties in any material respect; cross defaults and certain judgment defaults; invalidity of the Gemini Term Loan Agreement and other Financing Documents; invalidity of security interests; certain bankruptcy and insolvency events; the occurrence of certain ERISA-related events; defaults under the project agreements, including the tolling agreement and related guarantee; abandonment of the HDPE facility; and the occurrence of a change of control.

Miscellaneous

The Gemini Term Loan Agreement permits the Gemini Borrower to request extensions of the final maturity of all or a portion of the Gemini Term Loans and, in that connection, there may be an increase in the interest rates and/or fees payable with respect to the extended Gemini Term Loans. Such extensions shall be subject to certain conditions described in the Gemini Term Loan Agreement.

The Gemini Term Loan Agreement contains “yank a bank” provisions allowing the Gemini Borrower to replace a non-consenting lender in connection with (1) amendments and waivers requiring the consent of all lenders or all affected lenders (or all affected lenders of a particular class of lenders) so long as the required lenders (or, where the consent of the required lenders is not required, a majority in interest of the lenders of the relevant class) have consented to such amendments or waivers, (2) any lender becoming a Defaulting Lender (as defined in the Gemini Term Loan Agreement), (3) any lender failing to consent to any Extension/Modification Request (as defined in the Gemini Term Loan Agreement) made to such lender and (4) requests by a lender for compensation for increased costs, taxes and similar items.

The Gemini Term Loan Agreement contains loan buyback provisions, which permits, among other things, the Gemini Borrower to purchase Gemini Term Loans from lenders pursuant to open-market or other transactions or a Dutch auction, subject to certain conditions, including a requirement that the loans purchased are automatically and permanently cancelled.

The Gemini Term Loan Agreement is governed by New York law.

Letter of Credit Facility

On May 4, 2012, INEOS Treasury (UK) Limited (the “**LC Borrower**”), a wholly owned subsidiary of INEOS Investment Holdings (Germany) Limited, entered into an on-demand letter of credit facility (the “**LC Facility**”) with Barclays Bank PLC (the “**Issuing Bank**”), under which the LC Borrower may request (on its own behalf or on behalf of other Group companies) the Issuing Bank to issue letters of credit, guarantees, performance bonds and indemnities (or any other instrument in a form agreed by the Issuing Bank) (“**LC Utilizations**”), the outstanding aggregate base currency amount of which is not more than €300 million. Under the terms of the LC Facility, the LC Borrower undertakes to provide cash collateral in an amount at least equal to the aggregate of 100% of the maximum actual and/or contingent liability of the Issuing Bank under each outstanding LC Utilization (or 105%, to the extent cash cover is provided in a currency other than the currency of an LC Utilization) standing to the credit of an account or certain accounts of the LC Borrower which are subject to a lien in favor of the Issuing Bank.

Inventory Financing Facility

In June 2019, the Group entered into an inventory monetization agreement with J Aron & Company LLC (“**J Aron**”), for an initial term of one year but extendable by mutual agreement (the “**Inventory Financing Facility**”). Under this arrangement, the Group sold certain inventory to J Aron and agreed to buy-back equivalent inventory at the end of the term at the same price. During the term, and subject to certain covenants and rights of J Aron, J Aron provides the Group with a just-in-time service for use of the inventory. The Group has the ability to substitute used inventory with equivalent inventory, in return for a transaction fee,

and also to repurchase used inventory for cash. The arrangement is supported by a Group parent company guarantee and a cash collateral mechanism. In June 2020, the Group and J Aron agreed an extension of the term to June 2021 and in April 2021, the term was further extended to June 30, 2022. A further extension option may be exercised by mutual agreement.

Rafnes Facility

As part of the Group's purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the Kerling group on July 1, 2015, the Group assumed the obligations of a €140 million loan facility (the "Rafnes Facility") (previously known as the "Noretyl Facility") that Noretyl AS (now known as INEOS Rafnes AS) had in place. The Rafnes Facility was amended by an amendment and restatement agreement dated 30 October 2014 and an amendment and accession agreement dated 8 November 2019. The current size of the Rafnes Facility is €250 million. The Rafnes Facility matures in November 2024. The total amount outstanding at December 31, 2021 was €214.3 million (December 31, 2020: €250.0 million), of which €71.4 million is due within one year (December 31, 2020: €35.7 million).

The Rafnes Facility is to be repaid in equal semi-annual installments of €35.7 million, starting from December 2021. The Rafnes Facility is secured by pledges over the property, plant and equipment of INEOS Rafnes AS. The outstanding amount under the Rafnes Facility bears interest a rate per annum equal to EURIBOR (subject to a floor of 0% per annum) plus a margin of 2.10%.

Securitization Program

In July 2006, IHL and certain of the other Group companies (such other companies being the "Sellers") entered into a five-year €1,500.0 million receivables securitization facility (as amended, supplemented, varied, novated, extended or replaced from time to time, the "Securitization Program"). The margins on amounts drawn and the commitment fee on amounts undrawn under the Securitization Program have been amended from time to time, most recently on December 13, 2017 in respect of the margins and on December 14, 2015 in respect of the commitment fee. On December 14, 2015, amongst other things, the Securitization Program was updated to include certain newly incorporated Group entities as Sellers. The overall facility amount has also been amended from time to time, most recently to €800.0 million pursuant to an amendment deed dated December 14, 2015. On December 17, 2021, the scheduled termination date for the facility was extended to December 31, 2024. The Securitization Program complies with the terms for a Permitted Receivables Securitization as defined in the Senior Secured Term Loans Agreement.

Under the 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 Finance (Ireland) Limited (the "SPV"). The SPV finances these purchases from borrowings, 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 Securitization Program to benefit from financing costs that are not linked to the Group's corporate rating.

The Securitization Program is restricted to receivables denominated in U.S. dollars, euro or sterling that are sold to the SPV at face value less a small discount to reflect the carry cost until settlement. In some jurisdictions, the sale of the receivables requires the involvement of an intermediate purchaser in order to comply with local securities and banking regulations. The SPV acquires title, on a non-recourse basis, to new receivables as the liability arises and settles its purchases with the Sellers on a twice monthly basis. Between settlement dates, the Sellers have the use of the cash received from customers which has been paid into segregated bank accounts, either 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, remains with the Sellers, with IHL acting on their behalf in its capacity as master servicer.

The twice-monthly settlement period is tied to the term of the loans advanced to the SPV by the lenders against the security of the outstanding receivables. The lenders' advance rate is adjusted each month to reflect the actual performance of the receivables portfolio and standard Rating Agency methodology for calculating loss and dilution reserves and other potential shortfalls is applied. The balance of the SPV's funding requirements is provided by IHL through a subordinated loan facility.

Köln CoGen Facility

As part of a project at the Group's Köln site to replace part of its incineration or cogeneration unit, the Group entered into a €120 million loan facility on December 22, 2017 (the "**Köln CoGen Facility**"). The Köln CoGen Facility is made up of two loan facilities, the original €120 million loan facility and a new €60 million loan facility.

The original facility matures on December 30, 2024 and is to be repaid in equal quarterly instalments of €6 million, starting from March 2020, and bears a fixed interest rate of 2.85% per annum. The total amount outstanding at December 31, 2021 was €132.0 million (December 31, 2020: €96 million).

The new loan facility was entered into in May 2021 and matures on June 30, 2026. The new loan facility is to be repaid in equal quarterly instalments of €3.75 million, starting from September 2022, and bears a fixed interest rate of 2% per annum. The proceeds of the new loan facility may not be used except in relation to the cogeneration unit on the Köln site.

The Köln CoGen Facility is secured by pledges over the plant and equipment of INEOS Manufacturing Deutschland GmbH's new cogeneration assets.

Schuldschein Loan

Overview

INEOS Finance plc has a floating rate loan in an aggregate principal amount of €141.0 million (the "**Schuldschein Loan**") outstanding under an assignable loan agreement dated March 22, 2019 among, *inter alios*, INEOS Finance plc, the Guarantors, Deutsche Bank Aktiengesellschaft, as bank, creditor and paying agent and Wilmington Trust SP Services (Frankfurt) GmbH, as trustee (the "**Schuldschein Loan Agreement**").

Interest Rates, Payment Dates and Maturity

The Schuldschein Loan bears interest at a rate per annum equal to EURIBOR for an interest period of six months (subject to a floor of 0.50% per annum) plus a margin of 2.00%. Interest on the Schuldschein Loan is payable semi-annually in arrears on September 26 and March 26 of each year, beginning on September 26, 2019. The Schuldschein Loan will mature on March 26, 2024.

Security and Guarantees

The Schuldschein Loan shares the same security package as the Senior Secured Term Loans and the Senior Secured Notes. The obligations under the Schuldschein Loan are jointly and severally guaranteed on a senior basis by IGH and the Senior Secured Term Loans Guarantors. The obligations under the Schuldschein Loan are secured by the same collateral securing the Senior Secured Term Loans and the Senior Secured Notes, including, subject to certain exceptions, substantially all of the assets of IGH and the Senior Secured Term Loans Guarantors.

Covenants and Events of Default

The Schuldschein Loan contains negative covenants, affirmative covenants and events of default that generally conform to the negative covenants, certain affirmative covenants and events of default applicable to the Senior Secured Term Loans.

For so long as the aggregate principal amount of the loans outstanding under the Senior Secured Term Loans Agreement represents at least 200% of the aggregate principal amount outstanding under the Schuldschein Loan Agreement, if at any time INEOS Finance plc enters into any amendment, modification or restatement of the Senior Secured Term Loans Agreement which concerns a provision that is substantially the same as the respective provision under the Schuldschein Loan Agreement (including, *inter alia*, in respect of the guarantor and security release provisions, negative covenants, affirmative covenants and events of default, and related definitions), then such amendment, modification or restatement shall be deemed to be incorporated by reference into, and apply to, the Schuldschein Loan Agreement *mutatis mutandis* as if set forth fully in the Schuldschein Loan Agreement.

Change of Control

Upon the occurrence of certain change of control events, each lender under the Schuldschein Loan Agreement may require INEOS Finance plc to repay such lender's outstanding nominal amount of the Schuldschein Loan in an amount equal to 101% of such outstanding nominal amount of the Schuldschein Loan, plus accrued and unpaid interest to, but not including, the date of repayment.

Miscellaneous

The Schuldschein Loan Agreement is governed by German law.

Intercreditor Deed

Unless the context otherwise requires, terms defined below in this description of the Intercreditor Deed apply only to this section.

Overview

Lux I and certain of its subsidiaries (including IHL and INEOS Finance plc) (together, the "**Obligors**"), the Parent and INEOS Holdings Luxembourg S.A. (together, and collectively with certain other entities referred to in the Intercreditor Deed, the "**Subordinated Creditors**") and certain INEOS intra-group creditors (the "**Intra-Group Creditors**") are subject to an intercreditor deed dated May 12, 2010 (as amended and restated by a first amendment deed dated December 23, 2010, as further amended by a second amendment deed dated February 18, 2011, as further amended by a third amendment deed dated February 6, 2012, as further amended and restated by a fourth amendment deed dated May 4, 2012, as further amended and restated by a fifth amendment deed dated May 8, 2013, as further amended and restated by a sixth amendment deed dated July 8, 2014, as further amended by a seventh amendment deed dated May 5, 2015, as further amended and restated by an eighth amendment deed dated January 5, 2017, as further amended and restated by a ninth amendment deed dated November 3, 2017, as further amended by a tenth amendment deed dated March 22, 2019, as further amended by an eleventh amendment deed dated April 24, 2019 and as further amended by a twelfth amendment deed dated October 29, 2020 (the "**Intercreditor Deed**") entered into with the lenders under the Senior Secured Term Loans Agreement (the "**Senior Lenders**"), Barclays Bank PLC as administrative agent (the "**Senior Facility Agent**") for the Senior Lenders and as security agent (the "**Senior Security Agent**") for itself, the Senior Lenders, the institutions named therein as hedge counterparties or cash management banks, the lenders under the Schuldschein Loan Agreement, the holders of the Senior Secured Notes, and any other permitted senior secured notes issued from time to time (the "**Additional Senior Secured Notes**"), the trustee under the 2025 Senior Secured Notes Indenture (the "**2025 Senior Secured Notes Trustee**"), the trustee under the Schuldschein Loan Agreement (the "**Schuldschein Loan Trustee**"), the trustee under the May 2026 Senior Secured Notes Indenture (the "**May 2026 Senior Secured Notes Trustee**") and the trustee under the March 2026 Senior Secured Notes Indenture (the "**March 2026 Senior Secured Notes Trustee**" and, together with the 2025 Senior Secured Notes Trustee and 2026 Senior Secured Notes Trustee, the "**Senior Secured Notes Trustees**"). By accepting a Note, holders of the Notes are deemed to have agreed to, and accepted the terms of, the Intercreditor Deed.

The Intercreditor Deed sets out, by way of agreement between the parties to it, among other things, provisions relating to:

- the relative ranking of certain liabilities of the Obligors;
- the relative ranking of certain security granted by the Obligors and the Parent;
- when payments can be made in respect of certain liabilities of the Obligors and the Parent;
- when enforcement action can be taken in respect of those liabilities;
- the terms pursuant to which certain of those liabilities will be subordinated upon the occurrence of certain insolvency events;
- turnover provisions; and
- when security and guarantees may be released to permit an enforcement sale.

The following description is a summary of certain provisions contained in the Intercreditor Deed. It does not restate the Intercreditor Deed in its entirety and we urge you to read that document because it, and not the discussion that follows, will regulate and govern, among other things, certain of the rights of the lenders under the Senior Secured Term Loans Agreement, the lenders under the Schuldschein Loan Agreement, the holders of the Senior Secured Notes, the holders of the 2024 IGH Notes, the Senior Facility Agent, the Schuldschein Loan Trustee, the 2024 IGH Notes Trustee and the Senior Secured Notes Trustees.

Ranking and Priority

The Intercreditor Deed provides that, subject to the provisions in respect of permitted payments (summarized below), the liabilities of the Obligor in respect of the Senior Secured Notes, the Senior Secured Term Loans, the Schuldschein Loan, the 2024 IGH Notes, and certain other liabilities rank, in summary, in the following order and are postponed and subordinated to any prior ranking liabilities of the Obligor as follows:

- first, each of the following, *pari passu* among themselves: (i) the liabilities of the Obligor under the Senior Secured Term Loans Agreement, under the Schuldschein Loan Agreement and under any other Additional Senior Finance Documents (as defined in the Intercreditor Deed), the liabilities of any Obligor party to certain hedging agreements and cash management arrangements, the liabilities of INEOS Finance plc and the guarantors under the Senior Secured Notes, the Senior Secured Notes Indentures and any Additional Senior Secured Notes (together, the “**Senior Liabilities**”), (ii) fees, costs and expenses of, and amounts incurred by or payable to, the trustee in respect of any High Yield Notes (the “**High Yield Note Trustee Amounts**”), (iii) fees, costs and expenses incurred by or payable to the Senior Facility Agent or any agent appointed to act as security trustee, facility agent or other similar representative for or with respect to any Additional Senior Finance Parties (as defined in the Intercreditor Deed) (including the Schuldschein Loan Trustee) or any agents appointed to act as security agent and security trustee on behalf of any High Yield Notes or fees, costs and expenses incurred by any Second Secured Representative (as defined in the Intercreditor Deed) (other than in respect of any Second Secured Liabilities (as defined in the Intercreditor Deed)) in the form of notes issued pursuant to one or more indentures (“**Agency Amounts**”), (iv) fees, costs and expenses of, and amounts incurred by or payable to, the Senior Secured Notes Trustees and the trustee of any Additional Senior Secured Notes (each, an “**Additional Senior Secured Notes Trustee**”) (collectively, the “**Senior Secured Note Trustee Amounts**”), and (v) fees, costs and expenses of, and amounts incurred by or payable to any Second Secured Note Trustee (the “**Second Secured Note Trustee Amounts**”);
- second, any Second Secured Liabilities (as defined in the Intercreditor Deed);
- third, the liabilities of the Obligor in relation to any High Yield Notes (other than in respect of High Yield Note Trustee Amounts) and the liabilities owed by IHL or Lux I (to the extent it is a borrower of a High Yield Proceeds Loan (as defined in the Intercreditor Deed)) to the Parent or any other permitted lenders (such other lenders, together with Parent, the “**High Yield Proceeds Lenders**”) under any loan of the proceeds of any High Yield Notes (together, the “**Subordinated High Yield Liabilities**”);
- fourth, (i) the liabilities of the Obligor to the Subordinated Creditors (other than in respect of any High Yield Proceeds Loan or any loan of the proceeds of any funds made available under any documents pursuant to or in connection with which any Second Secured Liabilities arise (the “**Second Secured Documents**”) to IHL or Lux I (each, a “**Second Secured Proceeds Loan**”)), (ii) any liabilities owed by any High Yield Note Issuer (as defined in the Intercreditor Deed) or any Additional Second Secured Borrower (as defined in the Intercreditor Deed) to any Subordinated Creditor under certain investor documents, (iii) any other money or liabilities due, owing or payable by any Obligor to any High Yield Note Issuer or any Additional Second Secured Borrower or any parent holding company of the Parent which has acceded to the Intercreditor Deed (other than in respect of any High Yield Proceeds Loan or any Second Secured Proceeds Loan) (the liabilities referred to in paragraphs (i) to (iii) being, together, the “**Subordinated Liabilities**”), and (iv) any liabilities of the Obligor to the Intra-Group Creditors in such capacity (other than liabilities under the Senior Secured Notes Proceeds Loans, the Schuldschein Proceeds Loan, the Senior Secured Term Loans Proceeds Loans or certain other loans of the proceeds of any Senior Liabilities to IHL or any Restricted Subsidiary of the Bottom Swiss Subsidiary (as defined in the Intercreditor Deed) (collectively, the “**Senior Proceeds Loans**”)) (the “**Intra-Group Liabilities**”).

The Intercreditor Deed does not purport to rank any of the Subordinated Liabilities or Intra- Group Liabilities as between themselves. The Intercreditor Deed also provides that, subject to the provisions in respect of permitted payments, the Subordinated Liabilities are postponed and subordinated until the Senior Liabilities, liabilities of the Obligors and the Parent to the holders of any High Yield Notes and any High Yield Notes Trustee (the “**High Yield Liabilities**”) and the Second Secured Liabilities have been discharged in full.

The parties to the Intercreditor Deed agree in the Intercreditor Deed that the liens and other security provided by the Parent and the Obligors rank in the following order:

- first, the security provided in respect of the Senior Liabilities;
- second, any security provided separately in respect of the Second Secured Liabilities, if any; and
- third, the security provided in respect of any High Yield Notes.

Under the Intercreditor Deed, all proceeds from enforcement of security to which the Intercreditor Deed applies are required to be applied in accordance with the terms of the Intercreditor Deed, summarized below under “Application of Proceeds.” Certain security granted by members of the Group (being, for the purposes of the Intercreditor Deed, Lux I and its subsidiaries), for example certain liens granted by the Obligors, are not governed by the Intercreditor Deed.

Permitted Payments

The Intercreditor Deed permits, inter alia, payments to be made by the Obligors, each Additional Senior Secured Borrower (as defined in the Intercreditor Deed), and each High Yield Note Issuer to the Senior Lenders under the Senior Secured Term Loans Agreement, the lenders under the Schuldschein Loan Agreement, the holders of the Senior Secured Notes, the Schuldschein Loan Trustee, the Senior Secured Notes Trustees, (subject to certain restrictions) certain hedge counterparties, certain cash management banks and to lenders under any Additional Senior Finance Documents and holders of any Additional Senior Secured Notes and the Additional Senior Secured Notes Trustees with respect thereto. The Intercreditor Deed also permits payments to be made without further consents being obtained:

- by the Obligors in respect of any Second Secured Liabilities (x) to the extent that the payment is (i) a payment of scheduled interest (or default interest), (ii) a payment under any customary tax gross-up, tax indemnity, illegality or increased costs provision, currency indemnity or indemnity in respect of costs and expenses contained in the Second Secured Documents, or (iii) any consent fee payment customary for the amendment of the Second Secured Documents, in each case so long as such payment is then due and not prohibited by any payment blockage described below, and (y) for so long as such payment is not prohibited by any payment blockage described below, any Obligor may (i) on or after the original maturity date of the Second Secured Liabilities; and (ii) at any time in connection with any provision of the Second Secured Documents specifying a mandatory repayment, offer to purchase or redemption which is either permitted or, if not permitted, provided that consent is obtained from the Majority Senior Lenders, each relevant Additional Senior Facilities Representative and each relevant Senior Secured Notes Trustee and Additional Senior Secured Notes Trustee (as applicable), pay the principal amount due or any other amount payable by it with respect to the Second Secured Liabilities or redeem, acquire or defease the Second Secured Liabilities;
- by the Obligors to any holders of High Yield Notes or any High Yield Note Trustee pursuant to the guarantees to the extent that the payment is (i) a payment of scheduled interest (or default interest), (ii) a payment under any tax gross-up, tax indemnity or increased costs provisions, provided such provisions are in customary form, or (iii) a consent fee payment customary for the amendment of any High Yield Documents, in each case so long as such payment is then due and not prohibited by any payment blockage as described below (except that payments in respect of High Yield Note Trustee Amounts may always be made);
- by IHL or Lux I as borrowers under any High Yield Proceeds Loan to any High Yield Proceeds Lenders in respect of cash interest on any High Yield Proceeds Loan to enable any High Yield Note Issuer to make a payment of scheduled interest and default interest in respect of any High Yield Notes (as defined in the Intercreditor Deed) (the “**High Yield Notes**”), which payment must fall due within five (5) days of the date of payment of the corresponding interest by IHL or Lux I

to the applicable High Yield Note Issuer, and certain other payments by IHL or Lux I to any High Yield Proceeds Lender in respect of sums due under any High Yield Notes (as applicable) and related documents permitted by the Intercreditor Deed, so long as any such payment is not prohibited by any payment blockage as described below (except that payments in respect of High Yield Note Trustee Amounts may always be made); and

- by the Obligors in respect of Intra-Group Liabilities if (i) at the time of the payment no Enforcement Action (as defined below) has occurred and is continuing in respect of the Senior Liabilities or any Second Secured Liabilities, (ii) prior to the date on which all Senior Liabilities have been unconditionally discharged in full (the “**Senior Discharge Date**”), the consent of the Instructing Group (as defined in the Intercreditor Deed) to the relevant payment is obtained or (iii) on or after the Senior Discharge Date but prior to the date on which all Second Secured Liabilities have been unconditionally discharged in full (the “**Second Secured Discharge Date**”), the consent of the Majority Second Secured Creditors (as defined in the Intercreditor Deed) is obtained.

Prior to the later of the Senior Discharge Date and the Second Secured Discharge Date, no Obligor, Additional Second Secured Borrower or High Yield Note Issuer or any of their subsidiaries may make any payments in respect of the Subordinated Liabilities unless, prior to the Senior Discharge Date, where the relevant action is prohibited under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, the Additional Senior Finance Documents or the Senior Secured Note Documents, the prior consent of the Majority Senior Lenders (as defined in the Intercreditor Deed), each security trustee, facility agent or other similar representative with respect to the creditors under each Additional Senior Finance Document (the “**Additional Senior Facilities Representative**”), each Senior Secured Notes Trustee and Additional Senior Secured Notes Trustee (as applicable and relevant) is obtained and, following the Senior Discharge Date but prior to the Second Secured Discharge Date, where the relevant action is prohibited under any Second Secured Document, of the Majority Second Secured Creditors is obtained.

As defined in the Intercreditor Deed, the term “Instructing Group” means the senior creditors under the Intercreditor Deed whose senior credit participations at the relevant time constitute the simple majority in aggregate principal amount of the total senior credit participations at the relevant time.

Payment Blockage

Prior to the Senior Discharge Date, if any Obligor fails to pay on the due date or within any applicable grace period any amount payable under the Senior Finance Documents (including relevant hedging agreements and cash management arrangements), the Schuldschein Loan Agreement, any Additional Senior Finance Document, the Senior Secured Notes Indentures, the Senior Secured Notes or any indenture of any Additional Senior Secured Notes (the “**Additional Senior Secured Notes Indenture**”) or any Additional Senior Secured Notes (all such senior secured notes and indentures, collectively, the “**Senior Secured Notes And Notes Indentures**”) (other than an amount not constituting principal, interest or fees not in excess of €1,000,000 (or its equivalent in any other currency)), the Obligors may not make payments in respect of the Second Secured Liabilities while that failure is continuing. Permitted payments in respect of the Second Secured Liabilities may be resumed when such payment default is cured or waived.

Prior to the Senior Discharge Date, if there is any other default that occurs and is continuing under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any Additional Senior Finance Documents or any Senior Secured Notes And Notes Indentures, the Senior Facility Agent (on the instructions of the Majority Senior Lenders (as defined in the Intercreditor Deed)), the Schuldschein Loan Trustee, or the relevant Additional Senior Facilities Representative or any Senior Secured Notes Trustee (as applicable) may issue a written stop notice (a “**Second Secured Stop Notice**”) to each note trustee, security trustee, facility agent or other similar representative with respect to any holders of interests representing Second Secured Liabilities (the “**Second Secured Creditors**”) (each, a “**Second Secured Representative**”) and notify IHL. From the date of the issue of such notice, the Obligors may not make payments in respect of the Second Secured Liabilities for a period of 179 days (the “**Second Secured Stop Period**”), subject to certain exceptions described below.

Prior to the Senior Discharge Date, from the date of issue of a Second Secured Stop Notice for the duration of the Second Secured Stop Period, no payments may be made that would otherwise be permitted by the Intercreditor Deed in respect of the Second Secured Liabilities unless:

- the event in respect of which the Second Secured Stop Notice was issued has been cured or waived in writing by (if the default has occurred and is (or immediately prior to the waiver was) continuing at such time with respect to the Senior Secured Term Loans Agreement) the Senior Facility Agent, (if the default has occurred and is (or immediately prior to the waiver was) continuing at such time with respect to the Schuldschein Loan Agreement) the Schuldschein Loan Trustee, (if the default is (or immediately prior to the waiver was) continuing with respect to any Additional Senior Finance Documents (as defined in the Intercreditor Deed)) the relevant Additional Senior Facilities Representative, (if the default is (or immediately prior to the waiver was) continuing with respect to the May 2026 Senior Secured Notes) the May 2026 Senior Secured Notes Trustee, (if the default is (or immediately prior to the waiver was) continuing with respect to the March 2026 Senior Secured Notes) the March 2026 Senior Secured Notes Trustee, (if the default is (or immediately prior to the waiver was) continuing with respect to the 2025 Senior Secured Notes) the 2025 Senior Secured Notes Trustee and (if the default is (or immediately prior to the waiver was) continuing with respect to any Additional Senior Secured Notes), the Additional Senior Secured Notes Trustee relating thereto or has ceased to exist;
- (if at any time of cancellation or consent, a default is continuing under the Senior Secured Term Loans Agreement) the Senior Facility Agent, (if at any time of cancellation or consent, a default is continuing under the Schuldschein Loan Agreement) the Schuldschein Loan Trustee, (if at the time of cancellation or consent, a default is continuing under any Additional Senior Finance Documents) the relevant Additional Senior Facilities Representative, (if at the time of cancellation or consent, a default is continuing under the May 2026 Senior Secured Notes) the May 2026 Senior Secured Notes Trustee, (if at the time of cancellation or consent, a default is continuing under the March 2026 Senior Secured Notes) the March 2026 Senior Secured Notes Trustee, (if at the time of the cancellation or consent, a default is continuing under the 2025 Senior Secured Notes) the 2025 Senior Secured Notes Trustee and (if at the time of cancellation or consent, a default is continuing under any Additional Senior Secured Notes) the Additional Senior Secured Notes Trustee cancels the Second Secured Stop Notice or consents to such payment; or
- if applicable, any Second Secured Standstill Period (as defined below) in effect at the time the Second Secured Stop Notice was issued has expired and the relevant event of default to which the Second Secured Standstill Period relates has not been cured or waived.

No Second Secured Stop Notice may be served by the Senior Facility Agent, the Schuldschein Loan Trustee, any Additional Senior Facilities Representative or any Senior Secured Notes Trustee or Additional Senior Secured Notes Trustee in reliance on a particular payment blockage event more than 75 days after the Senior Facility Agent, the Schuldschein Loan Trustee, any Additional Senior Facilities Representative, or any Senior Secured Notes Trustee or Additional Senior Secured Notes Trustee (as applicable) receives notice in writing specifying the occurrence constituting that payment blockage event. Not more than one Second Secured Stop Notice may be served with respect to the same event or set of circumstances. No Second Secured Stop Notice in relation to a payment blockage event may be served unless (i) 365 days have elapsed since the delivery of any previous Second Secured Stop Notice in relation to a payment blockage event and (ii) all scheduled payments of interest on the Second Secured Liabilities that have become due as a result of any previous Second Secured Stop Notice have been paid in full in cash.

Any failure to make a payment due in respect of the Second Secured Liabilities as a result of the issue of a Second Secured Stop Notice will not prevent the occurrence of an event of default under the Second Secured Documents as a consequence of such non-payment or the commencement of an Enforcement Action (defined below) otherwise permitted by the Intercreditor Deed.

If any Obligor fails to pay on the due date or within any applicable grace period any amount payable under the Senior Finance Documents (including relevant hedging agreements and cash management arrangements), the Schuldschein Loan Agreement, any Additional Senior Finance Document, any Senior Secured Notes And Notes Indentures or any Second Secured Document (other than an amount not constituting principal, interest or fees not in excess of €1,000,000 (or its equivalent in any other currency)), the Obligors may not make payments (except if such payment is in the form of Permitted High Yield Note Junior Securities (as defined in the Intercreditor Deed) or comprises High Yield Note Trustee Amounts) in respect of the Subordinated High Yield Liabilities while that failure is continuing. Such payments in respect of any High Yield Notes may be resumed to the extent permitted under the Intercreditor Deed when such payment default is cured or waived.

Prior to the later of the Senior Discharge Date and the Second Secured Discharge Date, if there is any other default that occurs and is continuing under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any Additional Senior Finance Document, any Senior Secured Notes And Notes Indentures or, following the Senior Discharge Date, under any Second Secured Document, the Senior Facility Agent (on the instructions of the Majority Senior Lenders) or the relevant Additional Senior Facilities Representative, the Schuldschein Loan Trustee, any Senior Secured Notes Trustee, any Additional Senior Secured Notes Trustee or the relevant Second Secured Representative (as applicable) may issue a payment blockage notice (a “**Stop Notice**”) to any High Yield Note Trustees and notify each High Yield Representative (as defined in the Intercreditor Deed). From the date of the issue of such notice, the Obligors may not make any payments (except if such payment comprises High Yield Note Trustee Amounts) in respect of the Subordinated High Yield Liabilities or any High Yield Proceeds Loan for a period of 179 days (the “**High Yield Stop Period**”), subject to certain exceptions described below. Prior to the later of the Senior Discharge Date and the Second Secured Discharge Date, from the date of issue of a Stop Notice for the duration of the High Yield Stop Period, blocked payments may not be made unless:

- the event in respect of which the Stop Notice was issued has been cured or, prior to the Senior Discharge Date, waived in writing (if the default is (or immediately prior to the waiver was) continuing with respect to the Senior Secured Term Loans Agreement) by the Senior Facility Agent, (if the default is (or immediately prior to the waiver was) continuing with respect to the Schuldschein Loan Agreement) by the Schuldschein Loan Trustee, (if the default is (or immediately prior to the relevant waiver was) continuing with respect to any Additional Senior Finance Documents) the relevant Additional Senior Facilities Representative, (if the default is (or immediately prior to the waiver was) continuing with respect to the May 2026 Senior Secured Notes) the May 2026 Senior Secured Notes Trustee, (if the default is (or immediately prior to the waiver was) continuing with respect to the March 2026 Senior Secured Notes) the March 2026 Senior Secured Notes Trustee, (if the default is (or immediately prior to the waiver was) continuing with respect to the 2025 Senior Secured Notes) the 2025 Senior Secured Notes Trustee, and (if the default is (or immediately prior to the waiver was) continuing with respect to any Additional Senior Secured Notes) the relevant Additional Senior Secured Notes Trustee or, following the Senior Discharge Date and prior to the Second Secured Discharge Date, waived in writing by the relevant Second Secured Representative or has ceased to exist;
- prior to the Senior Discharge Date, (if at the time of cancellation or consent, a default is continuing under the Senior Facilities) the Senior Facility Agent, (if at any time of cancellation or consent, a default is continuing under the Schuldschein Loan Agreement) the Schuldschein Loan Trustee, (if at the time of cancellation or consent, a default is continuing under any Additional Senior Finance Documents) the relevant Additional Senior Facilities Representative, (if at the time of cancellation or consent, a default is continuing under the May 2026 Senior Secured Notes) the May 2026 Senior Secured Notes Trustee, (if at the time of cancellation or consent, a default is continuing under the March 2026 Senior Secured Notes) the March 2026 Senior Secured Notes Trustee, (if at the time of the cancellation or consent, a default is continuing under the 2025 Senior Secured Notes) the 2025 Senior Secured Notes Trustee, and (if at the time of cancellation or consent, a default is continuing under any Additional Senior Secured Notes) the relevant Additional Senior Secured Notes Trustee cancels the Stop Notice or consents to such payment;
- prior to the Senior Discharge Date, the Senior Liabilities have been repaid in full and all the commitments of the Senior Creditors (as defined in the Intercreditor Deed) cancelled or following the Senior Discharge Date the Second Secured Liabilities have been repaid in full; or
- if applicable, any High Yield Standstill Period (as defined below) in effect at the time the payment Stop Notice was issued has expired and the relevant event of default to which the High Yield Standstill Period relates has not been cured or waived.

No Stop Notice may be served by the Senior Facility Agent, the Schuldschein Loan Trustee, an Additional Senior Facilities Representative or any Senior Secured Notes Trustee or Additional Senior Secured Notes Trustee or a Second Secured Representative (as applicable) in reliance on a particular payment blockage event more than 75 days after the Senior Facility Agent, the Schuldschein Loan Trustee, each Additional Senior Facilities Representative, a Senior Secured Notes Trustee, an Additional Senior Secured Notes Trustee or a Second Secured Representative receives notice in writing specifying the occurrence constituting that payment blockage event. Not more than one Stop Notice may be served by the Senior Facility Agent, the Schuldschein Loan Trustee, each Senior Secured Notes Trustee or Additional Senior Secured Notes Trustee or each Second

Secured Representative (as applicable) with respect to the same event or set of circumstances. No Stop Notice in relation to a payment blockage event may be served unless (i) 365 days have elapsed since the delivery of any previous Stop Notice in relation to a payment blockage event, and (ii) all scheduled payments of interest on any High Yield Notes that have become due as a result of any previous Stop Notice have been paid in full in cash.

Any failure to make a payment due under the indenture for any High Yield Notes (the “**High Yield Notes Indentures**”) or the guarantees of any High Yield Notes as a result of the foregoing will not prevent the occurrence of an event of default under any High Yield Notes as a consequence of such non-payment or the commencement of an Enforcement Action otherwise permitted by the Intercreditor Deed.

Entitlement to Enforce

The Intercreditor Deed provides that the Senior Security Agent will (subject to certain exceptions) enforce the senior security only at the direction of the Instructing Group. Subject to certain exceptions in relation to the Second Secured Security (as defined in the Intercreditor Deed), prior to the Senior Discharge Date, the Second Secured Creditors may only take Enforcement Action with respect to the guarantees or security granted pursuant to the Intercreditor Deed in respect of the Second Secured Liabilities or any Second Secured Proceeds Loan if:

- the prior written consent of the Instructing Group is obtained;
- the Senior Creditors have taken certain Enforcement Action in which case the Second Secured Creditors may take the same Enforcement Action against the same Obligor;
- the Second Secured Creditors have become entitled to do so as a result of the expiry of any Second Secured Standstill Period unless on the expiry of the Second Secured Standstill Period the relevant default to which the Second Secured Standstill Period relates has been waived or cured; or
- certain insolvency events have occurred and are continuing, *provided* that any such insolvency event is not the result of actions of a Second Secured Creditor prohibited under the Intercreditor Deed and provided Enforcement Action may only be taken against the entity in respect of which the insolvency event has occurred.

Prior to the Senior Discharge Date and the Second Secured Discharge Date, the holders of any High Yield Notes and the trustee under any High Yield Notes (the “**High Yield Notes Trustees**”) and any lender under any High Yield Proceeds Loan (together, the “**High Yield Creditors**”) may only take Enforcement Action with respect to the guarantees and security granted in respect of any High Yield Notes or the High Yield Proceeds Loan if:

- the prior written consent of (prior to the Senior Discharge Date) the Instructing Group and (prior to the Second Secured Discharge Date) the Majority Second Secured Creditors (as defined in the Intercreditor Deed) is obtained;
- the Senior Creditors and/or any Second Secured Creditors have taken Enforcement Action against an Obligor, in which case the High Yield Creditors may take Enforcement Action against the same Obligor but may not take any other Enforcement Action until the Senior Discharge Date and any Second Secured Discharge Date shall have occurred except after expiry of a High Yield Standstill Period;
- the High Yield Creditors, as applicable, have become entitled to do so as a result of the expiry of any High Yield Standstill Period unless on the expiry of the High Yield Standstill Period the relevant default to which the High Yield Standstill Period relates has been waived or cured; or
- if certain insolvency events have occurred and are continuing, *provided* that any such insolvency event is not the result of actions of a High Yield Creditor prohibited under the Intercreditor Deed and provided Enforcement Action may only be taken against the entity in respect of which the insolvency event has occurred.

A “**Second Secured Standstill Period**” is defined in the Intercreditor Deed to mean a period of 179 days after written notice has been given by the Majority Second Secured Creditors (as defined in the Intercreditor Deed) to the Senior Facility Agent, the Schuldschein Loan Trustee, each Additional Senior

Facilities Representative and each Senior Secured Notes Trustee and Additional Senior Secured Notes Trustee that an event of default has occurred as a result of any failure to pay any amount of the Second Secured Liabilities when due and payable and is continuing, and specifying that a Second Secured Standstill Period is to commence.

A “**High Yield Standstill Period**” is defined in the Intercreditor Deed to mean a period of 179 days after written notice has been given by any High Yield Notes Trustee to the Senior Facility Agent, the Schuldschein Loan Trustee, each Additional Senior Facilities Representative, any Senior Secured Notes Trustee or Additional Senior Secured Notes Trustee and each Second Secured Representative that an event of default under any High Yield Notes has occurred and is continuing, and specifying that a High Yield Standstill Period is to commence. An “Enforcement Action” is defined in the Intercreditor Deed to mean:

- (a) the acceleration of any liabilities or any declaration that any liabilities are prematurely due and payable or the making of demand for payment of any liabilities after such liabilities have been made payable on demand;
- (b) without prejudice to the right of a hedging counterparty to terminate or close out a hedging transaction as otherwise expressly permitted by the Intercreditor Deed, the designation by a hedge counterparty of an early termination date under any hedging agreement or the making of a demand by a hedge counterparty for payment of all or any amount which would become payable in connection with the occurrence of an early termination date;
- (c) the making of any demand against any Obligor in relation to any guarantee in respect of any liabilities which are due and payable but unpaid or exercising any right to require the Group to acquire any liability (including exercising any put or call option against any member of the Group for the redemption or purchase of any liability);
- (d) the enforcement of any Security Document (as defined in the Intercreditor Deed) or any other security interest granted by any Obligor, any Additional Second Secured Borrower, or any High Yield Note Issuer (including taking any action to crystallize any floating charge forming part of any Security Document);
- (e) the exercise of any right of set-off against any Obligor in respect of any liabilities due and payable but unpaid (excluding, for the avoidance of doubt, any payment or close-out netting under any hedging agreements or any set-off under any cash management arrangements);
- (f) the suing for, commencing or joining of any legal or arbitration proceedings against any Obligor to recover any liabilities; or
- (g) the petitioning, applying or voting for, or the taking of any steps (including the appointment of any liquidator, receiver, administrator or similar officer) which could reasonably be expected to lead to an insolvency event in relation to any Obligor,

provided that the following shall not constitute Enforcement Action:

- (i) the taking of any action falling within paragraph (f) above necessary to preserve the validity and existence of claims, including the registration of such claims before any court or governmental authority;
- (ii) to the extent entitled by law, the taking of any actions against any creditor (or any agent, trustee or receiver acting on behalf of such creditor) to challenge the basis on which any sale or disposal is to take place pursuant to powers granted to such persons under any security documentation;
- (iii) bringing legal proceedings against any person in connection with any securities violation or common law fraud or to restrain any actual or putative breach of the Finance Documents (as defined in the Intercreditor Deed) or for specific performance with no claim for damages; or
- (iv) demand being made for payment of any of the liabilities as a result of it being unlawful for any Senior Creditor, Second Secured Creditor (other than any Second Secured Proceeds Lender) or High Yield Creditor (other than any High Yield Proceeds Lender) to perform any

obligation under the Finance Documents,

unless in the case of any of the actions listed above in paragraphs (i)-(iv) above, such action will result in an insolvency event.

The Intercreditor Deed also contains enforcement provisions in relation to hedge counterparties, Intra-Group Liabilities, Senior Proceeds Loans and Subordinated Liabilities.

Subordination

Upon the occurrence of an insolvency event in relation to an Obligor, claims against that Obligor:

- in respect of any Second Secured Liabilities will be subordinate in right of payment to the claims against that Obligor in respect of Senior Liabilities;
- in respect of the Subordinated High Yield Liabilities will be subordinate in right of payment to the claims against that Obligor in respect of Senior Liabilities and Second Secured Liabilities; and
- in respect of Intra-Group Liabilities and Subordinated Liabilities will be subordinate in right of payment to the claims against that Obligor in respect of Senior Liabilities, Second Secured Liabilities and Subordinated High Yield Liabilities.

Upon the occurrence of an insolvency event in relation to a High Yield Note Issuer or an Additional Second Secured Borrower claims against that High Yield Note Issuer or Additional Second Secured Borrower in respect of the Subordinated Liabilities will be subordinate in right of payment to the claims against that High Yield Note Issuer or Additional Second Secured Borrower in respect of Senior Liabilities, Second Secured Liabilities and High Yield Liabilities (as applicable).

Turnover

Except to the extent prohibited by law and subject to certain exceptions, if at any time on or before the Senior Discharge Date and the Second Secured Discharge Date, any High Yield Creditor or any High Yield Note Issuer:

- receives or recovers any payment or distribution of, or on account of or in relation to, any of the Subordinated High Yield Liabilities which is not a permitted payment under the Intercreditor Deed;
- receives or recovers any amount by way of set-off in respect of any of the Subordinated High Yield Liabilities owed to them which does not give effect to a permitted payment under the Intercreditor Deed;
- receives or recovers proceeds pursuant to any Enforcement Action in respect of the Subordinated High Yield Liabilities except in accordance with the Intercreditor Deed or receives or recovers proceeds pursuant to any Enforcement Action in respect of the collateral for any High Yield Notes (as applicable);
- receives any payment or distribution of any kind whatsoever in relation to the purchase or acquisition of any High Yield Liabilities by any member of the Group;
- receives any distribution in cash or in kind in respect of any liability owed by IHL or the other Obligors in respect of the Subordinated High Yield Liabilities which is made as a result of the occurrence of an insolvency event of any Obligor; or
- receives or recovers any payment or distribution in respect of the High Yield Liabilities as a result of any High Yield Note Issuer receiving or recovering an amount in contravention of the Intercreditor Deed,

that High Yield Creditor or High Yield Note Issuer, as the case may be, will notify the Senior Security Agent and (following the Senior Discharge Date and prior to the Second Secured Discharge Date) each Second Secured Representative and hold that amount in a separate account on trust for (prior to the later of the Senior

Discharge Date) the Senior Security Agent or (following the Senior Discharge Date prior to the Second Secured Discharge Date) each Second Secured Representative and promptly pay that amount (prior to the Senior Discharge Date) to the Senior Security Agent or (following the Senior Discharge Date prior to the Second Secured Discharge Date) a Second Secured Representative or (after deducting from the amount received or recovered the costs and expenses (if any) actually incurred by it in recovering such amount) to be held in trust by such person for application in accordance with the order of priority under the Intercreditor Deed as described below in “Application of Proceeds.” The foregoing provision does not, however, apply to any amounts received or recovered by any High Yield Notes Trustee that have been distributed by it to the holders of any High Yield Notes as applicable, if at the time it distributed such payment it had no actual knowledge that such payment was so prohibited.

The Intercreditor Deed also contains a turnover provision in relation to the Second Secured Liabilities, Intra-Group Liabilities and Subordinated Liabilities as well as certain amounts received by the Obligors generally.

Application of Proceeds

Subject to rights of creditors mandatorily preferred by law applying to companies generally, amounts received by the Senior Security Agent, a Second Secured Representative or trustee or representative under any High Yield Notes Indenture, any hedge counterparty or any cash management bank representing (i) the proceeds of enforcement of any security, (ii) recoveries under any guarantee contained in the Finance Documents and (iii) all amounts paid pursuant to the Intercreditor Deed will be applied in the following order of priority:

- in discharging any sums owing to the Senior Security Agent or any additional agent appointed by the Senior Security Agent, any High Yield Note Trustee Amounts, any Agency Amounts, any Senior Secured Note Trustee Amounts and any Second Secured Note Trustee Amounts, on a *pari passu* basis;
- in payment of all costs and expenses incurred by or on behalf of the Senior Creditors in connection with the enforcement of their security;
- in payment to the Senior Facility Agent (for itself and the Senior Lenders) to discharge the liabilities in respect of the Senior Secured Term Loans Agreement, to the Schuldschein Loan Trustee to discharge the liabilities in respect of the Schuldschein Loan, to hedging counterparties to discharge the liabilities owed to them, to cash management banks to discharge the liabilities owed to them, to the to the May 2026 Senior Secured Notes Trustee for application towards the discharge of the liabilities under the 2026 Senior Secured Indenture, the May 2026 Senior Secured Notes and related documents, to the March 2026 Senior Secured Notes Trustee for application towards the discharge of the liabilities under the March 2026 Senior Secured Indenture, the March 2026 Senior Secured Notes and related documents, to the 2025 Senior Secured Notes Trustee for application towards the discharge of the liabilities under the 2025 Senior Secured Notes Indenture, the 2025 Senior Secured Notes and related documents, to any Additional Senior Secured Notes Trustee for application towards the discharge of the liabilities under the Additional Senior Secured Notes Indenture relating thereto, the applicable Additional Senior Secured Notes and related documents and each Additional Senior Facilities Representative (for itself and the creditors under such Additional Senior Finance Documents) for application towards the discharge of the Additional Senior Lender Liabilities (as defined in the Intercreditor Deed) owing under the Additional Senior Finance Documents, on a *pro rata* basis;
- in payment to each Second Secured Representative on behalf of the Second Secured Creditors which it represents for application towards the discharge of any Second Secured Liabilities, on a *pro rata* basis;
- in payment to any High Yield Notes Trustee for application towards the discharge of the liabilities in respect of the applicable High Yield Notes Indenture and the applicable High Yield Notes, on a *pro rata* basis;
- if none of the Obligors is under any further actual or contingent liability under any Senior Finance Document, Senior Secured Note Document (as defined in the Intercreditor Deed), Second Secured Document, under any High Yield Notes Indenture and related documents, in payment to any person to whom the Senior Security Agent, Second Secured Representative or the trustee or

representative under any High Yield Notes Indenture is obliged to pay in priority to any Obligor; and

- the balance, if any, in payment to the relevant Obligor.

Release of the Guarantees and the Security

The Intercreditor Deed provides that, subject to any consents required from the Majority Senior Lenders and each Senior Secured Notes Trustee and Additional Senior Secured Notes Trustee in certain circumstances being obtained, the Senior Security Agent is authorized to (i) release any security created by the security documents over the relevant asset, and (ii) (if the relevant asset comprises all of the shares in the capital of a member of the Group (as defined in the Intercreditor Deed)) to release that member of the Group and any of its direct or indirect subsidiaries from all past, present and future liabilities (both actual and contingent) and/or its obligations in its capacity as a guarantor, issuer or borrower of the whole or any part of its liabilities in respect of the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any Senior Secured Notes, any Additional Senior Secured Notes, Second Secured Documents, any High Yield Notes and certain other liabilities and to release any security granted by that member of the Group or any of its direct or indirect subsidiaries over any asset under any security document if:

- in connection with any permitted Enforcement Action, the Senior Security Agent or any receiver or administrator sells or otherwise disposes of (or proposes to sell or otherwise dispose of) any asset under any security document; or
- following a default under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any Additional Senior Finance Document, the May 2026 Senior Secured Notes Indenture, the March 2026 Senior Secured Notes Indenture, the 2025 Senior Secured Notes Indenture, or any Additional Senior Secured Notes Indenture (collectively, such indentures, the “**Senior Secured Notes Indentures**”), a member of the Group sells or otherwise disposes of (or proposes to sell or otherwise dispose of) any asset at the request or direction of the Senior Security Agent.

Notwithstanding the preceding paragraph, in the case of any release of the guarantees or security for the Second Secured Liabilities or for any High Yield Notes, the Second Secured Creditors and the High Yield Creditors will only be obliged to release and authorize the release set out above in respect of any Obligor or other person which has granted security or provided a guarantee to the Second Secured Creditors or the High Yield Creditors:

- in the case of the Second Secured Liabilities and any security in respect thereof, if the Majority Second Secured Creditors (as defined in the Intercreditor Deed) have approved the release; or
- in the case of guarantees and security for any High Yield Notes and High Yield Notes Indenture, if the trustee or other representative under each High Yield Notes Indenture confirms to the Senior Security Agent that the holders of any High Yield Notes which it represents have approved the release; or
- if the shares or assets of an Obligor (or the shares of any direct or indirect holding company of such Obligor) are sold or otherwise disposed of pursuant to Enforcement Action taken by the Senior Security Agent (or any receiver or administrator) or at the request or direction of the Senior Security Agent, and the sale or disposal is completed in accordance with applicable law and for a consideration all or substantially all of which is in the form of cash or certain cash equivalents and:
 - (1) in the case of a sale or disposal of shares of an Obligor (or the shares of any direct or indirect holding company of such Obligor) (but only to the extent that any guarantees and security for any High Yield Notes or High Yield Notes Indenture are to be released), concurrently with the completion of such sale or disposal, the indebtedness of the relevant members of the Group being disposed of to (x) the Senior Creditors, (y) the Second Secured Creditors and (z) the lenders of all Subordinated Debt (as defined in the Intercreditor Deed) and Public Debt (as defined in the relevant High Yield Indenture or other document) that is *Pari Passu Debt* (as defined in the Intercreditor Deed) are discharged or released (and not assumed by the relevant purchaser or any affiliate thereof); *provided, however*, that performance bonds and

similar instruments will not be required to be so discharged or released; and

- (2) if applicable, in the case of a sale or disposal of assets other than shares in an Obligor as provided above, concurrently with the completion of such sale or disposal the prior ranking security in favor of the Senior Creditors over such assets is released,

and, in the case of paragraphs (1) and (2) above, either (x) the sale or disposal is made pursuant to a Public Auction (as defined below) or (y) an internationally recognized investment bank or an internationally recognized accounting firm selected by the Senior Security Agent has delivered in respect of the sale or disposal an opinion to (in the case of a sale by or at the request of the Senior Security Agent (or any receiver or administrator)) the trustee or representative under any High Yield Notes Indenture and each Second Secured Representative that the amount received in connection with such sale is fair from a financial point of view taking into account all relevant circumstances including the method of enforcement; *provided* that the liability of such investment bank or accounting firm in giving such opinion may be limited to the amount of its fees in respect of such engagement.

A “**Public Auction**” is defined in the Intercreditor Deed to mean an auction in which more than one bidder participates or is invited to participate conducted with the advice of an internationally recognized investment bank and in which if the sale is undertaken by or at the request of the Senior Security Agent (or any receiver or administrator), pursuant to an enforcement requested by (a) the Instructing Group, in which case the Second Secured Creditors and the High Yield Creditors will have a right to participate in such auction and (b) the Second Secured Creditors, in which case the High Yield Creditors will have a right to participate in such auction.

The Intercreditor Deed also provides that, subject to any consents required from the Majority High Yield Creditors being obtained, the Senior Security Agent, any High Yield Notes Trustee and the applicable Second Secured Representative are authorized to release any security created by the security documents over (i) any assets disposed of in a manner permitted pursuant to the terms of the Senior Secured Term Loans, the Schuldschein Loan, any Additional Senior Secured Term Loans, the May 2026 Senior Secured Notes Indenture, the March 2026 Senior Secured Notes Indenture, the 2025 Senior Secured Notes Indenture, any Additional Senior Secured Notes Indenture and the Second Secured Documents; or (ii) any receivables disposed of pursuant to the Securitization Program in a manner permitted pursuant to the terms of the Senior Secured Term Loans, the Schuldschein Loan, any Additional Senior Secured Term Loans, the May 2026 Senior Secured Notes Indenture, the March 2026 Senior Secured Notes Indenture, the 2025 Senior Secured Notes Indenture, any Additional Senior Secured Notes Indenture and the Second Secured Documents with effect from whichever is the earlier of (1) the date such receivable is disposed of or (2) the date such receivable is offered for disposal or, if not in existence when offered for disposal, the date it subsequently comes into existence.

The Intercreditor Deed further provides that, if it is necessary to do so in order to give effect to certain provisions of the Intercreditor Deed providing that in connection with any refinancing, restructuring, replacement, extension, supplement, increase or incurrence of additional Senior Liabilities and any Second Secured Liabilities such indebtedness shall be secured in priority to the Subordinated High Yield Liabilities, each High Yield Notes Trustee or other representative shall release any security interest which has been granted to it provided that such release occurs on the date of such refinancing, restructuring, replacement, extension, supplement, increase or incurrence and a new security interest is granted to the High Yield Notes Trustee or other representative immediately upon the grant of security interests in respect of such refinancing, restructuring, replacement, extension, supplement, increase or incurrence.

Option to Purchase Debt under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement and the Senior Secured Notes Indentures

If the Senior Creditors under the Senior Secured Term Loans Agreement, the Schuldschein Loan Agreement, any Senior Secured Notes Indenture, any Additional Senior Secured Notes Indenture or any Additional Senior Finance Document have taken any Enforcement Action, any High Yield Notes Trustee may, at the direction of the requisite percentage of the holders of any High Yield Notes under any High Yield Notes Indenture, as applicable, within 60 days after commencement of that Enforcement Action, on giving not less than 14 days' written notice to the Senior Facility Agent, the Schuldschein Loan Trustee, each Additional Senior Facilities Representative, the May 2026 Senior Secured Notes Trustee, the March 2026 Senior Secured Notes Trustee, the 2025 Senior Secured Notes Trustee, any Additional Senior Secured Notes Trustee and each Second Secured Representative, and subject to satisfying certain conditions, purchase all but not part of the debt under

the Senior Secured Term Loans, the Schuldschein Loan, any Additional Senior Secured Lender Liabilities (as defined in the Intercreditor Deed), the May 2026 Senior Secured Notes Indenture, the March 2026 Senior Secured Notes Indenture, the 2025 Senior Secured Notes Indenture, any Additional Senior Secured Notes Indenture, hedging agreements, cash management arrangements and Second Secured Documents (i) in the case of the Senior Secured Term Loans, the Schuldschein Loan, and any Additional Senior Secured Lender Liabilities (as defined in the Intercreditor Deed), at a price equal to the principal amount of such debt and accrued and unpaid interest and fees and expenses, (ii) in the case of any Senior Secured Notes or Additional Senior Secured Notes, at a price equal to the principal amount of such debt and accrued and unpaid interest, any prepayment fees and other fees and expenses and (iii) in the case of any Second Secured Documents, at a price equal to the principal amount of such debt and accrued and unpaid interest, any prepayment fees and other fees and expenses. The Intercreditor Deed also provides for the price to be paid in relation to hedging agreements and cash management arrangements. Upon such purchase, the purchasers will assume the rights and obligations of the lenders under the Senior Secured Term Loans, the Schuldschein Loan and any Additional Senior Lender Liabilities, including hedging arrangements, and the rights and obligations of the holders of any Senior Secured Notes, any Additional Senior Secured Notes and the rights and obligations of the creditors under any Second Secured Documents.

Amendment

The terms of the Intercreditor Deed may only be amended or waived with the written agreement of each of the Senior Facility Agent, each Additional Senior Facilities Representative, any High Yield Notes Trustee, any Second Secured Representative, the Schuldschein Loan Trustee, the May 2026 Senior Secured Notes Trustee, the March 2026 Senior Secured Notes Trustee, the 2025 Senior Secured Notes Trustee, any Additional Senior Secured Notes Trustee and IHL unless (i) any amendments are made to cure defects, resolve ambiguities or reflect changes of a minor, technical or administrative nature, which may be made by the Senior Security Agent and IHL, (ii) any amendments are made to meet the requirements of any person proposing to act as a senior secured note trustee or high yield note trustee which are customary for persons acting in such capacity, which amendments may be made by the Senior Security Agent and IHL, (iii) any amendments which only affect the rights and obligations of one party or class of parties and are not adverse to the rights of the other parties or class of parties, which may be made by only IHL and the party or class of parties affected thereby, or (iv) any amendments are made to give effect to the appointment of an Additional Senior Facilities Representative in respect of the Additional Senior Finance Parties or a Second Secured Representative in respect of the Second Secured Creditors, which amendments may be made by the Senior Security Agent and IHL. Subject to (i) and (ii) in the previous sentence, no amendment or waiver of the Intercreditor Deed may impose new or additional obligations on any party to the Intercreditor Deed or affect the rights or obligations of the Senior Facility Agent, the Schuldschein Loan Trustee, the May 2026 Senior Secured Notes Trustee, the March 2026 Senior Secured Notes Trustee, the 2025 Senior Secured Notes Trustee, any Additional Senior Secured Notes Trustee, the Senior Security Agent or the trustee or representative under any High Yield Notes Trustee, or certain other persons in each case without their prior written consent.

The Senior Security Agent may amend the terms of, waive any of the requirements of, or grant consents under, any of the Senior Security Documents (as defined in the Intercreditor Deed) acting on the instructions of the Senior Facility Agent and (where such consent is required under any Additional Senior Finance Document) of each relevant Additional Senior Facilities Representative and (where such consent is required under any Senior Secured Notes Indenture, Additional Senior Secured Notes Indenture or related documents) of the applicable Senior Secured Notes Trustee or Additional Senior Secure Notes Trustee. Any such amendment, waiver or consent will be deemed to be an amendment, waiver or consent of any equivalent Security Document (as defined in the Intercreditor Deed) granted in favor of the Second Secured Creditors or any High Yield Notes Trustee and the holders of any High Yield Notes but only to the same extent and to no greater extent than the amendment, waiver or consent in relation to the relevant Senior Security Document. Any such amendment, waiver or consent will also be binding on the hedge counterparties save to the extent that in respect of such amendment, waiver or consent the hedge counterparties are treated in a manner which is different to the other Senior Creditors in which event the consent of the hedge counterparties shall also be required. No such amendment, waiver or consent will (without prejudice to any other provision of the Intercreditor Deed) release any security granted to the Second Secured Creditors or any High Yield Notes Trustee or holders of any High Yield Notes except as permitted under the Second Secured Documents or a High Yield Notes Indenture, as applicable.

Notwithstanding the above, any High Yield Notes Trustee, each Second Secured Representative, any Senior Secured Notes Trustee, the Schuldschein Loan Trustee, any Additional Senior Secured Notes Trustee, the Senior Facility Agent, each Additional Senior Facilities Representative and the Senior Security Agent are

authorized to enter into such agreement or agreements with, among others, the Obligors and each High Yield Notes Issuer, whether by way of supplement, amendment or restatement of the Intercreditor Deed or by a separate deed, as may be necessary to give effect to the provisions under the Intercreditor Deed relating to, among others, a permitted refinancing of the Senior Liabilities, the Second Secured Liabilities or the liabilities in respect of any High Yield Notes.

Unless expressly stated otherwise in the Intercreditor Deed, the provisions of the Intercreditor Deed override anything in any of the finance documents to the contrary.

The Intercreditor Deed is governed by English law.

GLOSSARY OF SELECTED TERMS

Term	Definition
Acetone.....	Byproduct of the production of phenol. Is used in the production of methylmethacrylate, polymethylmethacrylate, acrylate and Bisphenol A and acetone-based solvents.
Acetonitrile.....	Co-produced in the manufacture of acrylonitrile and is largely used in solvents.
Acrylic acid.....	Produced from propylene and used in manufacturing absorbent polymers, coatings and adhesives/sealants.
Acrylonitrile.....	A commodity used in a wide variety of consumer applications. Used in the production of acrylic fiber, acrylonitrile butadiene styrene and styrene acrylonitrile. Is manufactured from propylene, ammonia and air with the use of a catalyst.
Acrylonitrile-butadiene styrene (ABS).....	A tough thermoplastic that has a variety of consumer appliance and automotive component uses. Made from acrylonitrile, butadiene and styrene.
Additive.....	An ingredient added to a chemical reaction, usually in polymerization reactions, to impart additional performance properties on the resulting product.
Alpha olefins (AO).....	See “Linear alpha olefins” and “Poly alpha olefins.”
Ammonia.....	Used in the manufacture of acrylonitrile, although its largest end use is in the manufacture of fertilizers. Made from nitrogen and hydrogen with the use of a catalyst.
Aromatics.....	Hydrocarbons that are in a ring formation instead of a linear formation. The major products comprising this group are: benzene, toluene, mixed xylenes, ortho-xylene and para-xylene.
Barrel or bbl.....	Barrel of crude oil, 159 liters by volume.
Benzene.....	A building block for styrene and is also used to make cumene and nylon. Mainly produced from refinery processes or as a co-product of steam cracker operations.
Bisphenol A.....	An intermediate product produced from acetone and phenol used to produce polycarbonate and epoxy-resins.
Butadiene.....	A gas, one of the co-products of the steam cracking process and is used primarily in the production of polymers, principally synthetic rubbers, such as styrene butadiene rubber, which is used to manufacture tires and other rubber products.
Catalyst.....	An ingredient added to facilitate a chemical reaction, but which does not itself get consumed during the reaction process.
Comonomer.....	An additional monomer used in a polymerization reaction to offer additional properties to a polymer.
Copolymer.....	A polymer created by the polymerization of one or more additional monomers (comonomers) to offer additional properties to the resulting polymer.
Cracker.....	See “Olefins cracker.”
Cracking.....	The conversion of large hydrocarbon molecules into smaller ones. Carried out either at high temperatures (thermal cracking), or with the aid of a catalyst and high pressure (catalytic cracking and hydrocracking). The cracking process enables greater quantities of saturated hydrocarbons suitable for gasoline and other light hydrocarbon fractions to be recovered from crude oil.
Cumene.....	Produced from benzene and propylene and is used as a feedstock for producing phenol/acetone, which have a large number of uses in the manufacture of plastics and resins.
Ethane.....	A colourless, odourless gas which is a byproduct of petroleum refining. Primarily used as a petrochemical feedstock for ethylene production.
Ethanolamine.....	An ethylene oxide derivative. Major applications are herbicides, surfactants (used in personal care products and detergent formulations), cement additives, textile chemicals and pigments.
Ethylbenzene.....	An intermediate made from benzene and ethylene and used to make styrene. Virtually all worldwide ethylbenzene production is consumed in the manufacture of styrene.
Ethylene.....	A flammable gas obtained in a process called steam cracking. Itself has no

	consumer applications, but is the basic feedstock for a large number of industrial uses, including the manufacture of polyethylene. Is a key building block for polyethylene, polystyrene, ethylene oxide and other derivatives.
Ethylene glycol (EG)	An industrial chemical primarily used in the manufacture of polyesters and antifreeze/coolants. Produced from ethylene oxide.
Ethylene oxide (EO)	A commodity monomer used as a building block for the manufacture of a wide range of products and intermediates in the chemical industry. Mainly used to produce ethylene glycol and industrial detergents. The products derived from ethylene oxide have many familiar applications and coolants for auto engines, polyester fibers and film. Manufactured from ethylene and oxygen.
Ethylene propylene diene monomer	Made from a combination of ethylene, propylene and another monomer containing two double bonds. Key end use applications after further processing and reaction, are for roofing materials and automotive seals.
Feedstocks	Crude oil and other hydrocarbons used as basic materials in a refining or manufacturing process.
Forties Pipeline System	The pipeline that carries crude oil from a variety of oil fields in the North Sea to the mainland.
Fractionator.....	Splits gas into its components ethane, propane, butane and other natural gas liquids.
Gas.....	Includes methane, ethane, butane and propane.
Glycol ethers.....	Used as solvents in paints, inks and cleaning fluids and are derivatives of ethylene oxide.
High-density polyethylene.....	A type of polyethylene and is a relatively tough thermoplastic. Most common household use is container plastics. Also commonly used for molding, pipe and thin film applications.
Homopolymers	Polymers that are created by the polymerization of a single monomer.
Hydrocarbons	All compounds that consist of hydrogen and carbon. These include crude oil, natural gas, gas, olefins and their derivatives.
Hydrogen cyanide.....	Manufactured as a co-product of acrylonitrile. Is an extremely hazardous gas used mainly to produce polymers, coatings and nylon, and for chemicals used in gold extraction.
kta	Kilotonnes per annum.
Linear alpha olefins (LAO)	Hydrocarbons in a straight chain formation which have physical characteristics and commercial uses that vary according to the length of the hydrocarbon chain. Are co-monomers for certain types of polyethylene. They also have applications as surfactant intermediates, base oil for synthetic lubricants and drilling fluids. They are made from ethylene.
Linear low-density polyethylene ...	A type of polyethylene and has basic properties similar to low-density polyethylene. Low-density polyethylene and linear low-density polyethylene are to a certain extent substitutes. The most significant end use for linear low-density polyethylene is film.
Liquefied petroleum gas (LPG)	A mixture of gases, usually propane and butane, used as fuel in heating appliances and vehicles and also as a petrochemical feedstock.
Low-density polyethylene (LDPE)	The first type of polyethylene invented. Its most common household use is in plastic bags.
Methylmethacrylate	Produced from acetone and is used to manufacture polymethylmethacrylate resins.
Monomer	Feedstock material for the manufacture of polymers and derivative products.
Naphtha.....	A refinery product that is used as a gasoline component, but also serves as feedstock for petrochemical plants.
Natural gas liquids.....	Generally comprise a mixture of ethane, propane, butanes and smaller amounts of other lighter hydrocarbons.
Nitriles	Used to describe acrylonitrile, its co-products and other products produced from ammonia feedstock.
Olefins	Including ethylene and propylene, are the key building blocks of the petrochemical industry and produce a large range of derivative products.
Olefins cracker.....	Breaks down naphtha or other gas feedstocks into olefins, principally ethylene and propylene.
Oxo-alcohols.....	A feedstock for intermediates which are used in many soft plastic products and solvent applications. They are largely produced from propylene feedstock.

Ppm.....	Parts per million.
Phenol.....	Produced from cumene, and is used in the production of Bisphenol A, as well as phenolic resins and caprolactam.
Poly alpha olefins (PAO).....	Made by polymerizing, or merging, several linear alpha olefins together and are used in a large number of automotive and industrial applications (mainly as synthetic lubricants).
Polycarbonate	An engineering thermoplastic polymer which, due to its superior 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	The world's most used thermoplastic (including high-density polyethylene, low-density polyethylene and linear low-density polyethylene). Manufactured by the polymerization of ethylene and co- monomers. Used primarily to produce films for packaging, agricultural applications, molded products, pipes and coatings.
Polyethylene terephthalate (PET) ..	Made by the combination of ethylene glycol and terephthalic acid. Typical end uses include films for packaging and fibers.
Polymer.....	A chemical compound usually made up of a large number of identical components linked together into long molecular chains.
Polymethylmethacrylate resins	Used in a wide range of architectural and industrial applications, ranging from point of sale retail displays to glazing and decorative light panels, and compounds for molding and extrusion.
Polypropylene.....	The world's second most widely used thermoplastic after polyethylene. It is manufactured by the polymerization of propylene. It is used mainly for molding, filaments, fibers and films and is the most significant thermoplastic material used in molded containers and automotive applications.
Polyvinyl chloride (PVC)	The world's third most widely used thermoplastic after polyethylene and polypropylene. It is produced by the polymerization of the vinyl chloride monomer. It is used mainly in the construction industry in the form of pipes and insulation on electric cables.
Propane.....	A gaseous hydrocarbon in its natural state but can be easily liquefied. Its major end uses are as a fuel and as a feedstock for petrochemicals.
Propylene.....	A flammable gas which is largely derived either as a co-product of the refinery fluid catalytic cracker process used to make gasoline or as a co-product of the steam cracking process used to make ethylene. 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 glycols	An industrial chemical, mainly used to produce polyester, paints and coatings, airplane de-icers, antifreeze and industrial coolants, made from propylene oxide.
Propylene oxide	Used in manufacture of polyurethane foams and to make propylene glycols. Primarily made from propylene feedstock.
Solvents	Used to dissolve solids and keep them in liquid form.
Spot market.....	A term used to describe the international trade in one-off cargoes or shipments of commodities, such as crude oil, in which prices closely follow demand and availability.
Thermoplastic	A plastic which softens when heated and hardens again when cooled. Includes polyethylene, polypropylene and polystyrene.
Turnaround	Temporary shutdown of a refinery or petrochemical production facility for required maintenance. 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).

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The following information is from the full IFRS statutory financial statements of INEOS Group Holdings S.A. for the year ended December 31, 2021, dated March 18, 2022.

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To the Shareholders of
INEOS Group Holdings S.A.
62, Avenue de la Liberté
L-1930 Luxembourg

REPORT OF THE REVISEUR D'ENTREPRISES AGREE

Report on the Audit of the Consolidated Financial Statements

Opinion

We have audited the consolidated financial statements of INEOS Group Holdings S.A. and its subsidiaries (the "Group"), which comprise the consolidated balance sheet as at December 31, 2021, and the consolidated income statement, the consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements give a true and fair view of the consolidated financial position of the Group as at December 31, 2021, and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union.

Basis for Opinion

We conducted our audit in accordance with the Law of July 23, 2016 on the audit profession (Law of July 23, 2016) and with International Standards on Auditing (ISAs) as adopted for Luxembourg by the "Commission de Surveillance du Secteur Financier" (CSSF). Our responsibilities under the Law of July 23, 2016 and ISAs as adopted for Luxembourg by the CSSF are further described in the "Responsibilities of the *réviseur d'entreprises agréé*" for the Audit of the Consolidated Financial Statements" section of our report. We are also independent of the Group in accordance with the International Code of Ethics for Professional Accountants, including International Independence Standards, issued by the International Ethics Standards Board for Accountants (IESBA Code) as adopted for Luxembourg by the CSSF together with the ethical requirements that are relevant to our audit of the consolidated financial statements, and have fulfilled our other ethical responsibilities under those ethical requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information

The Board of Directors is responsible for the other information. The other information comprises the information stated in the consolidated annual report including the management report but does not include the consolidated financial statements and our report of the *réviseur d'entreprises agréé* thereon.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report this fact. We have nothing to report in this regard.

Responsibilities of the Board of Directors and Those Charged with Governance for the Consolidated Financial Statements

The Board of Directors is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with IFRSs as adopted by the European Union, and for such internal control as the Board of Directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Board of Directors is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Responsibilities of the “réviseur d'entreprises agréé” for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue a report of the “réviseur d'entreprises agréé” that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Law of July 23, 2016 and with ISAs as adopted for Luxembourg by the CSSF will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with the Law of July 23, 2016 and with ISAs as adopted for Luxembourg by the CSSF, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Board of Directors.
- Conclude on the appropriateness of the Board of Directors use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our report of the "*réviseur d'entreprises agréé*" to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our report of the "*réviseur d'entreprises agréé*". However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities and business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

We communicate with the Board of Directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Report on Other Legal and Regulatory Requirements

The consolidated management report is consistent with the consolidated financial statements and has been prepared in accordance with applicable legal requirements.

For Deloitte Audit, *Cabinet de révision agréé*

Ludovic Mosca, *Réviseur d'entreprises agréé*
Partner

March 18, 2022

INEOS Group Holdings S.A.

CONSOLIDATED INCOME STATEMENT FOR THE YEAR ENDED 31 DECEMBER 2021

	Note	2021	2020	2019
		€m		
Revenue	2	18,826.7	11,303.7	13,705.0
Cost of sales before exceptional items		(15,357.7)	(9,921.5)	(11,774.4)
Exceptional impairment charge.....	4	-	(118.5)	-
Total cost of sales.....		<u>(15,357.7)</u>	<u>(10,040.0)</u>	<u>(11,774.4)</u>
Gross profit		3,469.0	1,263.7	1,930.6
Distribution costs		(215.1)	(207.4)	(229.7)
Administrative expenses before exceptional items.....		(398.4)	(387.5)	(441.0)
Exceptional administrative gain/(expense).....	4	8.9	(8.9)	(48.1)
Total administrative expenses		<u>(389.5)</u>	<u>(396.4)</u>	<u>(489.1)</u>
Operating profit	5	2,864.4	659.9	1,211.8
Share of (loss)/profit of associates and joint ventures using the equity accounting method	12a	(42.5)	(210.0)	67.0
Profit on disposal of investments	3, 12, 13	-	78.3	2.6
Profit on disposal of fixed assets		<u>0.3</u>	<u>1.1</u>	<u>-</u>
Profit before net finance costs		2,822.2	529.3	1,281.4
Finance income	8	248.2	318.3	91.0
Finance costs before exceptional item.....	8	(525.0)	(296.2)	(421.1)
Exceptional finance cost.....	4	(3.5)	-	(11.7)
Total finance costs.....		<u>(528.5)</u>	<u>(296.2)</u>	<u>(432.8)</u>
Net finance (costs)/income		<u>(280.3)</u>	<u>22.1</u>	<u>(341.8)</u>
Profit before tax		2,541.9	551.4	939.6
Tax (charge)/credit.....	9	(449.6)	24.8	(216.3)
Profit for the year		<u>2,092.3</u>	<u>576.2</u>	<u>723.3</u>

The notes on pages F-11 to F-86 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME FOR THE YEAR ENDED 31 DECEMBER 2021

	Note	2021	2010	2019
			€m	
Profit for the year		2,092.3	576.2	723.3
Other comprehensive income/(expense):				
Items that will not be reclassified to profit or loss:				
Remeasurements of post employment benefit obligations net of tax.....	9	134.0	(74.4)	(132.3)
		134.0	(74.4)	(132.3)
Items that may subsequently be reclassified to profit or loss:				
Foreign exchange translation differences		(14.1)	30.8	(1.9)
Net gain/(loss) on translation of foreign operations and hedge of net investment in foreign operations net of tax	9, 25.e	479.2	(527.4)	88.0
		465.1	(496.6)	86.1
Other comprehensive income/(expense) for the year net of tax		599.1	(571.0)	(46.2)
Total comprehensive income for the year		2,691.4	5.2	677.1

The notes on pages F-11 to F-86 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED BALANCE SHEET AS AT 31 DECEMBER 2021

	Note	2021	2020	2019
Non-current assets			€m	
Property, plant and equipment.....	10	8,274.2	7,636.2	6,964.8
Intangible assets	11	938.3	927.2	799.0
Investments in equity-accounted investees.....	12.a	47.2	86.4	371.4
Financial assets at fair value through profit or loss	13	-	-	-
Financial assets at fair value through other comprehensive income.....	14	28.3	28.3	28.3
Derivative financial instruments.....	15	26.2	-	-
Employee benefits.....	21	123.6	82.7	48.5
Trade and other receivables.....	18	826.0	656.2	742.4
Deferred tax assets	16	154.4	183.2	113.2
		<u>10,418.2</u>	<u>9,600.2</u>	<u>9,067.6</u>
Current assets				
Inventories.....	17	1,767.2	1,059.7	1,227.0
Trade and other receivables.....	18	2,470.2	1,394.0	1,544.9
Tax receivable		63.7	281.5	-
Derivative financial instruments.....	15	256.0	154.5	15.3
Cash and cash equivalents.....	28	2,106.1	1,342.2	982.9
		<u>6,663.2</u>	<u>4,231.9</u>	<u>3,770.1</u>
Total assets.....		<u>17,081.4</u>	<u>13,832.1</u>	<u>12,837.7</u>
Equity attributable to owners of the parent				
Share capital.....	23	0.9	0.9	0.9
Share premium		585.6	585.6	585.6
Other reserves		(2,047.6)	(2,646.7)	(2,075.7)
Retained earnings.....		4,814.1	3,521.8	2,945.6
Total equity.....		<u>3,353.0</u>	<u>1,461.6</u>	<u>1,456.4</u>
Non-current liabilities				
Interest-bearing loans and borrowings	19	7,331.5	7,343.2	6,604.8
Lease liabilities	26	830.8	772.8	864.4
Trade and other payables.....	20	113.2	112.9	79.7
Employee benefits.....	21	956.8	1,100.4	984.2
Provisions.....	22	32.3	52.3	46.5
Deferred tax liabilities.....	16	702.3	577.6	291.2
Derivative financial instruments.....	15	-	4.2	-
		<u>9,966.9</u>	<u>9,963.4</u>	<u>8,870.8</u>
Current liabilities				
Interest-bearing loans and borrowings	19	407.8	238.6	248.0
Lease liabilities	26	146.8	120.5	125.4
Trade and other payables.....	20	2,589.0	1,634.0	1,772.0
Tax payable.....		376.2	307.4	278.0
Derivative financial instruments.....	15	236.0	96.9	59.5
Provisions.....	22	5.7	9.7	27.6
		<u>3,761.5</u>	<u>2,407.1</u>	<u>2,510.5</u>
Total liabilities.....		<u>13,728.4</u>	<u>12,370.5</u>	<u>11,381.3</u>
Total equity and liabilities.....		<u>17,081.4</u>	<u>13,832.1</u>	<u>12,837.7</u>

These financial statements were approved by the board of directors on 18 March 2022 and were signed on its behalf by:

Natalina Arena
Director

Florence Bardot
Director

The notes on pages F-11 to F-86 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 31 DECEMBER 2021

	<u>Share capital</u>	<u>Share premium</u>	<u>Other reserves</u>	<u>Retained earnings</u>	<u>Total equity</u>
	€m				
Balance at 1 January 2019	0.9	779.4	(2,029.5)	4,095.1	2,845.9
Profit for the year	-	-	-	723.3	723.3
Other comprehensive (expense)/income:					
Foreign exchange translation differences	-	-	(1.9)	-	(1.9)
Net gain on translation of foreign operations and hedge of net investment in foreign operations net of tax (see Note 9, 25.e)	-	-	88.0	-	88.0
Remeasurements of post employment benefit obligations (see Note 9).....	-	-	(132.3)	-	(132.3)
Transactions with owners, recorded directly in equity:					
Capital reduction	-	(193.8)	-	193.8	-
Dividend.....	-	-	-	(2,066.6)	(2,066.6)
Balance at 31 December 2019	0.9	585.6	(2,075.7)	2,945.6	1,456.4
Profit for the year	-	-	-	576.2	576.2
Other comprehensive income/(expense):					
Foreign exchange translation differences	-	-	30.8	-	30.8
Net loss on translation of foreign operations and hedge of net investment in foreign operations net of tax (see Note 9, 25.e)	-	-	(527.4)	-	(527.4)
Remeasurements of post employment benefit obligations (see Note 9).....	-	-	(74.4)	-	(74.4)
Balance at 31 December 2020	0.9	585.6	(2,646.7)	3,521.8	1,461.6
Profit for the year	-	-	-	2,092.3	2,092.3
Other comprehensive (expense)/income:					
Foreign exchange translation differences	-	-	(14.1)	-	(14.1)
Net gain on translation of foreign operations and hedge of net investment in foreign operations net of tax (see Note 9, 25.e)	-	-	479.2	-	479.2
Remeasurements of post employment benefit obligations (see Note 9).....	-	-	134.0	-	134.0
Transactions with owners, recorded directly in equity:					
Dividend.....	-	-	-	(800.0)	(800.0)
Balance at 31 December 2021	0.9	585.6	(2,047.6)	4,814.1	3,353.0

The notes on pages F-11 to F-86 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FOR THE YEAR ENDED 31 DECEMBER 2021 (continued)

Analysis of other reserves

	<u>Translation reserve</u>	<u>Employee benefits</u>	<u>Merger reserve</u>	<u>Total other reserves</u>
	€m			
Balance at 1 January 2019	(594.8)	(634.0)	(800.7)	(2,029.5)
Foreign exchange translation differences	(1.9)	-	-	(1.9)
Net gain on hedge of net investment in foreign operations.....	88.0	-	-	88.0
Remeasurements of post employment benefit obligations.....	-	(132.3)	-	(132.3)
Balance at 31 December 2019	(508.7)	(766.3)	(800.7)	(2,075.7)
Foreign exchange translation differences	30.8	-	-	30.8
Net loss on hedge of net investment in foreign operations	(527.4)	-	-	(527.4)
Remeasurements of post employment benefit obligations.....	-	(74.4)	-	(74.4)
Balance at 31 December 2020	(1,005.3)	(840.7)	(800.7)	(2,646.7)
Foreign exchange translation differences	(14.1)	-	-	(14.1)
Net gain on hedge of net investment in foreign operations.....	479.2	-	-	479.2
Remeasurements of post employment benefit obligations.....	-	134.0	-	134.0
Balance at 31 December 2021	(540.2)	(706.7)	(800.7)	(2,047.6)

The notes on pages F-11 to F-86 are an integral part of these consolidated financial statements.

INEOS Group Holdings S.A.

CONSOLIDATED STATEMENT OF CASH FLOWS FOR THE YEAR ENDED 31 DECEMBER 2021

	Note	2021	2020	2019
Cash flows from operating activities			€m	
Profit before tax		2,541.9	551.4	939.6
Adjustments for:				
Depreciation and impairment	10	756.4	861.5	681.8
Amortisation and impairment	11	4.3	4.7	3.4
Net finance costs/(income)	4,8	280.3	(22.1)	341.8
Share of loss/(profit) of equity-accounted investees	12a	42.5	210.0	(67.0)
Profit on disposal of investments	3, 13	(0.3)	(78.3)	(2.6)
Profit on sale of property, plant and equipment		-	(1.1)	-
(Increase)/decrease in trade and other receivables		(965.0)	140.2	247.5
(Increase)/decrease in inventories		(637.3)	121.6	195.3
Increase/(decrease) in trade and other payables		866.0	57.2	(105.4)
(Decrease)/increase in provisions and employee benefits		(40.4)	(27.1)	23.5
Tax (paid)/received		(109.7)	68.2	(172.4)
Net cash generated from operating activities		<u>2,738.7</u>	<u>1,886.2</u>	<u>2,085.5</u>
Cash flows from investing activities				
Proceeds from sale of property, plant and equipment		0.9	2.1	0.4
Proceeds from sales of investments		-	0.2	260.9
Interest and other finance income received		259.1	3.7	65.0
Dividends received		0.2	2.4	6.0
Acquisition of businesses, net of cash acquired	3	(56.8)	(196.7)	(70.7)
Acquisition of intangible assets		(31.0)	(53.6)	(44.5)
Acquisition of property, plant and equipment		(809.0)	(1,311.0)	(1,380.0)
Acquisition of other investments		(3.3)	(0.8)	-
Net cash used in investing activities		<u>(639.9)</u>	<u>(1,553.7)</u>	<u>(1,162.9)</u>
Cash flows from financing activities				
Securitisation Facility		(99.1)	(172.1)	6.4
Inventory Financing Facility		114.2	(62.1)	190.9
Proceeds from new Senior Secured Notes		-	325.0	770.0
Redemption of Senior Secured Notes		-	-	(770.0)
Redemption of Senior Notes		(1,078.2)	-	-
Proceeds from new Senior Secured Term Loans		1,073.6	375.0	-
Net proceeds from Gemini Term Loan		-	201.1	-
Issue costs paid		(11.1)	(22.7)	(16.9)
Interest paid		(466.0)	(349.1)	(329.7)
Proceeds from other loans		60.0	29.3	392.0
Repayment of loans		(116.6)	(59.8)	(74.9)
Dividends paid	24	(800.0)	-	(2,066.6)
Capital element of lease payments		(141.9)	(168.2)	(128.4)
Net cash (used in)/from financing activities		<u>(1,465.1)</u>	<u>96.4</u>	<u>(2,027.2)</u>
Net increase/(decrease) in cash and cash equivalents	28	633.7	428.9	(1,104.6)
Cash and cash equivalents at 1 January	28	1,342.2	982.9	2,071.3
Effect of exchange rate fluctuations on cash held		130.2	(69.6)	16.2
Cash and cash equivalents at 31 December	28	<u>2,106.1</u>	<u>1,342.2</u>	<u>982.9</u>

The notes on pages F-11 to F-86 are an integral part of these consolidated financial statements.

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)**

1. ACCOUNTING POLICIES

Overview

INEOS Group Holdings S.A. (the “Company”) is a company incorporated and domiciled in the form of a société anonyme under the laws of the Grand-Duchy of Luxembourg, having its registered office at 62 Avenue de la Liberté L-1930, Luxembourg, Grand-Duchy of Luxembourg. The nature of the operations and principal activities of the Company and its subsidiaries are the manufacture and sale of a range of petrochemical products used in a variety of applications.

Basis of accounting

The Group financial statements consolidate those of the Company and its subsidiaries (together referred to as the “Group”) and equity account the Group’s interest in associates and joint ventures.

The Group continues to implement contingency plans for the COVID-19 pandemic, with the primary objective of maintaining the safety of personnel and the reliable operation of the Group’s plants.

The chemical industry is deemed as essential, critical infrastructure by governments across the world. Throughout the pandemic all of the Group’s plants have continued to operate fully and supply chains have operated without significant disruption. Protecting employees and ensuring that they remain healthy has been the first priority of the Group. All plants have sufficient resources and have implemented measures to ensure that this remains the case throughout the pandemic.

Whilst there is still uncertainty due to the COVID-19 pandemic the Directors have undertaken a rigorous assessment of the potential impact of COVID-19 on demand for the Group’s products and services and the impact on margins for the next 12 months.

The Group meets its day to day working capital requirements through its cash generation from Group operations. The Group held cash balances of €2,106.1 million at 31 December 2021 (2020: €1,342.2 million, 2019: €982.9 million) and interest-bearing loans and borrowings of €7,739.3 million at 31 December 2021 (2020: €7,581.8 million, 2019: €6,852.8 million). The Directors have considered the Group’s projected future cash flows and working capital requirements and are confident that the Company 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, 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 €3,353.0 million as at 31 December 2021 (2020: €1,461.6 million, 2019: €1,456.4 million) and the Group’s ability to meet working capital requirements through its external financing facilities, along with access to cash generated by its subsidiaries, the Directors have concluded that the Group can operate within its current facilities without the need to obtain new ones for a period of at least 12 months from the date of this report and have therefore prepared these financial statements on a going concern basis.

The Group financial statements have been prepared and approved by the directors in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union in response to the IAS regulation (EC 1606/2002) effective as of 31 December 2021 and have been approved for issuance by the Board of Directors on 18 March 2022.

The accounting policies set out below have, unless otherwise stated, been applied consistently to all periods presented in these Group financial statements.

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)**

1. ACCOUNTING POLICIES (continued)

Measurement convention

The financial statements are prepared on the historical cost basis except for derivative financial instruments, financial instruments classified as fair value through the profit or loss or fair value through other comprehensive income (FVOCI) which are stated at their fair value.

Functional and presentation currency

These Group financial statements are presented in euro, which is the functional currency of the majority of operations, with other significant currencies being USD and Sterling. The Group's primary products are sold in an international commodities market which is priced and invoiced primarily in euros.

All financial information presented in euro has been rounded to the nearest €0.1 million.

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 2021, with effect from 1 January 2021, although there has been no material effect on the Group's financial statements:

- Amendment to IFRS 16- COVID-19- Related Rent Concessions - beyond 30 June 2021 (effective date 1 April 2021). The amendment introduces an optional practical expedient that simplifies how a lessee accounts for rent concessions that are a direct consequence of COVID-19.
- Amendments to IFRS 9, IAS 39, IFRS 7 and IFRS 16: Interest Rate Benchmark Reform – Phase 2 has been adopted and has been applied retrospectively. The amendments introduce a practical expedient relating to modifications of financial instruments and lease contracts and specific hedge accounting requirements which is triggered by a replacement of a benchmark interest rate in a contract with a new alternative benchmark rate. The details of the accounting policies are disclosed in Note 1 - "Derivative financial instruments and hedging."

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.

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)

1. ACCOUNTING POLICIES (continued)

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”)

An 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 an SPE, INEOS Finance Ireland Limited, for a debt securitisation programme. The Group does not have any direct or indirect shareholdings in this SPE. INEOS Finance Ireland Limited is controlled by the Group as it was 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 and its assets. INEOS Finance Ireland Limited is therefore regarded as an SPE and has been consolidated in these financial statements.

Associates

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.

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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)

1. ACCOUNTING POLICIES (continued)

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

The Group applies IFRS 11 to all joint arrangements. Under IFRS 11 investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor. The Group has assessed the nature of its joint arrangements and determined them to be joint ventures. 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 losses and movements in other comprehensive income. When the Group's share of losses in 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 policies adopted by the Group.

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.

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 other comprehensive income (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.

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)**

1. ACCOUNTING POLICIES (continued)

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 equity and debt 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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)

1. ACCOUNTING POLICIES (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.

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 re-measurement 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.

Hedge of net investment of foreign operation

The Group applied hedge accounting to foreign exchange differences arising on the retranslation of a foreign currency loan where the loan is designated as a hedge of a net investment in a foreign operation in accordance with IFRS 9.

Most commonly this means that exchange differences arising on retranslation of foreign currency loans designated as a net investment hedge are recognised in the consolidated statement of comprehensive income. Gains and losses accumulated in the translation reserve will be recycled to the statement of comprehensive income when the foreign operation is sold.

When a derivative instrument or a non-derivative financial liability is designated as the hedging instrument in a hedge of a net investment in a foreign operation, the effective portion of, for a derivative changes in the fair value of the hedging instrument or, for a non-derivative, foreign exchange gains and losses is recognised in OCI and presented in the translation reserve within equity. Any ineffective portion of the changes in the fair value of the derivative or foreign exchange gains and losses on the non-derivative is recognised immediately in the income statement. The amount recognised in OCI is reclassified to the income statement as a reclassification adjustment on disposal of the foreign operation.

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)**

1. ACCOUNTING POLICIES (continued)

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 - 40 years
- Plant and equipment and fixtures and fittings 3 - 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.

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 a distributable merger reserve.

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.

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.

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)**

1. ACCOUNTING POLICIES (continued)

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 |

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.

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.

Impairment of financial assets

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.

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 consolidated income statement, the impairment loss is reversed through profit or loss.

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)**

1. ACCOUNTING POLICIES (continued)

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.

Inventories

Inventories 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.

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.

IFRS 16 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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)

1. ACCOUNTING POLICIES (continued)

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.

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 recognized 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.

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)**

1. ACCOUNTING POLICIES (continued)

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.

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.

Provisions

A provision is recognised in the consolidated balance sheet when the Group has a present legal or constructive obligation as a result of a past event, that can be reliably measured and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects risks specific to the liability.

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)**

1. ACCOUNTING POLICIES (continued)

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.

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 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.

Services provided to third parties include administrative and operational services provided to other chemical companies with facilities on our sites and services under tolling arrangements. Under tolling arrangements, customers pay for or provide raw materials to be converted into certain specified products, for which the Group charges a toll fee. The Group only recognises toll fee as revenue earned under such arrangements upon shipment of the converted product to the customer as this is the point at which the control of the service is transferred to the buyer. For all other services, revenue is recognised at a point in time. There are no arrangements of significance which transfer goods or services over time.

Government grants

Government grants are shown in the consolidated 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.

Finance income and expenses

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 gross 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 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 foreign exchange gains.

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)

1. ACCOUNTING POLICIES (continued)

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.

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 Committee of the ultimate parent undertaking, INEOS Limited.

An operating segment is a component of the Group that engages in business activities from which it may earn revenues and incur expenses, including revenues and expenses that relate to transactions with any of the Group's other components and for which discrete financial information is available. An operating segment's operating results are reviewed regularly by the chief operating decision-makers to make decisions about resources to be allocated to the segment and assess its performance.

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.

Segment capital expenditure is the total payments made during the period to acquire property, plant and equipment other than as acquired through business combinations.

Emission trading scheme

The Group participates in the EU Emissions Trading Scheme. 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 Emissions Trading Scheme is recognised in the consolidated income statement once the reduction targets have been met. The emissions permits allocated under the Scheme are at nil cost. 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.

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

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)

1. ACCOUNTING POLICIES (continued)

existing businesses, site closures and demolition costs, 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.

Accounting standards not applied

A number of new standards and amendments are effective for annual periods beginning after 1 January 2022 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:

- Amendments to IAS 37: Onerous Contracts—Cost of Fulfilling a Contract (effective date 1 January 2022).
- Amendments to References to the Conceptual Framework in IFRS 3 (effective date 1 January 2022).
- Amendments to IAS 16: Property, Plant and Equipment—Proceeds before Intended Use (effective date 1 January 2022).
- Annual Improvements to IFRS Standards 2018-2020 (effective date 1 January 2022).
- IFRS 17 Insurance Contracts (effective date 1 January 2023).
- Amendments to IAS 1 Presentation of Financial Statements: Classification of Liabilities as Current or Non-current (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).

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)**

2. OPERATING SEGMENTS

The determination of the Group's operating segments is based on the business units for which information is reported to the Group's Chief Operating Decision Maker. The Group has three reportable segments, as described below.

The Group's Olefins and Polymers business units produce olefins and related products and a broad range of polymers. The Group's olefins businesses are focused on ethylene and propylene, which are the two largest volume olefins globally and are key building blocks for polymers. These olefins are primarily used as feedstock for the Group's polymers business. In addition, the Group sells olefins to third party customers for a variety of industrial and consumer applications, including plastics, rubber and fibre.

- O&P North America segment – In North America, the Group's olefins and polymers business comprises five sites including major facilities in Chocolate Bayou, Texas, and Battleground, Texas.
- O&P Europe segment – In Europe, the Group owns and operates two major cracker complexes, in Köln, Germany and Rafnes, Norway. This includes polymers and derivatives units.
- Chemical Intermediates – This reportable segment is the aggregation, in compliance with IFRS 8, of a number of different business units with similar economic and other characteristics. Chemical Intermediates are high-value added chemical products used as key components in a variety of consumer and industrial products. The Group's chemical intermediates businesses are exposed to similar key commodities, namely oil and gas. They produce a range of products including phenol, alpha olefins, solvents, industrial chemicals and nitriles. The Chemical Intermediates processes are similar in that they are all capital intensive and based upon processing and mixing chemical raw materials to produce chemical products for the next stage along the value chain. The Chemical Intermediates products are distributed on a business-to-business basis across the world. This is performed using similar conventional methods of pipeline, truck, rail or ship container depending on the customer location and size of the order. The Chemical Intermediates customer base is similar in that the customers are generally manufacturers of consumer and industrial products in developed markets and mature industrial economies.

The accounting policies of all of the reportable segments are as described in Note 1.

Information regarding the operations of each reportable segment is included in the following tables. Performance is measured based on earnings before interest, tax, depreciation and amortisation and exceptional items, measured under IFRS ("Segment EBITDA"). A reconciliation to IFRS profit before tax is presented in the following tables. Segment EBITDA is used to measure performance as management believes that such information is the most relevant in evaluating the results of certain segments relative to other entities that operate within these industries. Inter-segment pricing is determined on an arm's length basis. Information regarding segments reviewed by management includes management accounts comprising the profit or loss, cash flows and other financial and non-financial information used to manage the business.

Adjustments in the following tables comprise the following items:

- Elimination of inter-segmental transactions and balances; and
- The Group's share of (loss)/profit in respect of the Refining joint venture.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (forming part of the financial statements)

2. OPERATING SEGMENTS (continued)

Segment information – 2021

	<u>Reportable segments</u>				<u>Adjust- ments</u>	<u>Amounts in financial statements</u>
	<u>O&P North America</u>	<u>O&P Europe</u>	<u>Chemical Inter- mediates</u>	<u>Total of reportable segments</u>		
				€m		
Reportable segment revenue.....	5,527.3	7,526.0	8,496.2	21,549.5	(2,722.8)	18,826.7
Reportable segment EBITDA.....	1,577.2	948.2	1,090.8	3,616.2	-	3,616.2
Depreciation and impairment of property, plant and equipment and amortisation of intangible assets.....	(272.9)	(205.0)	(282.8)	(760.7)	-	(760.7)
Exceptional administrative gains.....	-	-	8.9	8.9	-	8.9
Share of loss of associates and joint ventures.....	-	-	(0.2)	(0.2)	(42.3)	(42.5)
Profit on disposal of fixed assets.....						0.3
Net finance costs.....						(280.3)
Profit before tax from continuing operations.....						2,541.9
Payments for capital expenditure.....	163.2	285.8	360.0	809.0	-	809.0

Major items in the adjustments column include:

- Reportable segment revenues: the elimination of inter-segmental revenues: 2021: €2,722.8 million (2020: €1,492.5 million, 2019: €1,844.5 million).
- Share of (loss)/profit of associates and joint ventures: Refining joint venture: 2021: €(42.3) million (2020: €(205.6) million, 2019: €63.0 million).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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2. OPERATING SEGMENTS (continued)

Segment information – 2020

	<u>Reportable segments</u>			<u>Total of reportable segments</u>	<u>Adjust- ments</u>	<u>Amounts in financial statements</u>
	<u>O&P North America</u>	<u>O&P Europe</u>	<u>Chemical Inter- mediates</u>			
Reportable segment revenue.....	2,785.0	4,658.3	5,352.9	12,796.2	(1,492.5)	11,303.7
Reportable segment EBITDA.....	554.2	395.3	585.5	1,535.0	-	1,535.0
Depreciation and impairment of property, plant and equipment and amortisation of intangible assets	(210.4)	(317.2)	(338.6)	(866.2)	-	(866.2)
Exceptional administrative expenses.....	-	(8.9)	-	(8.9)	-	(8.9)
Share of loss of associates and joint ventures	(4.3)	-	(0.1)	(4.4)	(205.6)	(210.0)
Profit on disposal of investments						78.3
Profit on disposal of fixed assets						1.1
Net finance income						22.1
Profit before tax from continuing operations.....						551.4
Payments for capital expenditure.....	547.0	407.6	356.4	1,311.0	-	1,311.0

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (forming part of the financial statements)

2. OPERATING SEGMENTS (continued)

Segment information - 2019

	Reportable segments				Adjust- ments	Amounts in financial statements
	O&P North America	O&P Europe	Chemical Inter- mediates	Total of reportable segments €m		
Reportable segment revenue.....	3,200.8	5,861.9	6,486.8	15,549.5	(1,844.5)	13,705.0
Reportable segment EBITDA.....	726.8	591.4	626.9	1,945.1	-	1,945.1
Depreciation and impairment of property, plant and equipment and amortisation of intangible assets	(194.8)	(191.9)	(299.1)	(685.8)	0.6	(685.2)
Exceptional administrative expenses.....	-	-	(48.1)	(48.1)	-	(48.1)
Share of profit of associates and joint ventures.....	4.0	-	-	4.0	63.0	67.0
Profit on disposal of investments						2.6
Net finance costs						(341.8)
Profit before tax from continuing operations.....						939.6
Payments for capital expenditure.....	590.3	276.9	512.8	1,380.0	-	1,380.0

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)

2. OPERATING SEGMENTS (continued)

Geographic segments

	Revenues		
	2021	2020	2019
	€m		
Geographical information by location of customers:			
Europe	10,415.7	6,137.3	7,943.2
Americas	6,588.6	3,605.0	4,137.2
Rest of World	1,822.4	1,561.4	1,624.6
Total	18,826.7	11,303.7	13,705.0
Geographical information by location from which the Group derives revenue:			
Europe	11,674.3	7,245.4	9,114.7
Americas	6,623.7	3,567.3	4,203.3
Rest of World	528.7	491.0	387.0
Total	18,826.7	11,303.7	13,705.0

In presenting information on the basis of geographic analysis of segments, segment revenue is based on the geographical location of customers and geographical locations from which the Group derives revenues.

Revenues from external customers for each product and service or each group of similar products and services and a geographic analysis of segment assets are not presented as the necessary information is not available and the Directors are of the opinion that the cost to develop it would be excessive.

All businesses within the Group typically sell individual cargos based on agreed price with delivery from the plant or at the customer premise. As such, the revenue is recognised as title passes, at a point in time, and there are no arrangements of significance which transfer goods or services over time. No significant contract balances arise. No costs to obtain or fulfil contracts are incurred, and therefore no related assets arise.

3. ACQUISITIONS

Acquisition of businesses in the current year

Charter Plastics

On December 31, 2021, the Group acquired the assets of Charter Plastics in Titusville, USA which manufactures high density polyethylene (HDPE) pipe products. The total cash consideration for the assets was \$64.5 million (€56.4 million). This acquisition forms part of the O&P North America reporting segment and is defined as a business under IFRS 3.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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3. ACQUISITIONS (continued)

Effect of the acquisition on individual assets and liabilities

Acquiree's provisional net assets at acquisition:	Provisional fair values recognised on acquisition
	€m
Property, plant and equipment.....	22.2
Inventories.....	12.1
Trade and other receivables.....	6.6
Trade and other payables.....	(2.6)
Net identifiable assets and liabilities	38.3
Consideration paid:	
Cash	56.4
Difference between consideration and provisional net assets acquired	<u>18.1</u>

The fair values disclosed are provisional due to the proximity of the acquisition to the preparation of these financial statements so further work may be required to confirm final fair values. The finalisation of the work to determine the fair values of the assets and liabilities acquired will be completed within 12 months of the acquisition date.

The difference between consideration and net assets acquired has been recognised as goodwill within intangible assets (see Note 11) and has arisen because of the ability of the Group to create product and market diversification in the Northeast region of the USA. The goodwill has been allocated to the O&P North America CGU and is deductible for tax purposes over a period of 15 years.

The fair value of acquired trade receivables was €6.6 million. The gross contractual amounts receivable are €6.6 million, of which none was expected to be uncollectable at the date of acquisition.

Acquisition related costs

The Group incurred acquisition related costs in connection with the transaction of €0.1 million which were charged to administrative expenses in the Group's consolidated income statement during the year ended December 31, 2021.

Updates to prior years

Gemini

On December 31, 2020, the Group acquired 50% of the ordinary shares in Gemini HDPE LLC ("Gemini") from Sasol Chemicals North America LLC for cash consideration of \$223.8 million (€187.3 million). The principal activity of the company is to produce high density polyethylene in La Porte, Texas, USA under tolling arrangements with its owners who provide the feedstock and pay a fee for this service. The acquisition increased the Group's interest in Gemini to 100%. Prior to the acquisition the Group reflected its 50% interest in Gemini as a joint venture (see Note 12a).

As Gemini HDPE LLC is a toll manufacturer on behalf of its owners the overall direct impact on the 2020 Group revenue and profit and loss had the acquisition occurred at the start of 2020 was immaterial.

The fair values assigned to the book values of the identifiable assets and liabilities were reviewed during the year ended December 31, 2021 which resulted in an update to the net assets acquired. In addition, the purchase agreement provided for corrections for actual net working capital contributions compared to target which resulted in a final consideration payment of €0.4 million during the year ended December 31, 2021.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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3. ACQUISITIONS (continued)

Effect of the acquisition on individual assets and liabilities

Acquiree's net assets at acquisition:	Provisional fair values recognised on acquisition	2021 Revaluation updates	Final values recognised on acquisition
	€m	€m	€m
Property, plant and equipment.....	511.6	25.9	537.5
Intangibles.....	27.8	-	27.8
Deferred tax asset.....	1.3	-	1.3
Inventories.....	1.2	-	1.2
Trade and other receivables.....	4.8	-	4.8
Cash and cash equivalents.....	6.2	-	6.2
Interest bearing loans and borrowings.....	(301.0)	-	(301.0)
Trade and other payables.....	(12.7)	-	(12.7)
Deferred tax liability	(3.4)	(2.8)	(6.2)
Net identifiable assets and liabilities	235.8	23.1	258.9
Consideration paid:			
Cash	187.3	0.4	187.7
Fair value of previously held equity interest	187.3	-	187.3
Total consideration.....	374.6	0.4	375.0
Difference between consideration and net assets acquired	138.8	(22.7)	116.1

The difference between consideration and net assets acquired has been recognised as goodwill within intangible assets (see Note 11) and has arisen because of the expected synergies and the ability of the Group to market the full output of Gemini. The goodwill has been allocated to the O&P North America reporting segment and is deductible for tax purposes over a period of 15 years.

Settlement of pre-existing contractual relationship

INEOS and Gemini are parties to four pre-existing agreements namely, a tolling agreement, a ground lease, a licensing agreement and an operating contract. At the acquisition date these pre-existing relationships were effectively settled as part of the acquisition.

The fair value of the agreements at the acquisition date was nil, and consequently there is no adjustment to the consideration paid or income or cost associated with the settlement of the relationship reflected in the Group financial statements.

Acquisition related costs

The Group did not incur any acquisition related costs in connection with the transaction.

Prior to the acquisition date, the Group's interest in the Gemini joint venture was accounted for in accordance with the equity method of accounting. As a result of the acquisition the previously held interest of 50% has been disposed of for a fair value of €187.3 million (\$223.8 million), being the equivalent of the value paid to Sasol for their 50% shareholding. Therefore, the gain on the previously held equity interest in Gemini has been calculated as follows:

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FOR THE YEAR ENDED 31 DECEMBER 2021 (forming part of the financial statements)

3. ACQUISITIONS (continued)

	Gain on disposal of investment
	€m
Fair value of previously held equity interest	187.3
Carrying value of equity accounted investment (see Note 12a)	(109.0)
Profit on previously held interest in Gemini recognised in income statement	78.3

Acquisition of subsidiaries in prior years

WL Plastics

On November 1, 2016 the Group acquired 100% of the shares of WLP Holding Corporation, one of the largest high density polyethylene (HDPE) pipe manufacturers in North America for an initial consideration of €162.1 million. The business is headquartered in Fort Worth, Texas with production facilities in Kentucky, South Dakota, Utah, Texas, and Wyoming. WL Plastics has over 500 million pounds of annual production capacity and provides HDPE pipe for use in oil, gas, industrial, mining, conduit, and municipal water and sewer applications. This acquisition forms part of the O&P North America segment.

During the year ended December 31, 2020 the Group paid a further €15.6 million (2019: €15.0 million) which was the final instalment of the contingent consideration which was subject to the acquired business achieving certain targets over a three year period.

INESCO combined heat and power plant

On March 1, 2019, the Group acquired 100% of the shares of RWE Generation Belgium NV, the owner of a Cogeneration unit on the Oxide Antwerp site in Belgium for cash consideration of €70.4 million. The business consists of two 50MW units and an additional 35MW steam generator. All the steam and approximately one third of the electricity is consumed by the Group and a number of co-siting companies on the site in Antwerp. The remainder of the electricity is sold to the Belgian electricity grid, through a short term marketing contract with the previous owner RWE. This acquisition forms part of the Chemical Intermediates segment and is defined as a business under IFRS 3.

Effect of the acquisition on individual assets and liabilities

Acquiree's net assets at acquisition:

	Final values recognised on acquisition
	€m
Property, plant and equipment.....	34.4
Inventories.....	1.0
Trade and other receivables.....	0.1
Cash and cash equivalents.....	41.9
Trade and other payables.....	(7.0)
Net identifiable assets and liabilities	70.4

Consideration paid:

Cash	70.4
Difference between consideration and net assets acquired	-

For the ten month period since March 1, 2019, the acquired business contributed revenue of €123.5 million and an EBITDA of €14.3 million. If the acquisition had occurred on January 1, 2019, management estimates that the business would have contributed revenues of €148.5 million and EBITDA of €17.1 million.

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FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)**

3. ACQUISITIONS (continued)

Acquisition of assets in prior years

Shale oil and gas assets

In April 2019 the Group purchased 104 active oil and gas wells and three non-active oil and gas wells located in the Giddings Fields in Texas USA. In addition to the purchase of the wells the Group acquired all acreage associated with each well. The total cash consideration for the assets was €27.2 million which included €24.4 million in respect of intangible well rights, €2.6 million relating to property, plant and equipment and €0.2 million relating to inventories.

4. EXCEPTIONAL ITEMS

	2021	2020	2019
Exceptional cost of sales:		€m	
Property, plant and equipment impairment charge (see Note 10).....	-	118.5	-
Exceptional administrative (gain)/expense.....	(8.9)	8.9	48.1
Exceptional finance costs.....	3.5	-	11.7

Exceptional cost of sales

The Group recognised an exceptional impairment charge of €118.5 million for the year ended December 31, 2020 in relation to plant and equipment following the Group's decision to terminate work on a propane dehydrogenation unit and associated infrastructure at its site in Antwerp, Belgium (see Note 10).

Exceptional administrative (gain)/expense

In December 2019 the Group took the decision to close the Nitriles facility at Seal Sands, United Kingdom. Poor operating performance and uneconomic capital expenditure requirements to meet safety and environmental obligations led to the decision. As a result, an exceptional administrative charge of €35.1 million was incurred in 2019 for closure costs including severance and outplacement expenses, together with decommissioning and demolition costs. In addition, tangible fixed assets at the facility of €33.3 million were impaired during the year ended December 31, 2019 along with a further €26.2 million impairment charge in the year ended December 31, 2020 (see Note 10). During the year ended December 31, 2021 an exceptional administrative gain of €8.9 million was credited to the income statement following the final true up of the original closure cost provision made in December 2019 as a result of lower than expected demolition costs.

An exceptional administrative expense of €8.9 million has been charged during 2020, which related to a provision for early retirement costs as part of a restructuring of the Koln site within the O&P Europe business.

An exceptional administrative charge of €13.0 million was also incurred during 2019 relating to the settlement of an intellectual property dispute in respect of the former Technologies business.

Exceptional finance costs

In November 2021 following the early redemption of the Senior Notes due 2024, an exceptional finance cost of €3.5 million was recognised following the write-off of deferred issue costs associated with the redeemed Notes.

In April 2019 following the early redemption of the Senior Secured Notes due 2023, an exceptional finance cost of €11.7 million was recognised which included an early prepayment premium of €7.7 million and the write-off of deferred issue costs associated with the redeemed Notes of €4.0 million.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (forming part of the financial statements)

5. OPERATING PROFIT

Included in operating profit are the following:

	<u>2021</u>	<u>2020</u>	<u>2019</u>
		€m	
Research and development expensed as incurred.....	35.2	34.8	40.0
Amortisation of other intangible assets	4.3	4.7	3.4
Amortisation of government grants.....	(3.1)	(2.6)	(9.6)
Expenses relating to short-term leases.....	23.7	28.0	31.1
Expenses relating to leases of low value assets	0.7	0.8	0.6
Expenses relating to variable lease payments not included in the measurement of the lease liability	11.0	10.0	12.3
Income from sub-leasing of right-of-use assets.....	(12.7)	(13.2)	(0.2)
Depreciation and impairment of property, plant and equipment:			
Owned assets.....	600.5	698.6	527.5
Right-of-use assets	155.9	162.9	154.3

Auditors' remuneration:

	<u>2021</u>	<u>2020</u>	<u>2019</u>
		€m	
Audit of these financial statements.....	0.6	0.5	0.5
Amounts receivable by auditors and their associates in respect of:			
Audit of financial statements of subsidiaries pursuant to legislation.....	3.0	2.8	3.2
Other services relating to taxation.....	0.1	0.1	0.3
All other services.....	0.5	0.8	1.2
	<u>4.2</u>	<u>4.2</u>	<u>5.2</u>

6. STAFF NUMBERS AND COSTS

The monthly average number of persons 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:

	<u>Number of employees</u>		
	<u>2021</u>	<u>2020</u>	<u>2019</u>
Operations	5,855	5,823	5,758
Administration	1,310	1,260	1,539
Research and development.....	267	253	167
	<u>7,432</u>	<u>7,336</u>	<u>7,464</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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6. STAFF NUMBERS AND COSTS (continued)

The aggregate payroll costs of these persons were as follows:

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Wages and salaries	767.4	750.3	774.4
Social security costs	110.9	101.5	101.7
Expenses related to defined contribution pension plans	17.0	16.1	23.0
Expenses related to defined benefit pension plans	58.9	55.1	44.6
	<u>954.2</u>	<u>923.0</u>	<u>943.7</u>

7. DIRECTORS' REMUNERATION

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Salaries and other short term benefits	<u>1.2</u>	<u>1.5</u>	<u>1.6</u>

8. FINANCE INCOME AND COSTS

Recognised in income statement

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Finance income			
Interest income on bank balances	1.0	2.5	11.8
Other interest receivable	49.5	57.4	66.4
Total interest income on financial assets not at fair value through profit or loss	50.5	59.9	78.2
Exchange movements	121.4	250.2	6.8
Net fair value gain on derivatives	76.1	5.8	-
Dividend income	0.2	2.4	6.0
Total finance income	<u>248.2</u>	<u>318.3</u>	<u>91.0</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (forming part of the financial statements)

8. FINANCE INCOME AND COSTS (continued)

Finance costs

Interest payable on senior notes	94.7	95.5	97.1
Interest payable on bank loans and overdrafts.....	113.8	107.3	123.5
Interest payable on securitisation	5.8	7.9	10.3
Amortisation of issue costs	11.3	7.8	7.9
Interest payable on lease liabilities.....	43.1	47.5	48.5
Other finance charges.....	24.2	6.2	7.4
Exchange movements.....	234.4	21.8	21.1
Net fair value loss on derivatives	-	-	95.4
Interest on employee benefit liabilities.....	6.5	10.4	14.0
Borrowing costs capitalised in property, plant and equipment.....	(8.8)	(8.2)	(4.1)
Total finance costs before exceptional items.....	525.0	296.2	421.1
Exceptional finance cost (see Note 4)	3.5	-	11.7
Total finance costs	528.5	296.2	432.8
Net finance costs/(income)	280.3	(22.1)	341.8

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.b.

9. TAX CHARGE

Taxation recognised in the consolidated income statement

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Current tax expense			
Current year.....	366.7	(137.3)	191.5
Adjustments in respect of prior years	13.6	(117.6)	(128.6)
Current tax expense.....	380.3	(254.9)	62.9
Deferred tax expense			
Origination and reversal of temporary differences	132.4	225.4	30.4
Effect of rate change	(15.9)	(7.9)	-
Adjustments in respect of prior years	(47.2)	12.6	123.0
Deferred tax charge/(credit) (see Note 16)	69.3	230.1	153.4
Total tax charge/(credit)	449.6	(24.8)	216.3

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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9. TAX CHARGE (continued)

Reconciliation of effective tax rate

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Profit before taxation.....	<u>2,541.9</u>	<u>551.4</u>	<u>939.6</u>
Tax on above using the Luxembourg corporation tax rate of 24.94% (2020: 24.94%, 2019: 24.94%)	633.9	137.5	234.3
Non-deductible expenses/tax exempt revenue.....	14.0	33.9	66.1
Effect of tax rates in foreign jurisdictions	(158.8)	(35.5)	(83.7)
Loss carry back	-	(55.3)	-
Deferred tax not recognised	10.0	7.5	5.2
Effect of rate change	(15.9)	(7.9)	-
Adjustments in respect of prior years	<u>(33.6)</u>	<u>(105.0)</u>	<u>(5.6)</u>
Total tax charge/(credit)	<u>449.6</u>	<u>(24.8)</u>	<u>216.3</u>

The tax credit of €24.8 million in the year ended December 31, 2020 reflects the recognition of tax refunds due in accordance with the CARES Act in the USA. This Act allows the Group to carry back available net operating losses in the US for the years ended December 31, 2020 and December 31, 2019 for a period of up to five years to obtain retrospective tax refunds at the tax rates applicable for the years the losses are utilised.

Taxation recognised in other comprehensive income/(expense)

	<u>2021</u>			<u>2020</u>			<u>2019</u>		
	<u>Gross</u>	<u>Tax</u>	<u>Net</u>	<u>Gross</u>	<u>Tax</u>	<u>Net</u>	<u>Gross</u>	<u>Tax</u>	<u>Net</u>
	€m								
Foreign exchange translation differences	(14.1)	-	(14.1)	30.8	-	30.8	(1.9)	-	(1.9)
Net gain/(loss) on hedge of net investment in foreign operations.....	542.6	(63.4)	479.2	(577.9)	50.5	(527.4)	93.4	(5.4)	88.0
Remeasurement of post employment benefit obligations.....	<u>168.0</u>	<u>(34.0)</u>	<u>134.0</u>	<u>(86.2)</u>	<u>11.8</u>	<u>(74.4)</u>	<u>(184.1)</u>	<u>51.8</u>	<u>(132.3)</u>
Total	<u>696.5</u>	<u>(97.4)</u>	<u>599.1</u>	<u>(633.3)</u>	<u>62.3</u>	<u>(571.0)</u>	<u>(92.6)</u>	<u>46.4</u>	<u>(46.2)</u>

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10. PROPERTY, PLANT AND EQUIPMENT

	Land and buildings	Plant & equipment Fixtures and fittings	Under construction	Oil & Gas	Right- of-use assets	Total
Cost			€m			
Balance at 1 January 2019.....	701.6	8,858.0	1,370.5	-	-	10,930.1
Impact of adopting IFRS 16.....	(11.1)	(56.5)	-	-	967.0	899.4
Business acquisition.....	-	30.1	4.3	2.6	-	37.0
Additions.....	5.0	256.4	1,115.5	0.1	165.5	1,542.5
Disposals.....	(1.9)	(39.3)	-	-	(3.5)	(44.7)
Transfers.....	54.6	711.0	(762.0)	3.2	-	6.8
Modifications.....	-	-	-	-	40.7	40.7
Effect of movements in foreign exchange.....	11.0	98.0	39.6	-	8.8	157.4
Balance at 31 December 2019.....	759.2	9,857.7	1,767.9	5.9	1,178.5	13,569.2
Business acquisition.....	42.1	466.1	3.4	-	-	511.6
Additions.....	235.0	796.3	269.2	10.9	107.9	1,419.3
Disposals.....	(0.6)	(128.6)	-	-	(37.2)	(166.4)
Transfers.....	97.4	422.7	(491.8)	-	-	28.3
Modifications.....	-	-	-	-	13.7	13.7
Effect of movements in foreign exchange.....	(50.1)	(510.9)	(127.6)	(1.1)	(50.6)	(740.3)
Balance at 31 December 2020.....	1,083.0	10,903.3	1,421.1	15.7	1,212.3	14,635.4
Business acquisition.....	4.8	37.1	6.2	-	-	48.1
Additions.....	9.3	28.1	732.1	22.3	143.5	935.3
Disposals.....	(2.1)	(252.2)	-	-	(97.5)	(351.8)
Transfers.....	71.0	638.5	(700.7)	-	-	8.8
Modifications.....	-	-	-	-	68.6	68.6
Effect of movements in foreign exchange.....	64.0	530.6	55.4	1.7	45.7	697.4
Balance at 31 December 2021.....	1,230.0	11,885.4	1,514.1	39.7	1,372.6	16,041.8
Accumulated depreciation and impairment						
Balance at 1 January 2019.....	278.2	5,605.6	-	-	-	5,883.8
Impact of adopting IFRS 16.....	(7.5)	(56.5)	-	-	64.0	-
Depreciation charge for the year.....	23.2	471.0	-	-	154.3	648.5
Impairment charge for the year.....	0.7	32.6	-	-	-	33.3
Disposals.....	(1.9)	(38.9)	-	-	(3.5)	(44.3)
Effect of movements in foreign exchange.....	3.5	79.3	-	-	0.3	83.1
Balance at 31 December 2019.....	296.2	6,093.1	-	-	215.1	6,604.4
Depreciation charge for the year.....	30.5	524.1	-	0.8	161.4	716.8
Exceptional impairment charge for the year.....	-	118.5	-	-	-	118.5
Impairment charge for the year.....	1.8	22.9	-	-	1.5	26.2
Disposals.....	(0.6)	(127.6)	-	-	(28.6)	(156.8)
Transfers.....	-	20.1	-	-	-	20.1
Effect of movements in foreign exchange.....	(14.4)	(303.0)	-	(0.1)	(12.5)	(330.0)
Balance at 31 December 2020.....	313.5	6,348.1	-	0.7	336.9	6,999.2
Depreciation charge for the year.....	38.5	560.2	-	1.8	155.9	756.4
Disposals.....	(2.1)	(251.6)	-	-	(54.2)	(307.9)
Effect of movements in foreign exchange.....	14.8	290.5	-	0.2	14.4	319.9
Balance at 31 December 2021.....	364.7	6,947.2	-	2.7	453.0	7,767.6

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10. PROPERTY, PLANT AND EQUIPMENT (continued)

	Land and buildings	Plant & equipment Fixtures and fittings	Under construction	Oil & Gas	Right- of-use assets	Total
Net book value			€m			
At 31 December 2019	463.0	3,764.6	1,767.9	5.9	963.4	6,964.8
At 31 December 2020	769.5	4,555.2	1,421.1	15.0	875.4	7,636.2
At 31 December 2021	865.3	4,938.2	1,514.1	37.0	919.6	8,274.2

Included in 2020 is an exceptional impairment charge of €118.5 million of plant and equipment following the Group's decision to terminate work on a propane dehydrogenation unit and associated infrastructure at its site in Antwerp, Belgium (see Note 4).

During the year ended December 31, 2020 a further impairment charge of €26.2 million (2019: €33.3 million) was made in respect of tangible fixed assets at the Nitriles facility at Seal Sands, United Kingdom following a decision to close the site in December 2019 due to poor operating performance and uneconomic capital expenditure requirements to meet safety and environmental obligations (see Note 4).

Leased plant and machinery

The Group leases many assets including land and buildings, vessels, storage and transportation infrastructure, machinery and IT equipment which are classified as right-of-use assets.

More information regarding the right-of-use are presented below.

Right-of-use (ROU) assets

	Land and buildings	Plant & equipment Fixtures and fittings	ROU Total
Cost			
Balance at 1 January 2019.....	-	-	-
Impact of adopting IFRS 16	128.7	838.3	967.0
Additions	40.0	125.5	165.5
Disposals	(0.8)	(2.7)	(3.5)
Modifications	-	40.7	40.7
Effect of movements in foreign exchange	1.3	7.5	8.8
Balance at 31 December 2019	169.2	1,009.3	1,178.5
Additions	2.2	105.7	107.9
Disposals	-	(37.2)	(37.2)
Modifications	5.0	8.7	13.7
Effect of movements in foreign exchange	(4.9)	(45.7)	(50.6)
Balance at 31 December 2020	171.5	1,040.8	1,212.3
Additions	0.9	142.6	143.5
Disposals	-	(97.5)	(97.5)
Modifications	1.9	66.7	68.6
Effect of movements in foreign exchange	4.9	40.8	45.7
Balance at 31 December 2021	179.2	1,193.4	1,372.6

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10. PROPERTY, PLANT AND EQUIPMENT (continued)

	<u>Land and buildings</u>	<u>Plant & equipment Fixtures and fittings</u>	<u>ROU Total</u>
Accumulated depreciation and impairment			
Balance at 1 January 2019.....	-	-	-
Impact of adopting IFRS 16.....	7.5	56.5	64.0
Depreciation charge for the year.....	8.5	145.8	154.3
Disposals.....	(0.8)	(2.7)	(3.5)
Effect of movements in foreign exchange.....	0.1	0.2	0.3
Balance at 31 December 2019.....	15.3	199.8	215.1
Reclassification.....	0.8	(0.8)	-
Depreciation charge for the year.....	9.4	152.0	161.4
Impairment charge for the year.....	-	1.5	1.5
Disposals.....	-	(28.6)	(28.6)
Effect of movements in foreign exchange.....	(1.0)	(11.5)	(12.5)
Balance at 31 December 2020.....	24.5	312.4	336.9
Reclassification.....	0.8	(0.8)	-
Depreciation charge for the year.....	9.2	146.7	155.9
Disposals.....	-	(54.2)	(54.2)
Effect of movements in foreign exchange.....	1.3	13.1	14.4
Balance at 31 December 2021.....	35.8	417.2	453.0
Net book value			
At 31 December 2019.....	153.9	809.5	963.4
At 31 December 2020.....	147.0	728.4	875.4
At 31 December 2021.....	143.4	776.2	919.6

See Note 26 for the lease obligations on right-of-use assets.

Property, plant and equipment under construction

During 2021, expenditure at the Chocolate Bayou site in the USA on a major cracker turnaround and debottleneck project, an office building and expenditure associated with Linear Alpha Olefins (LAO) platform was transferred to other classes of property, plant and equipment. In addition expenditure at the Koln site in Germany on a new jetty, a major cracker turnaround and on a life cycle cracker project were also transferred to other classes of property, plant and equipment during the year ended December 31, 2021.

Additions to assets under construction during 2021 included expenditure within the O&P North America segment on site integration at the Chocolate Bayou, USA site in respect of the new Poly Alpha Olefins (PAO) platform being constructed at the site within the Oligomers business together with expenditure on a new barge dock at the site. The O&P Europe segment had further expenditure at the Koln, Germany site on the cogeneration project and the life cycle cracker project along with expenditure on turnarounds. In addition, there was further expenditure on a new ethane cracker at the Antwerp, Belgium site. The main additions to assets under construction in the Chemical Intermediates segment was further growth expenditure by the Phenol business on the new cumene unit project at Marl, Germany and expenditure on a new phenol terminal at Pasadena, USA. There was also further expenditure by the Oligomers business on the PAO platform at the Chocolate Bayou, USA site.

During 2020, expenditure at the Chocolate Bayou site in the USA on a cracker debottleneck, furnace replacement and expenditure on a cogeneration project was transferred to other classes of property, plant and equipment. Assets under construction relating to a new propane dehydrogenation unit and associated

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10. PROPERTY, PLANT AND EQUIPMENT (continued)

infrastructure at its site in Antwerp, Belgium were also transferred to other classes of property, plant and equipment and fully impaired and disposed of following the Group's decision to terminate work on the project.

Additions to assets under construction during 2020 included further expenditure within the O&P North America segment on a furnace replacement project, a cracker debottleneck and major scheduled turnaround on one of the crackers at Chocolate Bayou, USA, together with expenditure on office building at the site. The O&P Europe segment had further expenditure at the Koln, Germany site on the cogeneration project and further expenditure on the new jetty, together with a major scheduled turnaround on one of the crackers at the site. In addition, there was expenditure on a planned propane dehydrogenation unit and new ethane cracker at the Antwerp, Belgium site. The main additions to assets under construction in the Chemical Intermediates segment was further expenditure by the Oligomers business on the LAO and PAO projects as well as on a barge dock at Chocolate Bayou, USA site. The Phenol business also had expenditure on a new cumene unit at the Marl, Germany site.

During 2019, expenditure at the Chocolate Bayou site in the USA on the LAO project as well as expenditure on a cogeneration project and barge dock was transferred to other classes of property, plant and equipment.

Additions to assets under construction during 2019 included further expenditure at the Chocolate Bayou site in the USA on a furnace replacement project, a cogeneration project, a PAO project, a barge dock and a debottleneck of one of the crackers. There was also further expenditure at the Köln, Germany site on a cogeneration project.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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11. INTANGIBLE ASSETS

	Intellectual property rights	Customer relationships	Other	Goodwill	Total
Cost					€m
Balance at 1 January 2019.....	93.1	59.9	58.9	684.0	895.9
Additions.....	-	-	37.3	-	37.3
Disposals.....	-	(4.5)	(14.0)	-	(18.5)
Business acquisition (see Note 3).....	-	-	24.4	-	24.4
Effect of movements in foreign exchange.....	0.2	1.2	7.9	6.0	15.3
Balance at 31 December 2019.....	93.3	56.6	114.5	690.0	954.4
Reclassifications.....	-	-	5.9	-	5.9
Additions.....	-	-	53.6	-	53.6
Disposals.....	-	-	(59.1)	-	(59.1)
Business acquisition (see Note 3).....	21.2	-	6.6	138.8	166.6
Effect of movements in foreign exchange.....	(1.6)	(4.8)	(3.9)	(30.6)	(40.9)
Balance at 31 December 2020.....	112.9	51.8	117.6	798.2	1,080.5
Reclassifications.....	-	-	1.1	-	1.1
Additions.....	-	-	28.9	-	28.9
Disposals.....	(69.2)	(0.5)	(52.2)	-	(121.9)
Business acquisition (see Note 3).....	-	-	-	(4.6)	(4.6)
Effect of movements in foreign exchange.....	2.7	4.5	4.2	34.8	46.2
Balance at 31 December 2021.....	46.4	55.8	99.6	828.4	1,030.2
Accumulated amortisation and impairment					
Balance at 1 January 2019.....	92.8	37.6	12.6	8.1	151.1
Amortisation for the year.....	0.1	2.3	1.0	-	3.4
Effect of movements in foreign exchange.....	0.2	0.7	-	-	0.9
Balance at 31 December 2019.....	93.1	40.6	13.6	8.1	155.4
Amortisation for the year.....	0.1	2.3	0.6	-	3.0
Impairment charge for the year.....	-	-	1.7	-	1.7
Disposals.....	-	-	(1.7)	-	(1.7)
Effect of movements in foreign exchange.....	(1.1)	(3.7)	(0.3)	-	(5.1)
Balance at 31 December 2020.....	92.1	39.2	13.9	8.1	153.3
Amortisation for the year.....	0.9	2.6	0.8	-	4.3
Disposals.....	(69.2)	(0.5)	(0.6)	-	(70.3)
Effect of movements in foreign exchange.....	1.0	3.4	0.2	-	4.6
Balance at 31 December 2021.....	24.8	44.7	14.3	8.1	91.9
Net book value					
At 31 December 2019.....	0.2	16.0	100.9	681.9	799.0
At 31 December 2020.....	20.8	12.6	103.7	790.1	927.2
At 31 December 2021.....	21.6	11.1	85.3	820.3	938.3

Other intangible assets include shale oil and gas licences, non-compete agreements, licence fees and environmental certificates.

Amortisation charge

The amortisation charge is recognised in administrative expenses in the consolidated income statement.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (forming part of the financial statements)

11. INTANGIBLE ASSETS (continued)

Impairment

Goodwill has been allocated to cash generating units (CGU) or groups of cash generating units as follows:

	<u>2021</u>	<u>2020</u>	<u>2019</u>
		€m	
O&P Europe.....	246.2	246.2	246.2
O&P North America	493.6	463.4	355.2
Chemical Intermediates.....	80.5	80.5	80.5
Total	<u>820.3</u>	<u>790.1</u>	<u>681.9</u>

The recoverable amount is based on the value in use of each CGU based on the latest board approved five year plan. The forecasts are based on current performance and management's assumptions regarding the future development of individual parameters including raw material prices and profit margins, utilising available market pricing forecasts. Future assumptions regarding market demand are based on external macroeconomic sources and specific data relevant to the petrochemical industry and management's knowledge of the local markets in which it operates.

The cash flows after the plan period are based on an average of each of the years in the five year plan to take account of the cyclical nature of the industry extrapolated using long term growth rates as set out in the table below.

No impairment charge has been recorded in these financial statements as a result of the annual impairment test.

The key assumptions underlying the value in use calculation for all CGUs are shown below:

	<u>2021</u>	<u>2020</u>	<u>2019</u>
Period on which management approved forecasts are based.....	5 years	5 years	5 years
Discount rate	8.5%	8.5%	8.5%
Growth rate	<u>3.0%</u>	<u>3.0%</u>	<u>3.0%</u>

A terminal value is calculated based on the average cash flows over the five year forecasting period assuming compound growth of 3% and is discounted over the expected lives of the assets of 40 years.

When determining the discount rate the pre-tax weighted average cost of capital of the Group is considered at each respective period end.

The growth rate used includes inflationary growth across our various markets.

The estimated recoverable amount exceeded the carrying amount for all cash generating units.

Sensitivity analysis on the recoverable amount was performed based on a 10% increase in the discount rate and a 10% decrease to the growth rate and a CGU earnings before interest, tax, depreciation and amortisation and exceptional items, measured under IFRS, 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.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)

12. INVESTMENTS

12a Investments In Equity–Accounted Investees

	Joint ventures
	€m
At 1 January 2019	302.0
Share of profits retained	67.0
Exchange adjustments	2.4
At 31 December 2019	371.4
Additions	1.6
Reductions	(0.7)
Business disposals (see Note 3)	(109.0)
Share of losses retained	(210.0)
Exchange adjustments	33.1
At 31 December 2020	86.4
Additions	3.3
Share of losses retained	(42.5)
At 31 December 2021	47.2

Joint ventures

On July 1, 2011 the group restructured the Refining business into a new joint venture between PetroChina and INEOS Investments (Jersey) Limited ('II(J)L'), a related party. II(J)L is held under common control by our controlling shareholders. The consideration received by the Group for the disposal consisted of cash consideration of \$1.015 billion received from PetroChina for a 50% interest in the business and an investment in non-voting ordinary shares in II(J)L for the other 50% interest in the business.

The Group retains an economic interest in the Refining business by virtue of its investment in II(J)L. The results of the Refining business are reported within the share of profit/(loss) of associates and joint ventures using the equity accounting method by virtue of the Group's effective control of II(J)L. The Group has no ongoing obligations to fund the Refining business.

In July 2014 the Group set up a new joint venture entity (Gemini HDPE LLC) with Sasol to build and operate an HDPE plant at the Battleground site in Texas, USA. The Gemini plant became fully operational in the fourth quarter of 2017. During 2018 €12.9 million was invested into the joint venture. On December 31, 2020 the Group acquired the remaining 50% interest in the joint venture to become the 100% owner of the plant which resulted in the disposal of the Group's previous 50% equity accounted interest of €109.0 million and a gain on disposal of €78.3 million (see Note 3).

In October 2020 the Group invested €1.6 million into a joint venture set up with a Chinese partner to jointly develop Acrylonitrile technology for use within the Chinese market, and to protect against mis-use of technology where appropriate. During 2021 the Group invested a further €3.3 million into the joint venture.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (forming part of the financial statements)

12. INVESTMENTS (continued)

Details of investments in joint ventures are set out below:

<u>Company</u>	<u>Class of shares held</u>	<u>Place of business and country of incorporation</u>	<u>Percentage held</u>	<u>Principal activities</u>
Petroineos Refining Limited	Ordinary	Lavéra, France Grangemouth, Scotland	50.1%	Refining
Petroineos Trading Limited	Ordinary	Lavéra, France Grangemouth, Scotland	49.9%	Refining
INEOS Infrastructure (Grangemouth) Limited	Ordinary	Grangemouth, Scotland	75%	Refining
Gemini HDPE LLC	Ordinary	Texas, USA	-*	Chemicals

Summary aggregated financial information for material equity accounted joint ventures are as follows:

Gemini HDPE joint venture	<u>2020*</u>	<u>2019</u>
Current assets	-	15.4
Long-term assets	-	561.9
Current liabilities.....	-	(32.4)
Long-term liabilities.....	-	(307.5)
Cash (outflow)/inflow	(1.4)	0.9
Revenue.....	56.7	58.5
Expenses	<u>(94.1)</u>	<u>(101.7)</u>

* On December 31, 2020 the Group acquired the remaining 50% interest in the Gemini HDPE LLC joint venture and it became a wholly owned subsidiary.

Summary aggregated financial information for immaterial equity accounted joint ventures are as follows:

Refining joint ventures	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Revenue.....	27,417.3	17,102.8	27,867.0
Expenses	<u>(27,494.6)</u>	<u>(17,409.5)</u>	<u>(27,722.9)</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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12. INVESTMENTS (continued)

12.b Investments in Subsidiary Undertakings

The directors consider that to give full particulars of all subsidiary undertakings would lead to a statement of excessive length.

The directors believe the carrying value of the investments is supported by the underlying net assets of the subsidiaries.

The following information relates to the principal subsidiary undertakings of the Company.

Company	Country of incorporation and operation	Percentage holding	Principal activity
INEOS Luxembourg I S.A.*	Luxembourg	100%	Holding Company
INEOS Luxembourg II S.A.....	Luxembourg	100%	Holding Company
INEOS Group AG	Switzerland	100%	Holding Company
INEOS Holdings Limited.....	England and Wales	100%	Holding Company
INEOS European Holdings Limited.....	England and Wales	100%	Holding Company
INEOS Gemini HDPE Holdings Company LLC	USA	100%	Holding Company
INEOS US Finance LLC.....	USA	100%	Finance
INEOS Finance Plc	England and Wales	100%	Finance
INEOS Treasury (UK) Limited.....	England and Wales	100%	Finance
INEOS Europe AG.....	Switzerland	100%	Chemicals
INEOS Oxide Limited.....	England and Wales	100%	Chemicals
INEOS NV	Belgium	100%	Chemicals
INEOS Belgium NV	Belgium	100%	Chemicals
INEOS Phenol Belgium NV.....	Belgium	100%	Chemicals
INEOS Italia Srl	Italy	100%	Chemicals
INEOS Phenol GmbH.....	Germany	100%	Chemicals
INEOS Americas LLC	USA	100%	Chemicals
INEOS Manufacturing Deutschland GmbH.....	Germany	100%	Chemicals
INEOS Köln GmbH	Germany	100%	Chemicals
INEOS France SAS.....	France	100%	Chemicals
INEOS Sales (UK) Limited.....	England and Wales	100%	Chemicals
INEOS Manufacturing Belgium NV	Belgium	100%	Chemicals
INEOS Olefins Belgium NV.....	Belgium	100%	Chemicals
INEOS Feluy SPRL	Belgium	100%	Chemicals
INEOS Sales Belgium NV	Belgium	100%	Chemicals
INEOS Sales Italia s.r.l.	Italy	100%	Chemicals
INEOS Singapore Pte Limited	Singapore	100%	Chemicals
INEOS USA LLC	USA	100%	Chemicals
INEOS Canada Company.....	Canada	100%	Chemicals
INEOS Canada Partnership.....	Canada	100%	Chemicals
INEOS Bamble AS	Norway	100%	Chemicals
INEOS Nitriles (UK) Limited	England and Wales	100%	Chemicals
INEOS Manufacturing (Hull) Limited	England and Wales	100%	Chemicals
INEOS Technologies (Vinyls) Limited.....	England and Wales	100%	Chemicals
INEOS Technologies France SAS.....	France	100%	Chemicals
INEOS US Sales Company	USA	100%	Chemicals
INEOS Nitriles USA LLC.....	USA	100%	Chemicals
INEOS Oligomers USA LLC.....	USA	100%	Chemicals
INEOS Technologies USA LLC	USA	100%	Chemicals
INEOS Technologies Italia S.r.l.....	Italy	100%	Chemicals
INEOS Rafnes AS	Norway	100%	Chemicals
Gemini HDPE LLC.....	USA	100%	Chemicals
WLP Holding Corporation	USA	100%	Manufacturer

* Held directly by the Company.

Branches of the Group outside of Luxembourg

Branches have been established in Austria, France, Slovakia, Spain and the United Kingdom.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (forming part of the financial statements)

13. FINANCIAL ASSETS AT FAIR VALUE THROUGH PROFIT OR LOSS

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
At 1 January	-	-	251.2
Interest receivable	-	-	2.2
Exchange adjustments	-	-	4.5
Disposals	-	-	(257.9)
At 31 December	-	-	-

Before being disposed the Group held a non-voting preferred partnership interest in INEOS Investments Partnership, an entity held under common control by the Group's ultimate shareholders, which owned 24% of the share capital of the PQ Corporation, a silicas business incorporated in the USA and listed on the New York stock exchange.

In 2019 the Group disposed of its preferential interest in INEOS Investments Partnership following the sale by INEOS Investments Partnership of its assets (shares in PQ Corporation) to INEOS Limited, a related party, for €260.5 million (\$296.5 million) which resulted in a profit on disposal of €2.6 million.

14. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Non-current			
Financial assets at fair value through comprehensive income (see below and Note 25.a)	28.3	28.3	28.3

Financial assets at fair value through other comprehensive income

Financial assets at fair value through other comprehensive income include a 25.0% (2020: 20.0%, 2019: 20.0%) investment in Aethylen Rohrleitungs Gesellschaft ('ARG') mbH and Co. KG, a company registered in Germany whose principal activity is the transportation of ethylene via pipelines in Northern Europe and other investments.

These investments comprise of shares in private limited companies. The carrying value of these financial assets at fair value through other comprehensive income was €28.3 million at December 31, 2021 (2020: €28.3 million, 2019: €28.3 million). A disposal of these investments is not currently anticipated.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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15. DERIVATIVE FINANCIAL INSTRUMENTS

	2021	2020	2019
	€m		
Non-current asset			
Interest rate swap contracts classified as fair value through profit or loss (see Note 25.a)	26.2	-	-
	2021	2020	2019
	€m		
Current asset			
Derivative commodity contracts classified as fair value through profit or loss (see Note 25.a)	256.0	154.5	15.3
	2021	2020	2019
	€m		
Non-current liabilities			
Interest rate swap contracts classified as fair value through profit or loss (see Note 25.a)	-	4.2	-
	2021	2020	2019
	€m		
Current liabilities			
Derivative commodity contracts classified as fair value through profit or loss (see Note 25.a)	236.0	96.9	59.5

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (forming part of the financial statements)

16. DEFERRED TAX ASSETS AND LIABILITIES

Recognised deferred tax assets and liabilities

Deferred tax assets and liabilities are attributable to the following:

	2021		
	Assets	Liabilities	Total
	€m		
Property, plant and equipment.....	-	873.2	873.2
Employee benefits.....	(174.2)	-	(174.2)
Tax value of loss carry-forwards.....	(77.9)	-	(77.9)
Other.....	(73.2)	-	(73.2)
Tax (assets)/liabilities.....	(325.3)	873.2	547.9
Set off of tax.....	170.9	(170.9)	-
Net tax (assets)/liabilities	(154.4)	702.3	547.9

	2020		
	Assets	Liabilities	Total
	€m		
Property, plant and equipment.....	-	813.9	813.9
Employee benefits.....	(197.8)	-	(197.8)
Tax value of loss carry-forwards.....	(71.6)	-	(71.6)
Other.....	(150.1)	-	(150.1)
Tax (assets)/liabilities.....	(419.5)	813.9	394.4
Set off of tax.....	236.3	(236.3)	-
Net tax (assets)/liabilities	(183.2)	577.6	394.4

	2019		
	Assets	Liabilities	Total
	€m		
Property, plant and equipment.....	-	512.4	512.4
Employee benefits.....	(191.2)	-	(191.2)
Tax value of loss carry-forwards.....	(70.5)	-	(70.5)
Other.....	(72.7)	-	(72.7)
Tax (assets)/liabilities.....	(334.4)	512.4	178.0
Set off of tax.....	221.2	(221.2)	-
Net tax (assets)/liabilities	(113.2)	291.2	178.0

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (forming part of the financial statements)

16. DEFERRED TAX ASSETS AND LIABILITIES (continued)

Movement in deferred tax

	Property, plant and equipment	Employee benefits	Tax value of loss carry- forward utilised	Other	Total
			€m		
At 1 January 2019	249.6	(135.0)	(51.1)	12.9	76.4
Recognised in profit or loss.....	262.8	(4.4)	(19.4)	(85.6)	153.4
Recognised in other comprehensive income.....	-	(51.8)	-	-	(51.8)
At 31 December 2019	512.4	(191.2)	(70.5)	(72.7)	178.0
Recognised in profit or loss.....	303.4	5.2	(1.1)	(77.4)	230.1
Recognised in other comprehensive income.....	-	(11.8)	-	-	(11.8)
Business acquisitions (see Note 3)	2.1	-	-	-	2.1
Exchange adjustments.....	(4.0)	-	-	-	(4.0)
At 31 December 2020	813.9	(197.8)	(71.6)	(150.1)	394.4
Recognised in profit or loss.....	0.7	(11.5)	(6.3)	86.4	69.3
Recognised in other comprehensive income.....	-	34.0	-	-	34.0
Business acquisitions (see Note 3)	2.8	-	-	-	2.8
Exchange adjustments.....	55.8	1.1	-	(9.5)	47.4
At 31 December 2021	873.2	(174.2)	(77.9)	(73.2)	547.9

Deferred tax assets are recognised to the extent that the realisation of the related tax benefit through future taxable profits is probable based on an assessment of expected future profits modelled against the gross unused tax losses, deductible temporary differences and unused tax credits. The Group did not recognise gross deductible temporary and tax losses of €606.6 million (2020: €123.8 million, 2019: €95.9 million) due to uncertainty in respect of the existence of future probable taxable profits against which these tax attributes can be utilised. As at 31 December 2021 there are also net unrecognised unprovided foreign tax credits of €37.9 million (2020: €32.7 million).

The Group has not provided deferred tax in relation to temporary differences on its overseas subsidiaries or joint ventures as the Group can control the timing and realisation of these temporary differences, and it is probable that no material unprovided tax liability would arise.

17. INVENTORIES

	2021	2020	2019
		€m	
Raw materials and consumables.....	615.9	392.7	430.4
Work in progress.....	31.7	17.8	19.5
Finished goods	1,119.6	649.2	777.1
	1,767.2	1,059.7	1,227.0

Raw materials, consumables and changes in finished goods and work in progress recognised as cost of sales in the year amounted to €10,720.6 million (2020: €5,554.3 million, 2019: €7,175.0 million). The net write-down of inventories to net realisable value amounted to €7.5 million (2020: €2.3 million, 2019: €0.5 million) after the reversal of previous write downs of €nil (2020: €nil, 2019: €0.2 million).

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18. TRADE AND OTHER RECEIVABLES

	<u>2021</u>	<u>2020</u>	<u>2019</u>
		€m	
Current			
Trade receivables	1,665.4	955.1	1,008.6
Amounts due from related parties (see Note 29)	536.1	264.2	300.8
Other receivables.....	186.1	100.6	150.7
Prepayments	82.6	74.1	84.8
	<u>2,470.2</u>	<u>1,394.0</u>	<u>1,544.9</u>
Non-current			
Amounts due from related parties (see Note 29)	810.8	641.3	727.8
Other receivables.....	2.0	1.9	2.1
Prepayments	13.2	13.0	12.5
	<u>826.0</u>	<u>656.2</u>	<u>742.4</u>

Credit quality of financial assets and impairment losses

The ageing of trade and other receivables at the end of the reporting period and the expected credit loss rate (ECLR) was:

	<u>Trade receivables</u>			<u>Amounts due from related parties</u>			<u>Other receivables</u>		
	<u>Gross</u>	<u>Impairment</u>	<u>ECLR</u>	<u>Gross</u>	<u>Impairment</u>	<u>ECLR</u>	<u>Gross</u>	<u>Impairment</u>	<u>ECLR</u>
	<u>2021</u>	<u>2021</u>	<u>2021</u>	<u>2021</u>	<u>2021</u>	<u>2021</u>	<u>2021</u>	<u>2021</u>	<u>2021</u>
	€m	€m	%	€m	€m	%	€m	€m	%
Not past due.....	1,614.6	(1.2)	0.1	1,346.9	-	0.0	186.8	-	0.0
Past due 0-30 days	49.9	(0.2)	0.4	-	-	-	0.8	-	0.0
Past due 31-90 days	-	-	-	-	-	-	-	-	-
More than 90 days	10.4	(8.1)	77.9	-	-	-	0.5	-	0.0
	<u>1,674.9</u>	<u>(9.5)</u>	<u>0.6</u>	<u>1,346.9</u>	<u>-</u>	<u>0.0</u>	<u>188.1</u>	<u>-</u>	<u>0.0</u>

	<u>Trade receivables</u>			<u>Amounts due from related parties</u>			<u>Other receivables</u>		
	<u>Gross</u>	<u>Impairment</u>	<u>ECLR</u>	<u>Gross</u>	<u>Impairment</u>	<u>ECLR</u>	<u>Gross</u>	<u>Impairment</u>	<u>ECLR</u>
	<u>2020</u>	<u>2020</u>	<u>2020</u>	<u>2020</u>	<u>2020</u>	<u>2020</u>	<u>2020</u>	<u>2020</u>	<u>2020</u>
	€m	€m	%	€m	€m	%	€m	€m	%
Not past due.....	799.8	(1.1)	0.1	905.5	-	0.0	101.6	-	0.0
Past due 0-30 days	116.8	(0.2)	0.2	-	-	-	0.1	-	0.0
Past due 31-90 days	34.3	(0.4)	1.2	-	-	-	0.3	-	0.0
More than 90 days	15.1	(9.2)	60.9	-	-	-	0.5	-	0.0
	<u>966.0</u>	<u>(10.9)</u>	<u>1.1</u>	<u>905.5</u>	<u>-</u>	<u>0.0</u>	<u>102.5</u>	<u>-</u>	<u>0.0</u>

	<u>Trade receivables</u>			<u>Amounts due from related parties</u>			<u>Other receivables</u>		
	<u>Gross</u>	<u>Impairment</u>	<u>ECLR</u>	<u>Gross</u>	<u>Impairment</u>	<u>ECLR</u>	<u>Gross</u>	<u>Impairment</u>	<u>ECLR</u>
	<u>2019</u>	<u>2019</u>	<u>2019</u>	<u>2019</u>	<u>2019</u>	<u>2019</u>	<u>2019</u>	<u>2019</u>	<u>2019</u>
	€m	€m	%	€m	€m	%	€m	€m	%
Not past due.....	868.0	-	0.0	1,028.6	-	0.0	151.2	-	0.0
Past due 0-30 days	126.2	(1.4)	1.1	-	-	-	0.6	-	0.0
Past due 31-90 days	17.2	(2.5)	14.5	-	-	-	-	-	-
More than 90 days	10.7	(9.6)	89.7	-	-	-	1.0	-	0.0
	<u>1,022.1</u>	<u>(13.5)</u>	<u>1.3</u>	<u>1,028.6</u>	<u>-</u>	<u>0.0</u>	<u>152.8</u>	<u>-</u>	<u>0.0</u>

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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18. TRADE AND OTHER RECEIVABLES (continued)

The accounts 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 our customers and external credit checks where appropriate for new customers (see Note 25.c). At December 31, 2019, 2020 and 2021 there were no significant trade, related party or other receivable balances not past due that were subsequently impaired.

Due to the global activities and diversified customer structure of the Group, there is no significant concentration of credit risk (2020: nil, 2019: nil).

During 2019, 2020 and 2021 there were no significant trade, related party or other receivable balances that were subject to renegotiation of terms. Credit enhancements are held in respect of trade and other receivables in the form of €16.1 million (2020: €nil, 2019: €nil) of assets pledged as security against amounts owed to the Group of which €nil (2020: €nil, 2019: €nil) is in respect of amounts falling overdue.

Trade receivable balances totalling €1,300.2 million (2020: €776.4 million, 2019: €770.0 million) have been pledged as security against amounts drawn down under the Receivables Securitisation Facility, described in Note 19, totalling €18.0 million (2020: €114.2 million, 2019: €297.1 million). 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 during the year was as follows:

	<u>2021</u>	<u>2020</u>	<u>2019</u>
		€m	
Balance at 1 January.....	10.9	13.5	16.9
Additions/(released).....	0.3	1.0	(3.4)
Utilised.....	(2.2)	(2.6)	-
Exchange.....	0.5	(1.0)	-
Balance at 31 December.....	<u>9.5</u>	<u>10.9</u>	<u>13.5</u>

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.

Credit risk of trade receivables

	<u>2021</u>
	€m
Low.....	1,570.7
Medium.....	99.8
High.....	4.4
Impairment allowance.....	(9.5)
	<u>1,665.4</u>

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.

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18. TRADE AND OTHER RECEIVABLES (continued)

- 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 (2020: €nil, 2019: €nil).

There were no allowances made against amounts due from related parties during the year (2020: €nil, 2019: €nil).

19. 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.f.

	<u>2021</u>	<u>2020</u>	<u>2019</u>
Non-current liabilities		€m	
Senior Secured Term Loans	4,789.6	3,633.1	3,428.6
Senior Secured Notes due May 2026	764.6	763.3	762.1
Senior Secured Notes due March 2026	321.3	320.7	-
Senior Secured Notes due 2025.....	547.1	546.4	545.6
Senior Notes due 2024	-	1,051.9	1,090.4
Gemini Facility	483.2	463.2	-
Receivables Securitisation Facility.....	17.8	113.4	295.9
Koln CoGen Facility	100.5	72.0	96.0
Rafnes Facility	141.5	212.3	246.5
Schuldschein Facility	139.9	139.4	138.9
Other loans	26.0	27.5	0.8
	<u>7,331.5</u>	<u>7,343.2</u>	<u>6,604.8</u>
		€m	
Current liabilities			
Current portion of borrowings under Senior Secured Term Loans.....	40.0	34.6	33.3
Gemini Facility	19.9	14.7	-
Rafnes Facility	70.7	35.0	-
Koln CoGen Facility	31.5	24.0	24.0
Inventory Financing Facility	243.1	128.8	190.4
Other loans	2.6	1.5	0.3
	<u>407.8</u>	<u>238.6</u>	<u>248.0</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

	<u>Gross loans and borrowings</u>	<u>Issue costs</u>	<u>Net loans and borrowings</u>
	2021	2021	2021
Gross debt and issue costs		€m	
Senior Secured Term Loans	4,851.1	(21.5)	4,829.6
Senior Secured Notes due May 2026	770.0	(5.4)	764.6
Senior Secured Notes due March 2026	325.0	(3.7)	321.3
Senior Secured Notes due 2025	550.0	(2.9)	547.1
Receivables Securitisation Facility	18.0	(0.2)	17.8
Koln CoGen Facility	132.0	-	132.0
Rafnes Facility	214.3	(2.1)	212.2
Schuldschein Facility	141.0	(1.1)	139.9
Inventory Financing Facility	243.1	-	243.1
Other loans	28.6	-	28.6
	7,273.1	(36.9)	7,236.2
Gemini Facility	512.1	(9.0)	503.1
Total	7,785.2	(45.9)	7,739.3

The Gemini Facility is an obligation of Gemini HDPE LLC. Gemini HDPE LLC is designated as an unrestricted subsidiary in accordance with the Group's Senior Secured Term Loans, Schuldschein Facility and Senior Secured Notes and the Gemini Facility does not benefit from the security or collateral of those facilities.

	<u>Gross loans and borrowings</u>	<u>Issue costs</u>	<u>Net loans and borrowings</u>
	2020	2020	2020
Gross debt and issue costs		€m	
Senior Secured Term Loans	3,682.3	(14.6)	3,667.7
Senior Secured Notes due May 2026	770.0	(6.7)	763.3
Senior Secured Notes due March 2026	325.0	(4.3)	320.7
Senior Secured Notes due 2025	550.0	(3.6)	546.4
Senior Notes due 2024	1,056.5	(4.6)	1,051.9
Receivables Securitisation Facility	114.2	(0.8)	113.4
Koln CoGen Facility	96.0	-	96.0
Rafnes Facility	250.0	(2.7)	247.3
Schuldschein Facility	141.0	(1.6)	139.4
Inventory Financing Facility	128.8	-	128.8
Other loans	29.0	-	29.0
	7,142.8	(38.9)	7,103.9
Gemini Facility	487.8	(9.9)	477.9
Total	7,630.6	(48.8)	7,581.8

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19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

	<u>Gross loans and borrowings</u>	<u>Issue costs</u>	<u>Net loans and borrowings</u>
	2019	2019	2019
Gross debt and issue costs			
		€m	
Senior Secured Term Loans	3,470.9	(9.0)	3,461.9
Senior Secured Notes due May 2026	770.0	(7.9)	762.1
Senior Secured Notes due 2025	550.0	(4.4)	545.6
Senior Notes due 2024	1,096.3	(5.9)	1,090.4
Receivables Securitisation Facility	297.1	(1.2)	295.9
Koln CoGen Facility	120.0	-	120.0
Rafnes Facility	250.0	(3.5)	246.5
Schuldschein Facility	141.0	(2.1)	138.9
Inventory Financing Facility	190.9	(0.5)	190.4
Other loans	1.1	-	1.1
Total	6,887.3	(34.5)	6,852.8

Terms and debt repayment schedule	<u>Currency</u>	<u>Nominal interest rate</u>	<u>Year of maturity</u>
		USD LIBOR/ EURIBOR plus	
Senior Secured Term Loans	\$/€	2.00%-2.75%	2024-2028
Senior Secured Notes	€	2.125%-3.375%	2025-2026
Gemini Facility	\$	USD LIBOR plus 3.00%	2027
Schuldschein Facility	€	EURIBOR plus 2.00%	2024
Receivables Securitisation Facility	\$/€/£	Variable	2024
Koln CoGen Facility	€	2.00%-2.85%	2024-2026
Rafnes Facility	€	EURIBOR plus 2.10%	2024
Other loans	€/£	2.00%-3.50%	2023-2027

Senior Secured Term Loans

The Group has outstanding borrowings under a senior credit facilities agreement dated April 27, 2012 (as amended and restated) which consist of euro and US dollar denominated Term Loans (referred to as the 'Senior Secured Term Loans' or 'Term Loans').

In November 2021 the Group raised €1.1 billion of additional Senior Secured Term Loans which were used to fully redeem the outstanding Senior Notes due 2024. The additional Senior Secured Term Loans mature on November 8, 2028 and consisted of \$845 million of US dollar denominated Term Loans and €350 million of euro denominated Term Loans. In October 2020 the Group issued new euro denominated Senior Secured Term Loans of €375 million which mature on October 27, 2027. In addition to these new Senior Secured Term Loans the Group has euro and US dollar denominated Term Loans maturing on March 31, 2024.

The Senior Secured Term Loans outstanding at December 31, 2021 before issue costs were €4,851.1 million (2020: €3,682.3 million, 2019: €3,470.9 million) of which €44.7 million (2020: €37.8 million, 2019: €35.4 million) is due within one year. The total amounts outstanding on the euro denominated Term Loans were €2,698.9 million and the US dollar denominated Term Loans were €2,152.2 million.

The Term Loans are to be repaid in equal quarterly instalments, in aggregate annual amounts equal to 1% of the original principal amount of the Term Loans up to the final maturity date, apart from the euro denominated Term Loans maturing November 2028 which have no repayments until maturity. The \$845 million US dollar denominated Term Loans and €350 million of euro denominated Term Loans issued in November 2021 mature on November 8, 2028,

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19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

whilst the €375 million euro denominated Senior Secured Term Loans issued in October 2020 mature on October 27, 2027 with the remaining Term Loans maturing on March 31, 2024.

The outstanding Term Loans denominated in US dollars bear interest at a rate per annum equal to USD LIBOR (with the \$845 million US dollar denominated Term Loans issued in November 2021 being subject to a floor of 0.50% per annum) plus the Applicable Margin. All of the Term Loans denominated in euros bear interest at a rate per annum equal to EURIBOR (subject to a floor of 0.50% per annum) plus the Applicable Margin.

As at December 31, 2021 the Applicable Margin for the euro denominated Term Loans and the US dollar denominated Term Loans maturing March 2024 was 2.00%, for the euro denominated Term Loans maturing October 2027 and November 2028 it was 2.75% and for the US dollar denominated Term Loans maturing November 2028 it was 2.50%.

The Senior Secured Term Loans rank pari passu with the Senior Secured Notes due May 2026, Senior Secured Notes due March 2026, Senior Secured Notes due 2025 and the Schuldschein Loan. The Term Loans are guaranteed by INEOS Group Holdings S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The Term Loans and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the senior secured notes.

The Term Loans have numerous customary operating and financial incurrence covenants all of which have been complied with during the year, including covenants relating to, among other things, limitations on indebtedness, ability to give guarantees, creation of security interests, making acquisitions and investments, disposing of assets and paying dividends. The Term Loans have no financial maintenance covenants.

The Senior Secured Term Loans are stated net of debt issue costs of €21.5 million (2020: €14.6 million, 2019: €9.0 million). These costs are allocated to the profit and loss account over the term of the Term Loans.

Senior Secured Notes due 2023

In April 2019 the Group redeemed in full the Senior Secured Notes due 2023 with the proceeds from the issuance of the Senior Secured Notes due May 2026 along with cash on hand. Before redemption the Senior Secured Notes due 2023 were listed on the Euro MTF - Luxembourg Stock Exchange. The Senior Secured Notes due 2023 bore interest at 4.0% per annum, payable semi-annually in arrears on May 1 and November 1 of each year.

Following the full redemption of the Senior Secured Notes due 2023, unamortised debt issue costs of €4.0 million and an early prepayment premium of €7.7 million were charged to exceptional finance costs in April 2019 (see Note 4).

Senior Secured Notes due 2025

In November 2017 the Group issued €550 million of Senior Secured Notes due 2025. The proceeds from the new Notes were used to partially repay the Senior Secured Term Loans. The Senior Secured Notes due 2025 are listed on the Euro MTF - Luxembourg Stock Exchange. The Senior Secured Notes due 2025 bear interest at 2.125% per annum, payable semi-annually in arrears on May 15 and November 15 of each year. Unless previously redeemed as noted below, the Senior Secured Notes due 2025 will be redeemed by the Group at their principal amount on November 15, 2025.

The Senior Secured Notes due 2025 can be subject to redemption at any time on or after November 15, 2020, at the option of the Issuer, in whole or in part, on not less than 10 nor more than 60 days' prior notice at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the 12-month period beginning November 15 of the year indicated below:

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19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

<u>Year</u>	<u>Redemption Price</u>
2021	100.53125%
2022 and thereafter	<u>100.000%</u>

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 2025 rank pari passu with the Senior Secured Term Loans and Senior Secured Notes due May 2026, Senior Secured Notes due March 2026 and the Schuldschein Loan. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Luxembourg I S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The notes and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the Senior Secured Term Loans.

The Indenture 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 Senior Secured Notes due 2025 are stated net of debt issue costs of €2.9 million (2020: €3.6 million, 2019: €4.4 million). These costs are allocated to the profit and loss account over the term of the Senior Secured Notes due 2025.

Senior Secured Notes due May 2026

In April 2019, the Group issued €770 million of Senior Secured Notes due May 2026. The Senior Secured Notes due May 2026 are listed on the Euro MTF - Luxembourg Stock Exchange. The Senior Secured Notes due May 2026 bear interest at 2.875% per annum, payable semi-annually in arrears on May 1 and November 1 of each year, beginning November 1, 2020. Unless previously redeemed as noted below, the Senior Secured Notes due May 2026 will be redeemed by the Group at their principal amount on May 1, 2026.

The Senior Secured Notes due May 2026 can be subject to redemption at any time on or after May 1, 2022, at the option of the Issuer, in whole or in part, on not less than 10 nor more than 60 days' prior notice at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the 12-month period beginning May 1 of the year indicated below:

<u>Year</u>	<u>Redemption Price</u>
2022	101.4375%
2023	100.71875%
2024 and thereafter	<u>100.000%</u>

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 May 2026 rank pari passu with the Senior Secured Term Loans, Senior Secured Notes due March 2026, Senior Secured Notes due 2025 and the Schuldschein Loan. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Luxembourg I S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The notes and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the Senior Secured Term Loans.

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19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

The Indenture 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 Senior Secured Notes due May 2026 are stated net of debt issue costs of €5.4 million (2020: €6.7 million, 2019: €7.9 million). These costs are allocated to the profit and loss account over the term of the Senior Secured Notes due May 2026.

Senior Secured Notes due March 2026

In October 2020, the Group issued €325 million of Senior Secured Notes due March 2026. The Senior Secured Notes due March 2026 are listed on the Euro MTF - Luxembourg Stock Exchange. The Senior Secured Notes due March 2026 bear interest at 3.375% per annum, payable semi-annually in arrears on May 15 and November 15 of each year, beginning May 15, 2021. Unless previously redeemed as noted below, the

Senior Secured Notes due March 2026 will be redeemed by the Group at their principal amount on March 31, 2026.

The Senior Secured Notes due March 2026 can be subject to redemption at any time on or after November 15, 2022, at the option of the Issuer, in whole or in part, on not less than 10 nor more than 60 days' prior notice at the following redemption prices (expressed as percentages of the aggregate principal amount), if redeemed during the 12-month period beginning November 15 of the year indicated below:

Year	Redemption Price
2022	101.688%
2023	100.844%
2024 and thereafter	<u>100.000%</u>

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 March 2026 rank pari passu with the Senior Secured Term Loans, Senior Secured Notes due May 2026, Senior Secured Notes due 2025 and the Schuldschein Loan. The notes are guaranteed by INEOS Group Holdings S.A., INEOS Luxembourg I S.A., INEOS Holdings Limited and certain of their subsidiaries on a senior secured basis. The notes and the guarantees are secured by first ranking liens on the same assets (subject to certain exceptions) that secure INEOS Holdings Limited's obligations under the Senior Secured Term Loans.

The Indenture 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 Senior Secured Notes due March 2026 are stated net of debt issue costs of €3.7 million (2020: €4.3 million). These costs are allocated to the profit and loss account over the term of the Senior Secured Notes due March 2026.

Senior Notes due 2024

In November 2021 the Group redeemed in full the Senior Notes due 2024 with the proceeds from the issuance of additional Senior Secured Term Loans along with cash on hand. Before redemption the Senior Notes due 2024 were listed on the Euro MTF - Luxembourg Stock Exchange and comprised of €650 million Senior Notes due 2024 (the "Euro Notes") and \$500 million Senior Notes due 2024 (the "Dollar Notes"). The Senior Notes due 2024 bore interest at 5.375% per annum for the Euro Notes and 5.625% for the Dollar Notes, payable semi-annually in arrears on 1 February and 1 August of each year.

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19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

Following the full redemption of the Senior Notes due 2024, unamortised debt issue costs of €3.5 million were charged to exceptional finance costs in November 2021 (see Note 4). Prior to redemption the Senior Notes due 2024 were stated net of debt issue costs of €4.6 million as at December 31, 2020 (2019: €5.9 million).

Receivables Securitisation Facility

The Group has entered into a €800 million receivables securitisation facilities agreement (“Receivables Securitisation Facility”) which matures on December 31, 2024. The total amount outstanding at December 31, 2021 before issue costs was €18.0 million (2020: €114.2 million, 2019: €297.1 million). The facility is secured by pledges over the trade receivables sold into the programme. Interest is charged on the facility at a rate of either EURIBOR, USD LIBOR or SONIA plus a margin or short term commercial paper rates plus a margin.

The Receivables Securitisation Facility is stated net of debt issue costs of €0.2 million (2020: €0.8 million, 2019: €1.2 million).

Koln CoGen Facility

As part of a project at the Group’s Koln site to replace part of its incineration or cogeneration unit, the Group has entered into a €120 million loan facility which matures in December 2024. In May 2021 the Group entered into an additional facility of €60 million which matures in June 2026. The total amount outstanding under the loan facilities (“Koln CoGen Facility”) at December 31, 2021 was €132.0 million (2020: €96.0 million, 2019: €120.0 million) of which €31.5 million (2020: €24.0 million, 2019: €24.0 million) is due within one year.

The €120 million loan facility is to be repaid in equal quarterly instalments of €6 million, starting from March 2020 and bears a fixed interest rate of 2.85% per annum.

The €60 million additional loan facility is to be repaid in equal quarterly payments of €3.75 million starting in September 2022 and bears a fixed interest rate of 2.00% per annum.

The Koln CoGen Facility is secured by pledges over the plant and equipment of INEOS Manufacturing Deutschland GmbH’s new cogeneration assets.

Rafnes Facility (previously Noretyl Facility)

As part of the Group’s purchase of the remaining 50% interest in the Noretyl ethylene cracker at Rafnes, Norway from the Kerling group on July 1, 2015, the Group also assumed the obligations of a €140 million loan facility (“Noretyl Facility”) that Noretyl had in place. In November 2019 following the repayment of the initial loan the term loan facility was amended and restated with a new facility amount (“Rafnes Facility”) of €250.0 million. The total amount outstanding at December 31, 2021 before issue costs was €214.3 million (2020: €250.0 million, 2019: €250.0 million) of which €71.4 million (2020: €35.7 million, 2019: nil) is due within one year.

The Rafnes Facility is to be repaid in equal semi-annual instalments of €35.7 million commencing on December 15, 2021. The facility matures in November 2024. The facility is secured by pledges over the property, plant and equipment of INEOS Rafnes AS (previously Noretyl AS). The Rafnes Facility bears interest at a rate per annum equal to EURIBOR (subject to a floor of 0% per annum) plus a margin of 2.10%.

The Rafnes Facility is stated net of debt issue costs of €2.1 million (2020: €2.7 million, 2019: €3.5 million).

Schuldschein Loan

In March 2019 the Group entered into a €141 million floating rate loan facility (“Schuldschein Loan”). The facility matures in March 2024. The Schuldschein Loan bears interest at a rate per annum equal to EURIBOR for an interest period of six months (subject to a floor of 0.50% per annum) plus a margin of 2.00%. Interest on the Schuldschein Loan is payable semi-annually in arrears in September and March of each year.

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19. INTEREST-BEARING LOANS AND BORROWINGS (continued)

The Schuldschein Loan ranks pari passu with the Senior Secured Term Loans, Senior Secured Notes due 2025, Senior Secured Notes due March 2026 and the Senior Secured Notes due May 2026. The Schuldschein Loan is stated net of debt issue costs of €1.1 million (2020: €1.6 million, 2019: €2.1 million).

Inventory Financing Facility

In June 2019 the Group entered into an inventory monetisation agreement with J Aron & Company LLC ('J Aron'), for an initial term of one year. In April 2021 the Group and J Aron agreed an extension of the term to June 2022, and a further extension option may be exercised by mutual agreement. Under this arrangement, the Group sold certain inventory to J Aron and agreed to buy-back equivalent inventory at the end of the term at the same price. During the term, and subject to certain covenants and rights of J Aron, J Aron provides the Group with a just-in-time service for use of the inventory, and the ability to substitute used inventory with equivalent inventory, in return for a transaction fee. The arrangement is supported by a Group parent company guarantee and a cash collateral mechanism.

The total amount outstanding at December 31, 2021 before issue costs was €243.1 million (2020: €128.8 million, 2019: €190.9 million). The Inventory Financing Facility is stated net of debt issue costs of nil (2020: nil, 2019: €0.5 million).

Gemini Facility

As part of the Group's purchase of the remaining 50% interest in the Gemini HDPE plant in Texas, USA, from Sasol Chemicals on December 31, 2020, the Group amended and upsized the existing Term Loan facility within the acquired Gemini HDPE LLC legal entity. The amended loan facility was upsized to \$600.0 million ("Gemini Facility") and the maturity was extended to October 31, 2027. The total amount outstanding at December 31, 2021 before issue costs was €512.1 million (\$580.3 million) (2020: €487.8 million (\$600.0 million) of which €21.6 million (\$24.5 million) (2020: €16.0 million (\$19.7 million) is due within one year.

The Gemini Facility is to be repaid in quarterly instalments starting on April 30, 2021 with a final payment of \$420.0 million on October 31, 2027 when the facility matures. The facility is secured by pledges over the plant and equipment of Gemini HDPE LLC. The outstanding Gemini Facility will bear interest at a rate per annum equal to USD LIBOR (subject to a floor of 0.5% per annum) plus a margin of 3.0%. Gemini HDPE LLC has been designated as an unrestricted subsidiary in accordance with the Group's Senior Secured Term Loans, Schuldschein Facility and Senior Secured Notes.

The Gemini Facility is stated net of debt issue costs of €9.0 million (2020: €9.9 million).

20. TRADE AND OTHER PAYABLES

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Current			
Trade payables	641.1	329.7	353.7
Amounts due to related parties (see Note 29).....	313.2	179.4	208.8
Other payables.....	702.4	593.6	609.9
Deferred consideration	14.3	13.2	30.9
Accruals and deferred income	918.0	518.1	568.7
	<u>2,589.0</u>	<u>1,634.0</u>	<u>1,772.0</u>
Non-current			
Other payables.....	86.0	89.0	65.7
Accruals and deferred income	27.2	23.9	14.0
	<u>113.2</u>	<u>112.9</u>	<u>79.7</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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21 EMPLOYEE BENEFITS

Pension plans

The Group operates a number of pension plans throughout the world, devised in accordance with local conditions and practices. The plans are generally of the defined benefit type and are funded by payments to separately administered funds or insurance companies. The principal funded plans are in the United Kingdom, North America, Belgium, Switzerland and Germany.

The Group also operates a number of unfunded defined benefit pension schemes in Germany and France.

The most recent full valuations of the significant defined benefit plans were carried out as follows:

Plan	Country	Valuation date
All Plans.....	United Kingdom	5 April 2019 and 31 December 2019
All Plans.....	North America	1 January 2021
All Plans.....	Belgium	1 January 2022
All Plans.....	France	31 December 2021
All Plans.....	Germany	31 December 2021
All Plans.....	Switzerland	31 December 2021

These valuations have been updated where appropriate to December 31, 2021 by independent qualified actuaries.

The Group's pension schemes have been disclosed on a geographical basis as those schemes in the United Kingdom, North America and Other European. Other European principally includes the Group's pension plans in Germany, Belgium, France and Switzerland.

The UK defined benefit pension plans were historically final salary in nature, with a normal retirement age of 60. The majority of the UK plans are either closed to new entrants, or frozen to 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 American pension arrangements consist of two funded plans, both closed to new entrants and future accrual. Both plans were final salary defined benefit in nature, and the plans' liabilities are valued regularly in line with US statutory funding requirements. Around 90% of both plans' assets are invested in bond instruments, to closely match the profile of each plans' liabilities.

The Other European pension arrangements are primarily final salary in nature, the majority of which remain open to new entrants. The majority of plans in Germany are funded through plan assets from contractual trust arrangements. There are no legal minimum funding requirements, thus the Group can decide on any plan contributions considering local conditions and practices. The Swiss benefits are insured, the Belgian plan assets are held in trust, and the remaining schemes are unfunded with associated provisions held on the Group's balance sheet.

Pension plan assumptions

The principal actuarial assumptions (expressed as weighted averages or ranges) at the year end were as follows:

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21. EMPLOYEE BENEFITS (continued)

	United Kingdom			North America			Other European		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
	%								
Major assumptions									
Rate of general increase in salaries.....	3.2	2.8	3.2	3.5	3.5	3.5	2.0-4.5	2.0-4.3	2.0-4.5
Rate of increase to pensions in payment.....	3.0-5.0	3.0-5.0	3.0-5.0	0.0	0.0	0.0	0.0-2.0	0.0-1.8	0.0-1.8
Discount rate for scheme liabilities.....	1.9	1.6	2.1	2.8	2.5	3.3	0.3-1.3	0.0-2.0	0.8-2.5
Inflation.....	3.2	2.8	2.9	N/A	N/A	2.5	1.0-2.0	1.0-1.8	1.0-2.0

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:

	United Kingdom			North America			Other European		
	2021	2020	2019	2021	2020	2019	2021	2020	2019
	Years								
Longevity at age 65 for current pensioners	22.1-24.3	22.0-24.2	22.2-24.4	21.4-22.8	21.2-22.6	21.5-22.9	20.5-28.4	20.3-28.0	22.3-28.0

The following table presents the sensitivity of the defined benefit obligation to each significant actuarial assumption:

	United Kingdom	North America	Other European
	2021		
	%		
Major assumptions			
Discount rate: 1.0% decrease	21.1	15.1	24.9
Rate of inflation: 0.5% increase ¹	7.1	N/A	6.3
One year increase in longevity for a member currently aged 65	4.2	1.5	3.1

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.

Post-retirement health care plans

The Group also operates a number of post-retirement healthcare plans in the United States, which provide employees with other post-employment benefits in respect of health care. The plans are unfunded and the liability in respect of these benefits is included in provisions. The liability is assessed by qualified independent actuaries under the projected unit method, assuming the following rates:

	2021	2020	2019
	%		
Rates			
Liability discount rate.....	2.8	2.5	3.3
Long-term healthcare trend rate	5.0	5.0	5.0

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21. EMPLOYEE BENEFITS (Continued)

History of plans

The history of the plans for the current and prior years is as follows:

Consolidated balance sheet

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Present value of the defined benefit obligation in respect of pension plan.....	1,917.0	2,014.9	1,838.2
Present value of obligations in respect of post-retirement health care plan.....	22.8	25.4	26.5
Fair value of plan assets	(1,106.6)	(1,022.6)	(929.0)
Net deficit	833.2	1,017.7	935.7

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Non-current assets	(123.6)	(82.7)	(48.5)
Non-current liabilities	956.8	1,100.4	984.2
Net deficit	833.2	1,017.7	935.7

The Group's net liability in respect of defined benefit obligations (DBO) is as follows:

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Obligations in respect of pension plans:			
United Kingdom.....	(67.8)	(53.9)	(48.1)
North America.....	(26.4)	(28.5)	(22.6)
Other European	904.6	1,074.7	979.9
	810.4	992.3	909.2
Obligations in respect of post-retirement health care plans.....	22.8	25.4	26.5
Recognised liability for defined benefit obligations	833.2	1,017.7	935.7

The Group expects to contribute approximately €39.7 million to its funded defined benefit plans in the next financial year. This excludes direct company benefit payments and payments in relation to unfunded defined benefit plan schemes.

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21. EMPLOYEE BENEFITS (Continued)

Expense recognised in the consolidated income statement

	<u>United Kingdom</u>	<u>North America</u>	<u>Other European</u>	<u>Post retirement health care plans</u>	<u>Total</u>
	€m				
Year ended 31 December 2021					
Current service cost	0.6	0.7	52.7	0.4	54.4
Past service credit	-	-	(2.0)	-	(2.0)
Cost of termination benefits.....	-	-	6.5	-	6.5
Interest cost on DBO.....	5.7	5.9	9.2	0.6	21.4
Interest income on assets	(6.6)	(6.7)	(1.6)	-	(14.9)
	(0.3)	(0.1)	64.8	1.0	65.4

	<u>United Kingdom</u>	<u>North America</u>	<u>Other European</u>	<u>Post retirement health care plans</u>	<u>Total</u>
	€m				
Year ended 31 December 2020					
Current service cost	0.6	0.9	49.3	0.4	51.2
Cost of termination benefits.....	-	-	3.9	-	3.9
Interest cost on DBO.....	6.6	7.7	13.7	0.8	28.8
Interest income on assets	(7.7)	(8.5)	(2.2)	-	(18.4)
	(0.5)	0.1	64.7	1.2	65.5

	<u>United Kingdom</u>	<u>North America</u>	<u>Other European</u>	<u>Post retirement health care plans</u>	<u>Total</u>
	€m				
Year ended 31 December 2019					
Current service cost	0.7	1.0	41.3	0.4	43.4
Past service credit	-	-	(1.7)	-	(1.7)
Cost of termination benefits.....	-	-	2.9	-	2.9
Interest cost on DBO.....	8.9	9.6	18.9	1.0	38.4
Interest income on assets	(10.1)	(10.1)	(4.2)	-	(24.4)
	(0.5)	0.5	57.2	1.4	58.6

The expense is recognised in the following line items in the consolidated income statement:

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Cost of sales and administrative expenses.....	58.9	55.1	44.6
Finance cost.....	6.5	10.4	14.0
	65.4	65.5	58.6

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2021 (*forming part of the financial statements*)

21. EMPLOYEE BENEFITS (Continued)

Pension plans

	United Kingdom	North America	Other European	Total
	€m			
As at 31 December 2021				
Present value of funded obligations	363.1	234.1	1,273.7	1,870.9
Present value of unfunded obligations	-	-	46.1	46.1
	363.1	234.1	1,319.8	1,917.0
Fair value of plan assets	(430.9)	(260.5)	(415.2)	(1,106.6)
	(67.8)	(26.4)	904.6	810.4

	United Kingdom	North America	Other European	Total
	€m			
As at 31 December 2020				
Present value of funded obligations	346.8	238.4	1,140.1	1,725.3
Present value of unfunded obligations	-	-	289.6	289.6
	346.8	238.4	1,429.7	2,014.9
Fair value of plan assets	(400.7)	(266.9)	(355.0)	(1,022.6)
	(53.9)	(28.5)	1,074.7	992.3

	United Kingdom	North America	Other European	Total
As at 31 December 2019				
Present value of funded obligations	337.7	252.6	360.5	950.8
Present value of unfunded obligations	-	-	887.4	887.4
	337.7	252.6	1,247.9	1,838.2
Fair value of plan assets	(385.8)	(275.2)	(268.0)	(929.0)
	(48.1)	(22.6)	979.9	909.2

Included within the Other European deficits are amounts relating to German plans of €903.5 million (2020: €1,035.2 million, 2019: €877.7 million).

The pension plan surplus is recognised on the balance sheet on the basis that the Group is entitled to a refund of any remaining assets once all members have left the plan or it can be used to fund future employer contributions.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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21. EMPLOYEE BENEFITS (Continued)

Movements in present value of defined benefit obligation:

	<u>United Kingdom</u>	<u>North America</u>	<u>Other European</u>	<u>Total</u>
	€m			
At 1 January 2019	302.5	230.1	1,001.1	1,533.7
Current service cost.....	0.7	1.0	41.3	43.0
Past service credit.....	-	-	(1.7)	(1.7)
Interest cost on DBO.....	8.9	9.6	18.9	37.4
Member contributions	-	-	1.7	1.7
Actuarial (gain)/loss – experience.....	(5.5)	1.2	9.1	4.8
Actuarial (gain) – demographic assumptions	(3.2)	(0.6)	(3.7)	(7.5)
Actuarial loss – financial assumptions	39.5	28.0	196.2	263.7
Disbursements from plan assets	(22.3)	(22.5)	(7.6)	(52.4)
Disbursements paid directly by the employer	-	(0.2)	(13.0)	(13.2)
Termination benefits	-	-	2.9	2.9
New material plans.....	-	1.3	-	1.3
Exchange.....	17.1	4.7	2.7	24.5
At 31 December 2019	337.7	252.6	1,247.9	1,838.2
Current service cost.....	0.6	0.9	49.3	50.8
Interest cost on DBO.....	6.6	7.8	13.6	28.0
Member contributions	-	-	1.8	1.8
Actuarial loss – experience.....	0.6	0.9	9.2	10.7
Actuarial loss/(gain) – demographic assumptions	2.3	(0.6)	-	1.7
Actuarial loss – financial assumptions	33.5	22.6	128.0	184.1
Disbursements from plan assets	(15.4)	(22.4)	(9.4)	(47.2)
Disbursements paid directly by the employer	-	(0.2)	(13.3)	(13.5)
Termination benefits	-	-	3.9	3.9
Exchange.....	(19.1)	(23.2)	(1.3)	(43.6)
At 31 December 2020	346.8	238.4	1,429.7	2,014.9
Current service cost.....	0.6	0.7	52.7	54.0
Past service credit.....	-	-	(2.0)	(2.0)
Interest cost on DBO.....	5.7	5.9	9.2	20.8
Member contributions	-	-	1.6	1.6
Actuarial (gain)/loss – experience.....	(0.1)	0.9	(5.7)	(4.9)
Actuarial loss/(gain) – demographic assumptions	-	3.4	(5.1)	(1.7)
Actuarial (gain) – financial assumptions	(0.8)	(7.0)	(124.5)	(132.3)
Disbursements from plan assets	(15.3)	(27.2)	(12.1)	(54.6)
Disbursements paid directly by the employer	-	(0.2)	(14.0)	(14.2)
Termination benefits	-	-	6.5	6.5
Reclassifications.....	-	-	(20.1)	(20.1)
Exchange.....	26.2	19.2	3.6	49.0
At 31 December 2021	363.1	234.1	1,319.8	1,917.0

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21. EMPLOYEE BENEFITS (Continued)

Movements in fair value of plan assets:

	<u>United Kingdom</u>	<u>North America</u>	<u>Other European</u>	<u>Total</u>
	€m			
At 1 January 2019	338.3	239.6	235.2	813.1
Interest income on plan assets	10.1	10.1	4.2	24.4
Return on plan assets greater than discount rate	27.2	36.6	16.2	80.0
Employer contributions	13.1	5.4	29.5	48.0
Member contributions	-	-	1.7	1.7
Disbursements	(22.3)	(22.7)	(20.6)	(65.6)
Reclassifications	-	1.3	-	1.3
Exchange	19.4	4.9	1.8	26.1
At 31 December 2019	385.8	275.2	268.0	929.0
Interest income on plan assets	7.7	8.5	2.2	18.4
Return on plan assets greater than discount rate	36.4	31.5	45.4	113.3
Employer contributions	8.0	0.2	61.8	70.0
Member contributions	-	-	1.8	1.8
Disbursements	(15.4)	(22.6)	(22.7)	(60.7)
Exchange	(21.8)	(25.9)	(1.5)	(49.2)
At 31 December 2020	400.7	266.9	355.0	1,022.6
Interest income on plan assets	6.6	6.7	1.6	14.9
Return on plan assets greater/(less) than discount rate	5.7	(7.4)	27.3	25.6
Employer contributions	2.5	0.2	72.0	74.7
Member contributions	-	-	1.6	1.6
Disbursements	(15.3)	(27.4)	(26.1)	(68.8)
Reclassifications	-	-	(18.8)	(18.8)
Exchange	30.7	21.5	2.6	54.8
At 31 December 2021	430.9	260.5	415.2	1,106.6

The overall expected rate of return is calculated by weighting the individual rates in accordance with the anticipated balance in the plan's investment portfolio.

The fair value of the plan assets were as follows:

	<u>United Kingdom</u>	<u>North America</u>	<u>Other European</u>	<u>Total</u>
	€m			
At 31 December 2021				
Equities	6.4	25.5	215.1	247.0
Bonds	312.6	231.8	90.5	634.9
Property	0.8	-	54.5	55.3
Other	111.1	3.2	55.1	169.4
Total plan assets	430.9	260.5	415.2	1,106.6

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21. EMPLOYEE BENEFITS (Continued)

	<u>United Kingdom</u>	<u>North America</u>	<u>Other European</u>	<u>Total</u>
	€m			
At 31 December 2020				
Equities	24.1	27.8	168.6	220.5
Bonds	311.7	236.9	68.0	616.6
Property	12.9	-	49.9	62.8
Other	52.0	2.2	68.5	122.7
Total plan assets	400.7	266.9	355.0	1,022.6

	<u>United Kingdom</u>	<u>North America</u>	<u>Other European</u>	<u>Total</u>
	€m			
At 31 December 2019				
Equities	30.9	27.3	114.8	173.0
Bonds	284.3	244.9	52.3	581.5
Property	12.2	-	19.7	31.9
Other	58.4	3.0	81.2	142.6
Total plan assets	385.8	275.2	268.0	929.0

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.

Post-retirement health care plans

Reconciliation of present value of scheme liabilities:

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
At 1 January	25.4	26.5	23.9
Current service cost	0.4	0.4	0.4
Interest cost on DBO	0.6	0.8	1.0
Actuarial loss – experience	-	1.1	0.9
Actuarial (gain) – demographic assumptions	(3.0)	(0.1)	(0.3)
Actuarial (gain)/loss – financial assumptions	(0.5)	2.0	2.5
Disbursements directly paid by the employer	(2.1)	(2.8)	(2.6)
Exchange adjustments	2.0	(2.5)	0.7
At 31 December	22.8	25.4	26.5

The post-retirement healthcare plans do not hold any assets.

The following table presents the sensitivity of the defined benefit obligation to each significant actuarial assumption:

	<u>2021</u>
	%
Major assumptions	
Discount rate: 1.0% decrease	10.5%
1 year increase in longevity for a member currently aged 65	2.0%

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22. PROVISIONS

	Severance and restructuring costs	Remediation	Other	Total
	€m			
At 1 January 2021	31.6	26.3	4.1	62.0
Credited to the income statement	(5.6)	(10.8)	(1.2)	(17.6)
Utilised in the year	-	(0.1)	(1.8)	(1.9)
Unwinding of discount	-	0.2	-	0.2
Reclassifications	(0.3)	-	0.3	-
Effects of movements in foreign exchange	(5.8)	0.9	0.2	(4.7)
At 31 December 2021	19.9	16.5	1.6	38.0
Non – current	20.1	25.9	0.5	46.5
Current	17.9	6.2	3.5	27.6
Balance at 31 December 2019	38.0	32.1	4.0	74.1
Non – current	25.7	25.3	1.3	52.3
Current	5.9	1.0	2.8	9.7
Balance at 31 December 2020	31.6	26.3	4.1	62.0
Non – current	18.3	13.9	0.1	32.3
Current	1.6	2.6	1.5	5.7
Balance at 31 December 2021	19.9	16.5	1.6	38.0

Severance and restructuring costs

The severance and restructuring costs provision includes €15.8 million relating to the Köln site following a reorganisation within the O&P North business in 2015 and is expected to be fully utilised by 2027.

In December 2019 the Group took the decision to close the Nitriles facility at Seal Sands, United Kingdom. The severance and restructuring costs provision includes €1.0 million in respect of remaining closure costs including severance and outplacement expenses. The provision is expected to be fully utilised within the next year.

Remediation costs

The Group has provided for the cost of remediation works of €15.3 million where there is a legal or constructive obligation for such work to be carried out. Provisions are established to meet the clean-up costs of contaminated soil and groundwater, the removal of potentially hazardous substances and rectification work required to ensure compliance with license to operate obligations. These costs relate mainly to the Group's production facilities at the Köln, Chocolate Bayou, Green Lake and Lima sites, a pilot plant at the Lavera site and oil and gas wells in the Giddings Field. The provision only covers items of specific work for which a reasonable estimate can be determined. By their nature the amounts and timing of any outflows in respect of remediation costs are difficult to predict.

In December 2019 the Group took the decision to close the Nitriles facility at Seal Sands, United Kingdom. The remediation provision includes €1.2 million in respect of decommissioning and demolition costs. The provision is expected to be fully utilised within the next year.

Other provisions

Other provisions primarily relates to a commercial disputes in respect of a licencing agreement and are expected to be fully utilised within the next two years.

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23. SHARE CAPITAL

	2021	2020	2019
	€m		
Fully paid			
924,803 (2020: 924,803, 2019: 924,803) Ordinary shares of €1 each.....	0.9	0.9	0.9

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.

The Company did not hold or acquire any of its own shares during the year ended 31 December 2021 (2020: none, 2019: none).

24. DIVIDENDS

The following dividends were recognised during the year:

	2021	2020	2019
	€m		
Dividend paid (2021: €865.0 per share, 2020: nil per share, 2019: €2,234.6 per share).....	800.0	-	2,066.6

25. FINANCIAL INSTRUMENTS

25a Fair value of financial instruments

Investments in debt and equity securities

The fair value of financial assets at fair value through profit or loss is estimated as the present value of future cash flows, discounted at the market rate of interest at the reporting date.

Financial assets at fair value through other comprehensive income are accounted for at fair value based on the present value of future cash flows where such information is readily available based on the present value of future cash flows estimated from financial information made available during the year as a result of a recent transaction in the investment. However, as explained in Note 14, the Group's financial assets at fair value through other comprehensive income include certain equity interests which are not quoted and for which there is no active market. The Group considers that the acquisition cost to be a reasonable approximation for fair value.

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.

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25. FINANCIAL INSTRUMENTS (continued)

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 reporting date.

Interest-bearing borrowings

The fair value of the Senior Secured Term Loans and Senior Secured Notes, which after initial recognition is determined for disclosure purposes only are based on the market yields derived from quotes obtained at the year end from leading financial institutions. The fair value of the Receivables and Inventory Securitisation, Rafnes Facility, Schuldschein Loan, Koln CoGen Facility, Gemini Facility and Other loans is the same as the carrying value before unamortised debt issue costs.

Derivative financial instruments

The fair value of interest rate swaps and commodity contracts are based on market or broker quotes.

Fair values

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:

	Carrying amount	Fair value	Carrying amount	Fair value	Carrying amount	Fair value
	2021		2020		2019	
	€m					
Financial assets held at fair value through profit or loss:						
Derivative commodity contracts	256.0	256.0	154.5	154.5	15.3	15.3
Interest rate swap contracts	26.2	26.2	-	-	-	-
Financial assets held at fair value through other comprehensive income:						
Equity investments	28.3	28.3	28.3	28.3	28.3	28.3
Financial assets held at amortised cost (previously loans and receivables):						
Trade receivables	1,665.4	1,665.4	955.1	955.1	1,008.6	1,008.6
Amounts due from related parties	1,346.9	1,346.9	905.5	905.5	1,028.6	1,028.6
Other receivables	188.1	188.1	102.5	102.5	152.8	152.8
Cash and cash equivalents.....	2,106.1	2,106.1	1,342.2	1,342.2	982.9	982.9
Total financial assets.....	5,617.0	5,617.0	3,488.1	3,488.1	3,216.5	3,216.5

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25. FINANCIAL INSTRUMENTS (continued)

	Carrying amount	Fair value	Carrying amount	Fair value	Carrying amount	Fair value
	2021		2020		2019	
	€m					
Financial liabilities held at fair value through profit and loss:						
Derivative commodity contracts	236.0	236.0	96.9	96.9	59.5	59.5
Interest rate swap contracts	-	-	4.2	4.2	-	-
Financial liabilities carried at amortised cost:						
Senior Secured Term Loans	4,829.6	4,845.6	3,667.7	3,653.4	3,461.9	3,478.5
Senior Secured Notes	1,633.0	1,661.8	1,630.4	1,662.2	1,307.7	1,352.5
Senior Notes	-	-	1,051.9	1,072.2	1,090.4	1,138.1
Securitisation Facility	17.8	18.0	113.4	114.2	295.9	297.1
Inventory Financing Facility	243.1	243.1	128.8	128.8	190.4	190.9
Rafnes Facility	212.2	214.3	247.3	250.0	246.5	250.0
Koln CoGen Facility	132.0	132.0	96.0	96.0	120.0	120.0
Schuldschein Loan	139.9	141.0	139.4	141.0	138.9	141.0
Other loans	28.6	28.6	29.0	29.0	1.1	1.1
Gemini Facility	503.1	512.1	477.9	487.8	-	-
Lease liabilities	977.6	977.6	893.3	893.3	989.8	989.8
Trade payables	641.1	641.1	329.7	329.7	353.7	353.7
Amounts due to related parties	313.2	313.2	179.4	179.4	208.8	208.8
Other payables	788.4	788.4	682.6	682.6	675.6	675.6
Total financial liabilities	<u>10,695.6</u>	<u>10,752.8</u>	<u>9,767.9</u>	<u>9,820.7</u>	<u>9,140.2</u>	<u>9,256.6</u>

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).

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25. FINANCIAL INSTRUMENTS (continued)

	<u>Fair value</u>	<u>Level</u>			<u>Fair value</u>	<u>Level</u>			<u>Fair value</u>	<u>Level</u>		
		<u>1</u>	<u>2</u>	<u>3</u>		<u>1</u>	<u>2</u>	<u>3</u>		<u>1</u>	<u>2</u>	<u>3</u>
		<u>2021</u>				<u>2020</u>				<u>2019</u>		
					€m							
Financial assets held at fair value through profit or loss:												
Derivative commodity contracts	256.0	77.7	178.3	-	154.5	-	154.5	-	15.3	-	15.3	-
Interest rate swap contracts.....	26.2	-	26.2	-	-	-	-	-	-	-	-	-
Financial assets held at fair value through other comprehensive income:												
Equity investments	28.3	-	-	28.3	28.3	-	-	28.3	28.3	-	-	28.3
Financial liabilities held at fair value through profit and loss:												
Derivative commodity contracts	(236.0)	(42.8)	(193.2)	-	(96.9)	-	(96.9)	-	(59.5)	-	(59.5)	-
Interest rate swap contracts.....	-	-	-	-	(4.2)	-	(4.2)	-	-	-	-	-
Total financial assets and liabilities held at fair value.....	<u>74.5</u>	<u>34.9</u>	<u>11.3</u>	<u>28.3</u>	<u>81.7</u>	<u>-</u>	<u>53.4</u>	<u>28.3</u>	<u>(15.9)</u>	<u>-</u>	<u>(44.2)</u>	<u>28.3</u>

The commodity derivatives are fair valued using rates in quoted markets. There have been no transfers between any levels in 2021 (2020 and 2019: no transfers between levels).

25b Net gains and losses from financial instruments

Net gains and losses from financial instruments comprise the results of valuations, the amortisation of discounts, 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 discounts, 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.

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25. FINANCIAL INSTRUMENTS (continued)

	Assets measured at amortised cost			Fair value through OCI		
	2021	2020	2019	2021	2020	2019
			€m			
Interest income.....	50.5	59.9	76.0	-	-	-
Dividend income.....	-	-	-	0.2	2.4	6.0
Foreign exchange (losses)/gains	(19.9)	17.3	61.1	-	-	-
Net result.....	30.6	77.2	137.1	0.2	2.4	6.0
Carrying value at 31 December	5,306.5	3,305.3	3,172.9	28.3	28.3	28.3

	Liabilities measured at amortised cost			Financial instruments at fair value through profit or loss		
	2021	2020	2019	2021	2020	2019
			€m			
Interest cost.....	(268.7)	(266.0)	(287.3)	-	-	-
Other finance cost.....	(24.2)	(6.2)	(7.4)	-	-	-
Net fair value gains/(losses) on derivatives.....	-	-	-	76.1	5.8	(95.4)
Foreign exchange gains/(losses)	331.6	163.4	(27.7)	7.0	1.5	-
Net result.....	38.7	(108.8)	(322.4)	83.1	7.3	(95.4)
Carrying value at 31 December	(10,459.6)	(9,666.8)	(9,080.7)	46.2	53.4	(44.2)

25c 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 derivatives.

Group Treasury policy and objectives in relation to credit risk is to minimize 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.

Investments, cash and cash equivalent

Surplus cash investments are only made with banks with which the Group has a relationship.

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25. FINANCIAL INSTRUMENTS (continued)

Guarantees

The Group's policy is to provide financial guarantees only to wholly-owned subsidiaries. At December 31, 2021 no guarantees were outstanding (2020: none, 2019: none).

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 are given in Note 18.

25d 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, and it maintains the most appropriate mix of short, medium and long-term borrowings from the Group's lenders.

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 period.

In addition, the Group maintains various lines of credits in the form of Senior Secured Notes, Senior Secured Term Loans, Securitisation, Rafnes Facility, Koln CoGen Facility, Gemini Facility and Other loans. (See Note 19 – "Interest-Bearing Loans and Borrowings" for more information).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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25. FINANCIAL INSTRUMENTS (continued)

The following are the contractual maturities of financial liabilities, including estimated interest payments and excluding the effect of netting agreements:

	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 Term Loans	4,829.6	(5,311.2)	(170.4)	(171.1)	(3,486.1)	(1,483.6)
Senior Secured Notes	1,633.0	(1,839.4)	(44.8)	(44.8)	(1,749.8)	-
Securitisation Facility.....	17.8	(30.4)	(4.1)	(4.1)	(22.2)	-
Inventory Financing Facility	243.1	(246.0)	(246.0)	-	-	-
Rafnes Facility	212.2	(230.1)	(79.7)	(76.7)	(73.7)	-
Koln CoGen Facility	132.0	(137.6)	(33.7)	(56.6)	(47.3)	-
Schuldschein loan.....	139.9	(151.5)	(3.5)	(3.5)	(144.5)	-
Other loans	28.6	(32.1)	(10.6)	(2.2)	(4.7)	(14.6)
Gemini Facility	503.1	(605.4)	(39.2)	(39.1)	(117.4)	(409.7)
Lease liabilities	977.6	(1,251.6)	(185.3)	(185.3)	(395.0)	(486.0)
Trade payables	641.1	(641.1)	(641.1)	-	-	-
Amounts due to related parties.....	313.2	(313.2)	(313.2)	-	-	-
Other payables.....	788.4	(788.4)	(702.4)	(86.0)	-	-
Derivative financial liabilities						
Commodity contracts	236.0	(236.0)	(236.0)	-	-	-
	10,695.6	(11,814.0)	(2,710.0)	(669.4)	(6,040.7)	(2,393.9)

	2020					
	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 Term Loans	3,667.7	(4,006.7)	(129.6)	(128.4)	(3,376.1)	(372.6)
Senior Secured Notes	1,630.4	(1,884.7)	(45.3)	(44.8)	(684.4)	(1,110.2)
Senior Notes.....	1,051.9	(1,287.7)	(57.8)	(57.8)	(1,172.1)	-
Securitisation Facility.....	113.4	(125.6)	(5.7)	(119.9)	-	-
Inventory Financing Facility	128.8	(130.3)	(130.3)	-	-	-
Rafnes Facility	247.3	(271.1)	(41.0)	(79.7)	(150.4)	-
Koln CoGen Facility	96.0	(101.8)	(26.5)	(25.8)	(49.5)	-
Schuldschein loan.....	139.4	(155.1)	(3.5)	(3.5)	(148.1)	-
Other loans	29.0	(33.2)	(2.9)	(10.5)	(5.0)	(14.8)
Gemini Facility	477.9	(587.6)	(30.0)	(36.1)	(108.1)	(413.4)
Lease liabilities	893.3	(1,061.2)	(174.7)	(174.7)	(289.5)	(422.3)
Trade payables	329.7	(329.7)	(329.7)	-	-	-
Amounts due to related parties.....	179.4	(179.4)	(179.4)	-	-	-
Other payables.....	682.6	(682.6)	(593.6)	(89.0)	-	-
Derivative financial liabilities						
Commodity contracts	96.9	(96.9)	(96.9)	-	-	-
Interest rate swap contracts	4.2	(18.1)	(3.1)	(3.1)	(11.9)	-
	9,767.9	(10,951.7)	(1,850.0)	(773.3)	(5,995.1)	(2,333.3)

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25. FINANCIAL INSTRUMENTS (continued)

	2019					
	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 Term Loans	3,461.9	(3,905.3)	(139.8)	(138.2)	(3,627.3)	-
Senior Secured Notes	1,307.7	(1,534.0)	(33.8)	(33.8)	(101.5)	(1,364.9)
Senior Notes	1,090.4	(1,396.4)	(60.0)	(60.0)	(1,276.4)	-
Securitisation Facility	295.9	(322.9)	(8.6)	(8.6)	(305.7)	-
Inventory Financing Facility	190.4	(192.7)	(192.7)	-	-	-
Noretyl Facility	246.5	(271.0)	-	(41.0)	(230.0)	-
Koln CoGen Facility	120.0	(129.0)	(27.2)	(26.5)	(75.3)	-
Schuldschein loan	138.9	(158.6)	(3.5)	(3.5)	(151.6)	-
Other loans	1.1	(1.1)	(0.5)	(0.6)	-	-
Lease liabilities	989.8	(1,131.1)	(187.0)	(187.0)	(272.0)	(485.1)
Trade payables	353.7	(353.7)	(353.7)	-	-	-
Amounts due to related parties	208.8	(208.8)	(208.8)	-	-	-
Other payables	675.6	(675.6)	(609.9)	(65.7)	-	-
Derivative financial liabilities						
Commodity contracts	59.5	(59.5)	(59.5)	-	-	-
	9,140.2	(10,339.7)	(1,885.0)	(564.9)	(6,039.8)	(1,850.0)

25e Net investment and cash flow hedges

The Group does not have derivative commodity contracts that qualify as cash flow hedges at December 31, 2021.

The Group has US\$ and Sterling financial liabilities in respect of the Senior Notes and Securitisation Facility that are designated net investment hedges of US\$ and Sterling operations in accordance with the requirements of IFRS 9. The US\$ and Sterling net investment hedges had a carrying value and fair value as follows:

	Carrying amounts 2021	Fair value 2021	Carrying amounts 2020	Fair value 2020	Carrying amounts 2019	Fair value 2019
	€m					
US Dollars	(15.7)	(15.9)	(516.1)	(525.0)	(2,019.6)	(2,039.7)
Sterling	(2.1)	(2.1)	(2.0)	(2.0)	(3.2)	(3.2)
	(17.8)	(18.0)	(518.1)	(527.0)	(2,022.8)	(2,042.9)

For the year ended December 31, 2021 gains net of tax of €479.2 million were taken directly to reserves and reported in the Statement of Comprehensive Income for the year then ended (2020: losses €527.4 million, 2019: gains €88.0 million). There was no ineffectiveness recognised in the income statement for the year ended December 31, 2021 (2020: €nil, 2019: €nil). The cumulative net investment hedge reserve amount as at December 31, 2021 was €442.7 million (2020: €(36.5) million, 2019: €490.9 million).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS
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25. FINANCIAL INSTRUMENTS (continued)

25f Market risk

Financial risk management

Market risk reflects the possibility that changes in market prices, such as crude oil, feedstock refined products, chemicals or currency exchange rates or changes in interest rates will adversely affect the value of the Group's assets, liabilities or expected future cash flows. The Group holds commodity and interest rate swap contracts in order to manage market risk. The use of derivative instruments is confined to specialist teams that have the appropriate skills, experience, supervision, control and reporting systems.

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 U.S. Dollar and Sterling.

Foreign exchange risk arises from net investments in foreign operations, future commercial transactions, and recognised assets and liabilities.

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 operation is neither planned nor likely in the foreseeable future, foreign exchange gains and losses arising from such a monetary item is considered to form part of a net investment in a foreign operation and changes in the fair value are recognised directly within equity.

A substantial portion of the Group's revenue is generated in, or linked to, the U.S. dollar and the euro. In the European petrochemical business, product prices, certain feedstock costs and most other costs are denominated in euro and sterling. In the U.S. petrochemical and specialty chemicals businesses, product prices, raw materials costs and most other costs are primarily denominated in U.S. dollars.

The Group generally does not enter into foreign currency exchange instruments to hedge foreign currency transaction exposure, although the Group has done so in the past and 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 external 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 other comprehensive income of the Group.

	<u>2021</u>	<u>2020</u>	<u>2019</u>
		€m	
Euros	4.5	26.9	-
US Dollars.....	(126.1)	(609.8)	(589.7)
Sterling.....	3.4	(9.0)	(12.9)
Other	(211.4)	(247.0)	(247.4)
	<u>(329.6)</u>	<u>(838.9)</u>	<u>(850.0)</u>

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25. FINANCIAL INSTRUMENTS (continued)

Sensitivity analysis

A ten percent weakening of the following currencies at December 31, 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 years.

	Equity			Profit or loss		
	2021	2020	2019	2021	2020	2019
	€m					
Euro.....	-	-	-	(0.5)	(2.7)	-
US Dollars.....	1.6	51.6	57.1	11.0	9.4	1.8
Sterling.....	0.2	0.2	0.3	(0.6)	0.7	1.0
Other	20.9	24.4	24.6	0.3	0.3	0.1

A ten percent strengthening of the above currencies against the euro at December 31, 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.

Market risk – Interest rate risk

Profile

At the reporting date the interest rate profile of the Group's interest-bearing financial instruments was:

Carrying amount – asset/(liability)	2021	2020	2019
	€m		
Fixed rate instruments			
Financial assets	1,108.6	761.5	859.6
Financial liabilities	(3,014.3)	(3,829.4)	(3,699.4)
	(1,905.7)	(3,067.9)	(2,839.8)
Variable rate instruments			
Financial assets	2,106.1	1,342.2	982.9
Financial liabilities	(5,702.6)	(4,645.7)	(4,143.2)
	(3,596.5)	(3,303.5)	(3,160.3)

Sensitivity analysis

A change of 1% in interest rates at the reporting date 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 foreign currency rates, remain constant and considers the effect of financial instruments with variable interest rates, financial instrument at fair value through profit or loss or available for sale with fixed interest rates and the fixed rate element of interest rate caps. The analysis is performed on the same basis for 2021, 2020 and 2019.

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25. FINANCIAL INSTRUMENTS (continued)

Sensitivity analysis (continued)

	2021	2020	2019
	€m		
Profit or loss			
Loss on increase in interest rates by 1%	(36.0)	(33.0)	(31.6)

A 1% change in the opposite direction of the above interest rates at December 31, 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.

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 and its Refining joint venture are 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 crude oil 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 manages commodity price exposures through trading refined products and chemical feedstock and using commodity swaps, options and futures as a means of managing price and timing risks. In 2021 there was a net mark to market derivative asset in respect of commodity contracts of €20.0 million entered into by the Group to manage such risk (2020: net derivative liability of €57.6 million, 2019: net derivative liability of €44.2 million).

The Group operates within procedures and policies designed to ensure that risks, including those relating to the default of counterparties, are minimised.

Market risk – Equity price risk

The Group's exposure to equity price risk arises from its investment in equity securities which are classified as financial assets at fair value through other comprehensive income. These financial assets are accounted for at fair value based on the present value of future cash flows where such information is readily available.

For the financial assets at fair value through other comprehensive income a 10 percent increase and decrease in transaction prices at the reporting date would have decreased and increased the loss for the year by €2.8 million (2020: €2.8 million, 2019: €2.8 million). Management consider that a change of 10 percent gives an appropriate benchmark to assess the risks that the Group is expected to be exposed to. 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.

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.

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25. FINANCIAL INSTRUMENTS (continued)

The Group defines its capital employed of €8,986.2 million (2020: €7,701.2 million, 2019: €7,326.3 million) as shareholders' equity of €3,353.0 million (2020: €1,461.6 million, 2019: €1,456.4 million) and net debt (net of debt issue costs) of €5,633.2 million (2020: €6,239.6 million, 2019: €5,869.9 million).

The principal sources of debt available to the Group at December 31, 2021 include the Senior Secured Term Loans, Senior Secured Notes due March 2026, Senior Secured Notes due May 2026, Senior Secured Notes due 2025, Receivables Securitisation Facility, Inventory Financing Facility, Schuldschein Loan, Rafnes Facility, Koln CoGen Facility and the Gemini Facility and are described in Note 19 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. LEASE OBLIGATIONS

<i>Analysed as:</i>	2021	2020	2019
	€m	€m	€m
Current lease liabilities.....	146.8	120.5	125.4
Non-current lease liabilities.....	830.8	772.8	864.4
	977.6	893.3	989.8

<i>Maturity analysis – contractual undiscounted cash flows:</i>	2021	2020	2019
	€m	€m	€m
Less than one year.....	185.3	174.7	187.0
Between one and five years.....	580.3	464.2	459.0
More than five years.....	486.0	422.3	485.1
Total undiscounted lease liabilities at 31 December	1,251.6	1,061.2	1,131.1

<i>Amounts recognized in the statement of cash flows:</i>	2021	2020	2019
	€m	€m	€m
Total cash outflow for leases.....	208.2	243.3	207.1

The Group has entered into a number of significant lease arrangements relating to shipping capacity in respect of the supply chain activities for the European cracker assets. These leases typically run for a period of between 10 and 15 years with options to extend after that date.

The Group does not face a significant liquidity risk with regard to its lease liabilities. Lease liabilities are monitored within the Group's treasury function.

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27. CAPITAL COMMITMENTS

Outstanding capital expenditure authorised by the Board and for which contracts had been placed as at December 31, 2021 by the Group amounted to approximately €273.0 million (2020: €308.8 million, 2019: €616.3 million).

28. RECONCILIATION OF NET CASH FLOW TO MOVEMENT IN NET DEBT

	<u>2021</u>	<u>2020</u>	<u>2019</u>
	€m		
Increase/(decrease) in cash and cash equivalents in the year.....	633.7	428.9	(1,104.6)
Cash outflow/(inflow) from change in debt financing.....	46.1	(636.4)	(514.4)
Change in net debt before issue costs resulting from cash flows.....	679.8	(207.5)	(1,619.0)
Debt acquired with acquisition of business	-	(301.0)	-
Foreign exchange and other net non-cash transactions.....	(70.5)	124.5	(26.0)
Movement in net debt before issue costs in year	<u>609.3</u>	<u>(384.0)</u>	<u>(1,645.0)</u>

An analysis of changes in the Group's liabilities arising from financing activities is as follows:

	<u>1 Jan 2021</u>	<u>Cash Flow</u>	<u>Acquisitions (Note 3)</u>	<u>Foreign Exchange and Other Non Cash Changes</u>	<u>31 Dec 2021</u>
	€m	€m	€m	€m	€m
Interest-bearing loans and borrowings	(7,581.8)	57.2	-	(214.7)	(7,739.3)
Lease liabilities	(893.3)	141.9	-	(226.2)	(977.6)
Total	<u>(8,475.1)</u>	<u>199.1*</u>	<u>-</u>	<u>(440.9)</u>	<u>(8,716.9)</u>

* Represents net cash used in financing activities excluding cash flows from dividends and interest paid.

	<u>1 Jan 2020</u>	<u>Cash Flow</u>	<u>Acquisitions (Note 3)</u>	<u>Foreign Exchange and Other Non Cash Changes</u>	<u>31 Dec 2020</u>
	€m	€m	€m	€m	€m
Interest-bearing loans and borrowings	(6,852.8)	(613.7)	(301.0)	185.7	(7,581.8)
Lease liabilities	(989.8)	168.2	-	(71.7)	(893.3)
Total	<u>(7,842.6)</u>	<u>(445.5)*</u>	<u>(301.0)</u>	<u>114.0</u>	<u>(8,475.1)</u>

* Represents net cash used in financing activities excluding cash flows from dividends and interest paid.

	<u>1 Jan 2019</u>	<u>Cash Flow</u>	<u>IFRS 16 First-time Adoption (Note 1)</u>	<u>Foreign Exchange and Other Non Cash Changes</u>	<u>31 Dec 2019</u>
	€m	€m	€m	€m	€m
Interest-bearing loans and borrowings	(6,301.4)	(531.3)	-	(20.1)	(6,852.8)
Lease liabilities	(1.2)	128.4	(899.4)	(217.6)	(989.8)
Total	<u>(6,302.6)</u>	<u>(402.9)*</u>	<u>(899.4)</u>	<u>(237.7)</u>	<u>(7,842.6)</u>

* Represents net cash used in financing activities excluding cash flows from dividends and interest paid.

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28. RECONCILIATION OF NET CASH FLOW TO MOVEMENT IN NET DEBT (continued)

An analysis of net debt before issue costs is as follows:

	1 Jan 2021	Cash Flow	Acquisitions (Note 3)	Foreign Exchange and Other Non Cash Changes	31 Dec 2021
	€m	€m	€m	€m	€m
Cash at bank and in hand.....	1,342.2	633.7	-	130.2	2,106.1
Debt due within one year	(243.9)	(113.6)	-	(57.2)	(414.7)
Debt due after more than one year	(7,386.7)	159.7	-	(143.5)	(7,370.5)
Total external borrowings	(7,630.6)	46.1	-	(200.7)	(7,785.2)
Net debt before issue costs	(6,288.4)	679.8	-	(70.5)	(5,679.1)

	1 Jan 2020	Cash Flow	Acquisitions (Note 3)*	Foreign Exchange and Other Non Cash Changes	31 Dec 2020
	€m	€m	€m	€m	€m
Cash at bank and in hand.....	982.9	428.9	-	(69.6)	1,342.2
Debt due within one year	(250.6)	76.2	(14.9)	(54.6)	(243.9)
Debt due after more than one year	(6,636.7)	(712.6)	(286.1)	248.7	(7,386.7)
Total external borrowings	(6,887.3)	(636.4)	(301.0)	194.1	(7,630.6)
Net debt before issue costs	(5,904.4)	(207.5)	(301.0)	124.5	(6,288.4)

* Excludes cash.

	1 Jan 2019	Cash Flow	Acquisitions (Note 3)	Foreign Exchange and Other Non Cash Changes	31 Dec 2019
	€m	€m	€m	€m	€m
Cash at bank and in hand.....	2,071.3	(1,104.6)	-	16.2	982.9
Debt due within one year	(63.7)	(163.2)	-	(23.7)	(250.6)
Debt due after more than one year	(6,267.0)	(351.2)	-	(18.5)	(6,636.7)
Total external borrowings	(6,330.7)	(514.4)	-	(42.2)	(6,887.3)
Net debt before issue costs	(4,259.4)	(1,619.0)	-	(26.0)	(5,904.4)

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29. RELATED PARTIES

Identity of related parties with which the Group has transacted

Related parties comprise:

- Parent entities and their subsidiaries not included within the INEOS Group Holdings S.A. group;
- Entities controlled by the shareholders of INEOS Limited, the ultimate parent company of INEOS Group Holdings S.A.;
- Key management personnel; and
- Joint ventures.

Mr JA Ratcliffe, Mr AC Currie and Mr J Reece are shareholders in INEOS Limited.

INEOS Limited (previously also INEOS AG, a subsidiary of INEOS Limited), provides operational management services to the Group through a management services agreement. During the year ended December 31, 2021 management fees of €91.6 million (2020: €90.5 million, 2019: €88.0 million) were charged to the income statement. As at December 31, 2021 amounts owed to INEOS Limited were €23.3 million (2020: €23.1 million, 2019: nil). As at December 31, 2021 there were no amounts owed to INEOS AG (2020: nil, 2019: €23.1 million). As at December 31, 2021 there were no amounts owed to INEOS Holdings AG, a wholly owned subsidiary of INEOS AG (2020: nil, 2019: €0.9 million). As at December 31, 2021 amounts owed by INEOS Holdings AG were €94.5 million (2020: €28.3 million, 2019: nil). As at December 31, 2021 amounts owed by INEOS Holdings Luxembourg S.A., a wholly owned subsidiary of INEOS Holdings AG were €15.6 million (2020: €0.3 million, 2019: €0.1 million).

In March 2019 the Group received €260.5 million of proceeds in relation to the repayment of the Group's preferential interest in INEOS Investments Partnership following the sale by INEOS Investments Partnership of its assets (shares in PQ Corporation) to INEOS Limited. The Group paid the proceeds received as part of a dividend of €296.3 million to its parent company, INEOS Holdings Luxembourg S.A..

INEOS Limited owns and controls a number of operating subsidiaries that are not included in the INEOS Group Holdings S.A. group, including INEOS Industries Limited, INEOS Enterprises Holdings Limited and the Lavéra petrochemical assets and businesses together with other French and Italian assets of INEOS O&P South.

During the year ended December 31, 2021 the Group has made sales to these subsidiaries of €1,727.1 million (2020: €1,044.7 million, 2019: €1,316.1 million), recovered net costs of €180.1 million (2020: €141.4 million, 2019: €77.9 million) and made purchases of €2,100.5 million (2020: €1,031.3 million, 2019: €1,315.2 million). As at December 31, 2021, €690.4 million (2020: €374.2 million, 2019: €471.1 million) was owed by and €288.5 million (2020: €177.4 million, 2019: €154.0 million) was owed to these subsidiaries (excluding the INEOS Upstream Limited loan).

During 2015 the Group provided a loan of \$623.7 million to INEOS Upstream Limited, a related party, in connection with its acquisition of natural gas assets in the North Sea. The loan facility is unsecured and matures in June 2024 and bears interest at 7% per annum. On September 29, 2017, INEOS Upstream Limited, a related party, acquired further natural gas assets in the North Sea through its acquisition of the entire oil and gas business of DONG Energy A/S. In connection with the DONG Acquisition, the Group advanced a loan of \$376.2 million (€315.7 million) to INEOS Upstream Limited, the proceeds of which were on lent to certain of its subsidiaries. The loan is unsecured and matures in June 2024 and bears interest at 7% per annum. There were no loan repayments during 2021 (2020: nil, 2019: nil). As at December 31, 2021 \$617.1 million (€544.6 million) (2020: \$617.1 million (€501.7 million), 2019: \$617.1 million (€550.8 million)) was outstanding under the facility.

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29. RELATED PARTIES (continued)

Identity of related parties with which the Group has transacted (continued)

INEOS Limited owns interests in a number of joint ventures that are not included in the INEOS Group Holdings S.A. group, including the French joint ventures associated with the Lavera petrochemical assets and businesses which were divested by the Group on July 1, 2014 and the refining joint ventures between PetroChina and INEOS Investments (Jersey) Limited, a related party. Previous to becoming a fully owned subsidiary on December 31, 2020 (see Note 3) the Group had a joint venture with Sasol Limited to build and operate a HDPE plant at Battleground site in Texas, USA which became operational at the end of 2017.

During the year ended December 31, 2021 the Group made no sales (2020: €0.1 million, 2019: €0.1 million), recovered net costs of €12.4 million (2020: €0.2 million, 2019: €0.5 million) and made no purchases (2020: €0.2 million, 2019: €0.2 million) from the French joint ventures. As at December 31, 2021 €0.3 million (2020: €0.1 million, 2019: €0.3 million) was owed by the French joint ventures and €0.1 million (2020: nil, 2019: €0.2 million) was owed to the French joint ventures.

The Refining joint ventures are between PetroChina and INEOS Investments (Jersey) Limited, a related party. During the year ended December 31, 2021 the Group made sales to the Refining joint ventures of €2.5 million (2020: €1.4 million, 2019: nil), recovered costs of €35.1 million (2020: €8.4 million, 2019: €8.6 million) and made purchases of €80.1 million (2020: €145.7 million, 2019: €221.4 million). As at December 31, 2021, €1.5 million (2020: €1.2 million, 2019: €0.8 million) was owed by the Refining joint ventures and €1.3 million (2020: €2.0 million, 2019: €25.5 million) was owed to the Refining joint ventures.

Before the HDPE joint venture became a fully owned subsidiary of the Group on December 31, 2020 (see Note 3) the Group recovered costs of €60.5 million (2019: €59.1 million) and made purchases of €43.6 million (2019: €47.9 million) from the HDPE joint venture. As at December 31, 2019, €5.6 million was owed by and €5.1 million was owed to the HDPE joint venture.

The Group has entered into a number of derivative contracts with INEOS UK SNS Limited and INEOS Energy Trading Limited, both related parties. The net fair value loss on these derivatives during the year ended December 31, 2021 was €109.5 million (2020: €126.2 million, 2019: €80.3 million). As at December 31, 2021, the mark to market derivative asset was €173.8 million (2020: €17.8 million, 2019: €15.3 million) and the mark to market liability was €193.2 million (2020: €88.0 million, 2019: €54.5 million) in respect of these related party derivative financial instruments (see Note 15).

In general, any trading balances with related parties are priced based on contractual arrangements and are to be settled in cash. The transactions are made on terms equivalent to those that prevail in arm's length transactions.

None (2020: none, 2019: none) of the related party balances are secured and no guarantees have been given or received. There were no provisions for doubtful debt related to any related parties as at December 31, 2021 (2020: nil, 2019: nil).

Compensation to key management personnel (including directors)

The Group defines 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 undertaking is INEOS Holdings Luxembourg S.A.. The ultimate parent undertaking at December 31, 2021 was INEOS Limited, a company registered in the Isle of Man. The ultimate controlling party is Mr JA Ratcliffe, director and majority shareholder of the ultimate parent undertaking. INEOS Group Holdings S.A. and its subsidiaries are not included within any other consolidated financial statements.

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31. ACCOUNTING ESTIMATES AND JUDGEMENTS

The Group prepares its consolidated financial statements in accordance with 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 change and in any future periods.

Key sources of estimated uncertainty

Estimates and associated assumptions are based on historical experience and other factors that the Group believe are reasonable, including assets and expected economic conditions, and in certain cases actuarial assumption. Although these estimates are based on the Group's knowledge of current events and circumstances, actual numbers may differ.

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; and
- Expected rates of return on the scheme assets.

Details of post-retirement benefits are set out in Note 21.

32. SUBSEQUENT EVENTS

The Group does not have operations in Belarus, Russia or Ukraine. During 2021 revenue generated in these countries was not material to the Group. The Group is not currently experiencing any material disruption to its operations and does not foresee any direct impact as a result of the conflict, but will continue to monitor the evolving situation closely. The conflict has led to a significant increase in energy prices; however the Group is currently successfully managing these increases by passing them onto customers through higher prices. Therefore the Group is not expecting any material indirect impact on its operations or performance as a result of the conflict, but is monitoring this closely.