Independent auditors' report to the members of Johnson Matthey Plc

Report on the audit of the financial statements

Opinion

In our opinion:

- Johnson Matthey Plc's group financial statements and company financial statements (the "financial statements") give a true and fair view of the state of the group's and of the company's affairs as at 31 March 2022 and of the group's loss and the group's cash flows for the year then ended;
- the group financial statements have been properly prepared in accordance with UK-adopted international accounting standards;
- the company financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law); and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

We have audited the financial statements, included within the Annual Report, which comprise: the Consolidated and Parent Company Balance Sheets as at 31 March 2022; the Consolidated Income Statement and Consolidated Statement of Total Comprehensive Income; the Consolidated Cash Flow Statement and the Consolidated and Parent Company Statement of Changes in Equity for the year then ended; and the notes to the financial statements, which include a description of the significant accounting policies.

Our opinion is consistent with our reporting to the Audit Committee.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities under ISAs (UK) are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We remained independent of the group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to listed public interest entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

To the best of our knowledge and belief, we declare that non-audit services prohibited by the FRC's Ethical Standard were not provided.

Other than those disclosed in note 4, we have provided no non-audit services to the company in the period under audit.

Our audit approach

Overview

Audit scope

- We conducted a full scope audit or specified procedures at 63 business units which together account for 84% of group revenue and more than 75% of group underlying profit before tax from continuing operations.
- We maintained regular contact with our component teams and evaluated the outcome of their audit work.

Key audit matters

- Carrying value of goodwill (group and parent)
- Refinery metal accounting (group and parent)
- Divestment of the Health business (group and parent)
- Battery Materials exit (group and parent)
- Uncertain tax provisions (group and parent)

Materiality

- Overall group materiality: £21.8 million (2021: £22.6 million) based on approximately 5% of the three year average profit before tax from continuing operations, adjusted for loss on disposal of businesses, gains and losses on significant legal proceedings, major impairment and restructuring charges.
- Overall company materiality: £60 million (2021: £70 million) based on approximately 1% of total assets. However the materiality is capped at £20 million (2021: £20 million) for the purpose of the audit of the consolidated financial statements, this being the maximum allocation of group materiality to a component.
- Performance materiality: £16.3 million (2021: £16.9 million) (group) and £15 million (2021: £15 million) (company).

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

This is not a complete list of all risks identified by our audit.

Divestment of the Health business and Battery Materials exit are new key audit matters this year. COVID-19, Claims, uncertainties and other provisions, and Carrying value of Property, plant and equipment and Other intangible assets associated with the transformation programme, which were key audit matters last year, are no longer included because they were of less significance to the audit in the current year. We have also removed the capitalised development costs as these related to Health and Battery Materials which are now considered as separate key audit matters.

Key audit matter

Carrying value of goodwill (group and parent)

Refer to the Significant issues considered by the Audit Committee within the Audit Committee Report and notes 1, 5 and 12 to the financial statements.

The group holds goodwill of £366 million (2021: £554 million) at 31 March 2022. Of which, £113 million (2021: £115 million) is held within the parent company.

The group has significant goodwill arising from the acquisition of businesses and the carrying value is dependent on the financial performance of the cash generating unit (CGU) to which it relates.

The impairment assessments prepared by management reflect its best estimates of future cashflows. These estimates contain significant uncertainty and are inherently judgemental in nature, where changes in the key assumptions can result in materially different impairment charges or available headroom. As set out in note 1 management has considered the impacts of climate change in their models. This is therefore an area of focus in our audit procedures.

In the year, an impairment charge of £189 million was recorded against goodwill (Health: £144 million and Diagnostic Services: £45 million).

The goodwill of £144 million held in the two CGUs in the Health business (Generics and Innovators) was fully impaired. This arose as a result of the planned divestment of the Health business following the announcement in December 2021, as the fair value of the proceeds less costs to dispose was lower than the carrying value. See also the key audit matter on 'Divestment of the Health business' below.

Goodwill of £45 million held in the Diagnostic Services CGU was impaired as a result of lower growth forecasts and a higher discount rate applied to future cashflows in management's value in use models, which reflect the faster paced transition to non-carbon intensive industries and management's strategic decision that the business is 'non-core'.

Management's assessment of the goodwill in the other CGUs concluded that no impairment was required.

Management included disclosures to explain its key judgements and estimates as part of notes 1 and 5.

How our audit addressed the key audit matter

We obtained management's value in use goodwill impairment models and agreed the forecast cash flows to board-approved budgets, assessed how these budgets are compiled, confirmed data accuracy and understood key related judgements and estimates.

We assessed management's historical forecasting accuracy by comparing the prior year forecasts with actual results. This informed our independent sensitivity analysis.

We performed work over each material CGU. The nature and extent of work was commensurate with the level of headroom and sensitivity of the CGU to impairment. Our testing was focused on the key assumptions in the board-approved three year forecasts and we corroborated the assumptions to supporting evidence which included both internal and external sources of evidence. In addition, we assessed the appropriateness and impact of the specific growth assumptions applied by management for the period after the year three forecast but before a long term growth rate is applied (typically year ten).

Management has included certain key assumptions relating to climate change. These include restricting the useful economic life applied in modelling Heavy Duty Catalysts to 2040, and the application of a negative growth rate from 2033. Working with our valuation experts we have considered external market outlooks and information on emission legislation to corroborate these assumptions.

We engaged our valuations experts to assess the long term growth rate and discount rate for each CGU by comparison with third party information, past performance and relevant risk factors. Our procedures also included considering the overall level of risk in the future cash flow projections.

We audited the £45 million impairment charge on the Diagnostic Services CGU. Our procedures included testing the basis for management's revised business plans and expectations in line with the group's latest strategy and considering the latest industry outlooks used by management.

We tested the mathematical integrity of the forecasts and of the value in use model, audited the allocation of central costs to the CGUs and agreed the carrying values in management's impairment models to underlying accounting records.

We assessed management's sensitivity analysis and performed our own independent sensitivity analysis to assess whether a reasonable downside change in the key assumptions could give rise to a material impairment.

Based on the procedures performed, we noted no material issues arising from our work.

Key audit matter	How our audit addressed the key audit matter
Refinery metal accounting (group and parent) Refer to the Significant issues considered by the Audit Committee within the Audit Committee Report and note 1 to the financial statements. As part of its refining activities the group processes a significant amount of metal on behalf of third parties, whereby the group must return pre-agreed recoverable quantities of refined metal to those parties at an agreed date. Any metal in excess of this pre-agreed quantity is retained by the group. As such, the group makes an estimate of how much metal it will recover as part of its refining operations. The majority of metal processed at refineries is owned by customers and is not held on the financial balance sheet of the group. As such, the group performs a metal balance sheet reconciliation to ensure quantities of precious metals held at year-end are appropriately understood, classified as either owned by Johnson Matthey or the customer and reconciled to its financial position. This ensures that only the group-owned inventory is recorded on the balance sheet and that the price allocated to this owned inventory is at the lower of cost and net realisable value. During the refining process there are a series of complex estimates including: i. Estimation of the level of metal contained in the carrier material entering the refining process, the refined metal that leaves the refining process, and the residual metal in the refining process at year-end; ii. Estimates of the process losses of precious metals that may be lost during the refining and fabrication process, and the adequacy of these provisions; iii. Estimates of the metal in the refinery process as informed by refinery stocktakes, and the subsequent sampling and assaying to assess the precious metal content in stocktake samples; and iv. Estimates of the net realisable value of unhedged metal held at year-end. Each of these estimates impacts different areas of the audit. The refining process and its associated estimates are an area of focus for our audit due to the inherent complexity of the accounting and amount of metal processed.	We evaluated the design and operation of key controls at the main refining locations over refinery stocktakes and metal assaying procedures. We tested that the metal balance sheet was prepared and reviewed on a monthly basis. We tested the classification of precious metals at year-end on the metal balance sheet, to determine if metal was owned by the group or the customer. Our procedures included sending confirmations to customers, and testing the balance of customer metal that was in the refining process, but not contractually due. We assessed management's policy for recognising stocktake gains and losses arising from stocktakes. We attended physical stock counts at sites where these were performed by management. The purpose was to verify the existence of inventory and adherence to the group's stocktake processes, and the reasonableness of stocktake gains and losses at these sites. We assessed the underlying controls that have been implemented by management, to monitor potential inventory gains or losses through the refining process and stocktake results, to assess the likelihood and quantum of process losses (if any) of metal between the date of the stocktake and the year-end date. We assessed process loss provisions compared to historical metal gain revenue and refinery stocktake results. We tested that all unhedged metal was held at the lower of cost and net realisable value, on an individual metal by metal methodology, with reference to external metal price data. We considered the adequacy of the group's disclosures about the degree of estimation involved in arriving at the value of metal inventory. Based on the procedures performed, we noted no material issues arising from our work.

Key audit matter	How our audit addressed the key audit matter
Divestment of the Health business (group and parent) Refer to the Significant issues considered by the Audit Committee within the Audit Committee Report and primarily notes 1 and 27. The impact of presenting Health as Assets held for sale and Discontinued operations has a pervasive impact across the primary statements and the Notes and management has included footnotes throughout the disclosures to highlight and explain the impact. Following the announcement in December 2021 of the planned divestment of the Health business, the associated assets and liabilities were reclassified and presented as held for sale as at 31 March 2022 and the results for this business have been presented as discontinued operations. Upon reclassifying the assets and liabilities as held for sale, management has performed an impairment assessment of the Health business. As the fair value of the proceeds less costs to dispose was lower than the carrying value, an impairment charge of £228 million was recorded. This was allocated in line with IAS 36; first £144 million against Goodwill (notes 5 and 12), then pro-rata against the other assets held in the Health business: £55 million against Property, plant and equipment (note 11), £23 million against Other intangible assets (note 13), £5 million against Inventories (note 16) and £1 million against Right-of-use assets (note 25). Given the size and importance of the disposal of Health, and the impairment charge recorded, this was therefore an area of focus for our audit.	We have reviewed the sale agreements for the divestment of the Health business and agree with management's conclusion that the criteria in IFRS 5 Non-current Assets Held for Sale and Discontinued Operations – including that the sale is highly probable – are met. We also agree that the Health business meets the definition of a discontinued operation given its size and importance to the group. We have assessed management's presentation of Health as a discontinued operation and asset held for sale in the disclosures and are satisfied these are in accordance with IFRS. We have audited management's assessment of the fair value less costs to sell. We have agreed the cash amounts to be received to the underlying contracts; we have assessed management's calculation of the vendor loan note according to the underlying contract; and, together with our valuations experts, we have assessed the valuation of the group's 30% stake in the new business. We have confirmed the resulting impairment charge has been recorded appropriately and that the disclosures are compliant with IFRS.

Key audit matter	How our audit addressed the key audit matter
Battery Materials exit (group and parent) Refer to the Significant issues considered by the Audit Committee within the Audit Committee Report and primarily notes 1, 6, 11, 13 and 25. As a result of the announcements of the intention to exit Battery Materials in November 2021 and January 2022, an impairment charge of £325 million (note 6) has been recorded. The impairment charge comprises Property, plant and equipment (£237 million); Right of use assets (£4 million); Other intangible assets (£78 million); and Trade and other receivables (£6 million). In addition, a restructuring charge of £38 million was recorded for exit costs including redundancies. The impairment recognised is based on management's best estimate of the recoverable amount of the assets at 31 March 2022 based on selling certain parts of the business to an identified third party. Given the magnitude of the impairment and associated exit costs, and the estimation uncertainty related to the recoverable value and exit costs this has been a key area of audit focus.	To audit the impairment charge we obtained evidence of the timing of the decision to exit the Battery Materials business and expected recoverable value. To support the recoverable amount we obtained the purchase agreement which included the agreed purchase price and obtained evidence of the initial consideration paid. The exit costs comprise redundancy provisions and the settlement of contractual liabilities and closure and abandonment costs. We have obtained evidence of management's intentions with respect to closure of the sites, including correspondence with employees. Where material, we audited the restructuring and other costs by corroborating key assumptions used in management estimates as well as testing the mathematical accuracy of the models or by testing the actual costs incurred. We have confirmed the resulting impairment charge and exit costs have been recorded appropriately and that the disclosures are compliant with IFRS.

Key audit matter	How our audit addressed the key audit matter
Uncertain tax provisions (group and parent) Refer to the Significant issues considered by the Audit Committee and note 1 to the financial statements. The group operates in a number of international jurisdictions, and as a result there is risk of uncertain tax exposures arising around the group, as well as heightened risk around estimates in determining the tax effect of cross border transactions including transfer pricing arrangements. As at 31 March 2022 the group had provisions for uncertain tax liabilities of £103 million (2021: £102 million). Management's estimate of the range of possible outcomes is an increase in those liabilities by £83 million (2021: £97 million) to a decrease of £93 million (2021: £78 million). Where the precise impact of the tax laws and regulations on taxes payable with respect to profit arising in those jurisdictions is unclear, the group seeks to make reasonable estimates to determine the most likely amount in a range of possible outcomes. There is inherent judgement and estimation uncertainty involved in determining provisions for uncertain tax positions, as described by management in the accounting policies to the financial statements. Our audit focused on the most significant of exposures based on both the provision recorded and maximum possible exposure.	We engaged our tax specialists in support of our audit of tax and obtained an understanding of the group's tax strategy and risks. We recalculated the group's tax provisions and determined whether the treatments adopted were in line with the group's tax policies and had been applied consistently. We evaluated the key underlying assumptions and judgements, including considering the status of tax authority audits and enquiries through examining the latest correspondence and enquiring of management, and where applicable management's advisors. We considered the basis and support in particular for provisions not subject to tax audit, in comparison with our experience of similar situations. We discussed the recognition of specific uncertain tax positions with third-party tax advisors appointed by management to verify the key assumptions, judgements and likely outcome with respect to specific uncertain tax positions recognised. We confirmed the appropriateness of management's application of either a single best estimate, or a weighted average range of outcomes, for each exposure, as driven by the facts and circumstances under IFRIC 23. We evaluated the consistency of management's approach to identifying triggering events to reassess or record a provision for an exposure. We also evaluated the consistency of management's approach to establishing or changing prior provision estimates and validated that changes in provisions established in previous periods reflected a change in facts and circumstances. We are satisfied that the group's provisions with respect to uncertain tax matters have been prepared on a reasonable basis that represent management's current best estimate of the most likely outcome. We consider the disclosures with respect to tax matters to be appropriate.

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the group and the company, the accounting processes and controls, and the industry in which they operate.

The group is structured across four sectors: Clean Air, Efficient Natural Resources, Health and Other markets, as well as the Corporate central unit.

The financial statements are a consolidation of approximately 310 business units. We have identified each individual business unit, or a series of business units where they map to a single legal statutory entity, as a component. These components comprise the group's operating businesses and holding companies across the four sectors and Corporate.

Based on our risk and materiality assessments, we determined which components required an audit of their complete financial information having considered the relative significance of each entity to the group, locations with significant inherent risks and the overall coverage obtained over each material line item in the consolidated financial statements.

We identified 50 business units which, in our view, required an audit of their complete financial information, due to size or risk characteristics. We performed specified procedures over certain line items that were most material to the group (revenue, cost of sales, accounts receivable, cash, inventory) and tested manual journal entries. The residual line items not subject to audit were not material in the context of the group audit.

In addition to the business units in full scope, we performed specified procedures at 13 business units over specific financial statement line items including revenue, trade and other receivables and deferred income, cash, inventory, metal inventory, accruals, fixed assets and depreciation, cost of sales and operating expenses. This ensured that appropriate audit procedures were performed to achieve sufficient coverage over these financial statement line items.

The total 63 in-scope business units are located in numerous countries around the world. We used local teams in these countries to perform the relevant audit procedures. Of these, 9 business units have been determined to be financially significant based on their contribution to the group. These financially significant components are located in the UK, China and North Macedonia.

The group consolidation, financial statement disclosures and corporate functions were audited by the group audit team. This included our work over the consolidation, litigation provisions, centrally recognised tax balances, goodwill, post-retirement benefits, earnings per share and treasury related balances. This scope of work, together with additional procedures performed at the group level, accounted for 84% of group revenue and more than 75% of group underlying profit before taxation from continuing operations. This provided the evidence we needed for our opinion on the consolidated financial statements taken as a whole. This was before considering the contribution to our audit evidence from performing audit work at the group level, including disaggregated analytical review procedures, which covers certain of the group's smaller and lower risk components that were not directly included in our group audit scope.

Climate change

Climate change is expected to present both risks and opportunities for the group. As explained in the Sustainability section of the Strategic Report, the group is mindful of its impact on the environment and is focussed on ways to reduce climate-related impacts as management continues to develop its plans towards a net zero pathway by 2040. Management's climate change initiatives and commitments will impact the group in a variety of ways, and while the group has started to quantify some of the impacts that may arise on its net zero pathway, the future financial impacts are clearly uncertain given the medium to long term horizon. Disclosure of the impact of climate change risk based on management's current assessment is incorporated in the Task Force on Climate-related Financial Disclosures ('TCFD') section of the Annual Report.

As part of our audit, we made enquiries of management to understand the extent of the potential impact of climate change on the group's business and the financial statements, including reviewing management's climate change risk assessment which was prepared with support from an external expert. We used our knowledge of the group and we engaged with our climate change experts to evaluate the risk assessment performed by management.

We assessed that the key areas in the financial statements which are more likely to be materially impacted by climate change are those areas that are based on future cash flows. As a result, we particularly considered how climate change risks and the impact of climate commitments made by the group would impact the assumptions made in the forecasts prepared by management that are used in the group's impairment analysis (see also key audit matter on Carrying value of goodwill) and for going concern purposes. We challenged how management had considered longer term physical risks such as severe weather related impacts, and shorter-term transitional risks such as the introduction of carbon taxes. Our procedures did not identify any material impact on our audit for the year ended 31 March 2022. We also checked the consistency of the disclosures in the TCFD section of the Annual Report with the relevant financial statement disclosures, including note 1 and the Going concern section of the Accounting policies, and with our understanding of the business and knowledge obtained in the audit.

We confirmed with management and the Audit Committee that the estimated financial impacts of climate change will be reassessed prospectively and our expectation is that climate change disclosures will evolve as the understanding of the actual and potential impacts on the group's future operations are established with greater certainty.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Financial statements – group	Financial statements – company
Overall materiality	£21.8 million (2021: £22.6 million).	£60 million (2021: £70 million).
How we determined it	approximately 5% of the three year average profit before tax from continuing operations, adjusted for loss on disposal of businesses, gains and losses on significant legal proceedings, major impairment and restructuring charges	approximately 1% of total assets. However the materiality is capped at £20 million (2021: £20 million) for the purpose of the audit of the consolidated financial statements, this being the maximum allocation of group materiality to a component
Rationale for benchmark applied	Adjusted (underlying) profit before tax from continuing operations is used as the materiality benchmark excluding amortisation of acquired intangibles. Management uses this measure as it believes that it reflects the underlying performance of the group and this is how the directors and key management personnel are measured on their performance. We did not adjust profit before tax to add back amortisation of acquired intangibles as in our view this is a recurring item. In 2022, the Health business is held for sale, and consequently the materiality benchmark has been adjusted to exclude the Health results.	We considered total assets to be an appropriate benchmark for the parent company given that, whilst it does include trading businesses, it is the ultimate holding company, incurs corporate costs and enters into financing on behalf of the group. The materiality level was capped at £20 million given overall group materiality for the purposes of the audit of the consolidated financial statements, this being the maximum allocation of group materiality to a component.

For each component in the scope of our group audit, we allocated a materiality that is less than our overall group materiality. The range of materiality allocated across components was between £1 million and £20 million. Certain components were audited to a local statutory audit materiality that was also less than our overall group materiality.

We use performance materiality to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds overall materiality. Specifically, we use performance materiality in determining the scope of our audit and the nature and extent of our testing of account balances, classes of transactions and disclosures, for example in determining sample sizes. Our performance materiality was 75% (2021: 75%) of overall materiality, amounting to £16.3 million (2021: £16.9 million) for the group financial statements and £15 million (2021: £15 million) for the company financial statements.

In determining the performance materiality, we considered a number of factors – the history of misstatements, risk assessment and aggregation risk and the effectiveness of controls – and concluded that an amount at the upper end of our normal range was appropriate.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above £1 million (group audit) (2021: £1.1 million) and £1 million (company audit) (2021: £1.1 million) as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Conclusions relating to going concern

Our evaluation of the directors' assessment of the group's and the company's ability to continue to adopt the going concern basis of accounting included:

- Evaluation of management's base case and downside case scenarios, understanding and evaluating the key assumptions, including assumptions related to the ongoing impacts of COVID-19 and other macro-economic factors;
- Validation that the cash flow forecasts used to support management's impairment, going concern and viability assessments were consistent;
- Assessment of the historical accuracy and reasonableness of management's forecasting;
- Consideration of the group's available financing and debt maturity profile;
- Testing of the mathematical integrity of management's liquidity headroom, covenant compliance, sensitivity and stress testing calculations;
- Assessment of the reasonableness of management's planned or potential mitigating actions; and
- Review of the related disclosures in the Annual Report.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the group's and the company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

However, because not all future events or conditions can be predicted, this conclusion is not a guarantee as to the group's and the company's ability to continue as a going concern.

In relation to the directors' reporting on how they have applied the UK Corporate Governance Code, we have nothing material to add or draw attention to in relation to the directors' statement in the financial statements about whether the directors considered it appropriate to adopt the going concern basis of accounting.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information, which includes reporting based on the Task Force on Climate-related Financial Disclosures (TCFD) recommendations. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. 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 that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic report and Directors' report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on our work undertaken in the course of the audit, the Companies Act 2006 requires us also to report certain opinions and matters as described below.

Strategic report and Directors' report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic report and Directors' report for the year ended 31 March 2022 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements.

In light of the knowledge and understanding of the group and company and their environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic report and Directors' report.

Directors' Remuneration

In our opinion, the part of the Annual Report on Remuneration to be audited has been properly prepared in accordance with the Companies Act 2006.

Corporate governance statement

The Listing Rules require us to review the directors' statements in relation to going concern, longer-term viability and that part of the corporate governance statement relating to the company's compliance with the provisions of the UK Corporate Governance Code specified for our review. Our additional responsibilities with respect to the corporate governance statement as other information are described in the Reporting on other information section of this report.

Based on the work undertaken as part of our audit, we have concluded that each of the following elements of the corporate governance statement is materially consistent with the financial statements and our knowledge obtained during the audit, and we have nothing material to add or draw attention to in relation to:

- The directors' confirmation that they have carried out a robust assessment of the emerging and principal risks;
- The disclosures in the Annual Report that describe those principal risks, what procedures are in place to identify emerging risks and an explanation of how these are being managed or mitigated;
- The directors' statement in the financial statements about whether they considered it appropriate to adopt the going concern basis of accounting in preparing them, and their identification of any material uncertainties to the group's and company's ability to continue to do so over a period of at least twelve months from the date of approval of the financial statements;
- The directors' explanation as to their assessment of the group's and company's prospects, the period this assessment covers and why the period is appropriate; and
- The directors' statement as to whether they have a reasonable expectation that the company will be able to continue in operation and meet its liabilities as they fall due over the period of its assessment, including any related disclosures drawing attention to any necessary qualifications or assumptions.

Our review of the directors' statement regarding the longer-term viability of the group was substantially less in scope than an audit and only consisted of making inquiries and considering the directors' process supporting their statement; checking that the statement is in alignment with the relevant provisions of the UK Corporate Governance Code; and considering whether the statement is consistent with the financial statements and our knowledge and understanding of the group and company and their environment obtained in the course of the audit.

In addition, based on the work undertaken as part of our audit, we have concluded that each of the following elements of the corporate governance statement is materially consistent with the financial statements and our knowledge obtained during the audit:

- The directors' statement that they consider the Annual Report, taken as a whole, is fair, balanced and understandable, and provides the information necessary for the members to assess the group's and company's position, performance, business model and strategy;
- The section of the Annual Report that describes the review of effectiveness of risk management and internal control systems; and
- The section of the Annual Report describing the work of the Audit Committee.

We have nothing to report in respect of our responsibility to report when the directors' statement relating to the company's compliance with the Code does not properly disclose a departure from a relevant provision of the Code specified under the Listing Rules for review by the auditors.

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Statement of directors' responsibilities in respect of the Annual Report and Accounts, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the group's and the company'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 directors either intend to liquidate the group or the company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) 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 financial statements.

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud, is detailed below.

Based on our understanding of the group and industry, we identified that the principal risks of non-compliance with laws and regulations related to international tax regulations, environmental regulations, health and safety regulations (EHS), and anti bribery and corruption laws, and we considered the extent to which non-compliance might have a material effect on the financial statements. We also considered those laws and regulations that have a direct impact on the financial statements such as the Companies Act 2006. We evaluated management's incentives and opportunities for fraudulent manipulation of the financial statements (including the risk of override of controls), and determined that the principal risks were related to posting inappropriate journal entries, management bias in accounting estimates, expected credit losses, timing of recognition of litigation provisions and metal gains and losses. The group engagement team shared this risk assessment with the component auditors so that they could include appropriate audit procedures in response to such risks in their work. Audit procedures performed by the group engagement team and/

or component auditors included:

- Discussions with management, internal audit and the group's legal advisors, and the head of ethics and compliance including consideration of known or suspected instances of non-compliance with laws and regulations and fraud;
- Reading the minutes of board meetings and the Ethics Committee, and assessment of "Speak Up" matters through the ethics reporting line and the results of management's investigation into these matters;
- Reviewing financial statement disclosures to supporting documentation to assess compliance with applicable laws and regulations;
- Challenging management's significant judgements and estimates in particular those relating to the carrying value of goodwill, other intangibles and other assets, post-employment benefits, tax provisions, deferred tax assets, refining processes and stocktakes, climate change, metal accounting and provisions and contingent liabilities; and
- Identifying and testing manual journal entries, in particular any journal entries posted with unusual account combinations, and all material consolidation journals.

There are inherent limitations in the audit procedures described above. We are less likely to become aware of instances of non-compliance with laws and regulations that are not closely related to events and transactions reflected in the financial statements. Also, the risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion.

Our audit testing might include testing complete populations of certain transactions and balances, possibly using data auditing techniques. However, it typically involves selecting a limited number of items for testing, rather than testing complete populations. We will often seek to target particular items for testing based on their size or risk characteristics. In other cases, we will use audit sampling to enable us to draw a conclusion about the population from which the sample is selected.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

Use of this report

This report, including the opinions, has been prepared for and only for the company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Other required reporting

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not obtained all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the company, or returns adequate for our audit have not been received from branches not visited by us; or
- certain disclosures of directors' remuneration specified by law are not made; or
- the company financial statements and the part of the Annual Report on Remuneration to be audited are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

Appointment

Following the recommendation of the Audit Committee, we were appointed by the members on 18 July 2018 to audit the financial statements for the year ended 31 March 2019 and subsequent financial periods. The period of total uninterrupted engagement is four years, covering the years ended 31 March 2019 to 31 March 2022.

Other matter

In due course, as required by the Financial Conduct Authority Disclosure Guidance and Transparency Rule 4.1.14R, these financial statements will form part of the ESEF-prepared annual financial report filed on the National Storage Mechanism of the Financial Conduct Authority in accordance with the ESEF Regulatory Technical Standard ('ESEF RTS'). This auditors' report provides no assurance over whether the annual financial report will be prepared using the single electronic format specified in the ESEF RTS.

Mark Gill (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London

26 May 2022

Consolidated Income Statement

for the year ended 31st March 2022

	Notes	2022 £ million	2021 £ million*
Revenue	2,3	**16,025**	**15,435**
Cost of sales		(14,971)	(14,481)
Gross profit		**1,054**	**954**
Distribution costs		(101)	(103)
Administrative expenses		(400)	(377)
Profit / (loss) on disposal of businesses	28	106	(1)
Amortisation of acquired intangibles	4	(6)	(10)
Gains and losses on significant legal proceedings	4	42	–
Major impairment and restructuring charges	6	(440)	(154)
Operating profit	2,4	**255**	**309**
Finance costs	8	(101)	(158)
Finance income	8	41	73
Profit before tax from continuing operations		**195**	**224**
Tax expense	9	(79)	(30)
Profit for the year from continuing operations		**116**	**194**
(Loss) / profit after tax from discontinued operations	27	(217)	11
(Loss) / profit for the year		**(101)**	**205**

		pence	pence
(Loss) / earnings per ordinary share			
Basic	10	**(52.6)**	106.5
Diluted	10	**(52.6)**	106.4
Earnings per ordinary share from continuing operations			
Basic	10	**60.9**	100.9
Diluted	10	**60.8**	100.8

* Restated to reflect classification of the Health segment as discontinued operations (see note 27).

The notes on pages 154 to 213 form an integral part of the accounts.

Consolidated Statement of Total Comprehensive Income

for the year ended 31st March 2022

	Notes	2022 £ million	2021 £ million*
(Loss) / profit for the year		**(101)**	**205**
Other comprehensive income			
Items that will not be reclassified to the income statement			
Remeasurements of post-employment benefit assets and liabilities	24	177	(141)
Fair value (losses) / gains on equity investments at fair value through other comprehensive income		(5)	5
Tax on items that will not be reclassified to the income statement[1]		(35)	28
Total items that will not be reclassified to the income statement		**137**	**(108)**
Items that may be reclassified to the income statement			
Exchange differences on translation of foreign operations	26	75	(144)
Exchange differences on translation of discontinued foreign operations	26, 27	5	(18)
Amounts (charged) / credited to hedging reserve		(36)	3
Fair value (losses) / gains on net investment hedges		(2)	12
Tax on above items taken directly to or transferred from equity[2]		10	–
Total items that may be reclassified to the income statement		**52**	**(147)**
Other comprehensive income / (expense) for the year		**189**	**(255)**
Total comprehensive income / (expense) for the year		**88**	**(50)**
Total comprehensive income / (expense) for the year arises from:			
Continuing operations		300	(43)
Discontinued operations	27	(212)	(7)
		88	**(50)**

1. The tax (charge) / credit on other comprehensive income / (expense) of £(35) million (2021: £28 million) relates to remeasurements of post-employment benefit assets and liabilities.
2. The tax credit on other comprehensive income that may be reclassified to the income statement of £10 million (2021: £nil) relates to tax on amounts charged to hedging reserve and tax on exchange differences on translation of foreign operations.

* Restated to reflect classification of the Health segment as discontinued operations (see note 27).

The notes on pages 154 to 213 form an integral part of the accounts.

Consolidated and Parent Company Balance Sheets

as at 31st March 2022

	Notes	Group 2022 £ million	Group 2021 £ million	Parent company 2022 £ million	Parent company 2021 £ million
Assets					
Non-current assets					
Property, plant and equipment	11	1,238	1,424	322	307
Right-of-use assets	25	61	74	7	15
Goodwill	12	366	554	113	115
Other intangible assets	13	267	359	233	265
Investments in subsidiaries	14	–	–	1,921	1,921
Investments in joint ventures and associates		2	2	–	–
Investments at fair value through other comprehensive income	30	45	53	–	–
Other receivables	17	42	50	1,598	1,315
Interest rate swaps	15	11	20	11	20
Deferred tax assets	23	98	140	2	52
Post-employment benefit net assets	24	352	194	351	186
Total non-current assets		**2,482**	**2,870**	**4,558**	**4,196**
Current assets					
Inventories	16	1,549	1,814	566	579
Current tax assets		18	13	31	–
Trade and other receivables	17	1,796	2,422	1,941	2,297
Cash and cash equivalents	1	391	581	200	502
Interest rate swaps	15	1	–	1	–
Other financial assets	18	27	44	27	45
Assets classified as held for sale	27	402	–	17	–
Total current assets		**4,184**	**4,874**	**2,783**	**3,423**
Total assets		**6,666**	**7,744**	**7,341**	**7,619**

	Notes	Group 2022 £ million	Group 2021 £ million	Parent company 2022 £ million	Parent company 2021 £ million
Liabilities					
Current liabilities					
Trade and other payables	19	(2,563)	(3,325)	(4,258)	(4,537)
Lease liabilities	25	(10)	(11)	(3)	(3)
Current tax liabilities		(97)	(147)	–	(36)
Cash and cash equivalents – bank overdrafts		(37)	(36)	(34)	(25)
Borrowings and related swaps	20	(265)	(26)	(255)	–
Other financial liabilities	18	(44)	(18)	(46)	(22)
Provisions	22	(56)	(35)	(162)	(187)
Liabilities classified as held for sale	27	(80)	–	(5)	–
Total current liabilities		**(3,152)**	**(3,598)**	**(4,763)**	**(4,810)**
Non-current liabilities					
Borrowings and related swaps	20	(899)	(1,252)	(899)	(1,252)
Lease liabilities	25	(40)	(51)	(7)	(13)
Deferred tax liabilities	23	(18)	(28)	–	–
Interest rate swaps	15	(2)	–	(2)	–
Employee benefit obligations	24	(72)	(98)	(27)	(14)
Other financial liabilities	18	(12)	–	(12)	–
Provisions	22	(28)	(27)	(16)	(18)
Other payables	19	(2)	(5)	(268)	(268)
Total non-current liabilities		**(1,073)**	**(1,461)**	**(1,231)**	**(1,565)**
Total liabilities		**(4,225)**	**(5,059)**	**(5,994)**	**(6,375)**
Net assets		**2,441**	**2,685**	**1,347**	**1,244**
Equity					
Share capital	26	218	221	218	221
Share premium		148	148	148	148
Shares held in employee share ownership trust (ESOT)		(24)	(29)	(24)	(29)
Other reserves	26	50	–	(19)	4
Retained earnings[1]		2,049	2,345	1,024	900
Total equity		**2,441**	**2,685**	**1,347**	**1,244**

1. The parent company's profit for the year is £334 million (2021: £60 million).

The accounts were approved by the Board of Directors on 26th May 2022 and signed on its behalf by:

L Condon
S Oxley
Directors

The notes on pages 154 to 213 form an integral part of the accounts.

Consolidated Cash Flow Statement

for the year ended 31st March 2022

	Notes	2022 £ million	2021 £ million*
Cash flows from operating activities			
Profit before tax from continuing operations		195	224
(Loss) / profit before tax from discontinued operations	27	(239)	14
Adjustments for:			
(Profit) / loss on disposal of businesses	28	(106)	1
Depreciation		151	158
Amortisation		39	32
Impairment losses		632	122
Loss on sale of non-current assets		2	4
Share-based payments		8	9
Decrease in inventories		123	19
Decrease / (increase) in receivables		588	(430)
(Decrease) / increase in payables		(783)	607
Increase in provisions		25	41
Contributions in excess of employee benefit obligations charge		(2)	(7)
Changes in fair value of financial instruments		19	(45)
Net finance costs		60	85
Income tax paid		(107)	(65)
Net cash inflow from operating activities		**605**	**769**
Cash flows from investing activities			
Interest received		32	66
Purchases of property, plant and equipment		(358)	(304)
Purchases of intangible assets		(95)	(77)
Proceeds from sale of non-current assets		1	5
Net proceeds from sale of businesses		160	19
Net cash outflow from investing activities		**(260)**	**(291)**

	Notes	2022 £ million	2021 £ million*
Cash flows from financing activities			
Purchase of treasury shares	26	(155)	–
Proceeds from borrowings		9	368
Repayment of borrowings		(140)	(298)
Dividends paid to equity shareholders	26	(139)	(99)
Interest paid		(111)	(159)
Principal element of lease payments		(14)	(14)
Net cash outflow from financing activities		**(550)**	**(202)**
Change in cash and cash equivalents		**(205)**	**276**
Exchange differences on cash and cash equivalents		6	(4)
Cash and cash equivalents at beginning of year		545	273
Cash and cash equivalents at end of year		**346**	**545**
Cash and deposits		254	119
Money market funds		137	462
Bank overdrafts		(37)	(36)
Bank overdrafts transferred to liabilities classified as held for sale	27	(8)	–
Cash and cash equivalents		**346**	**545**

* For cash flows of discontinued operations see note 27.

FINANCIAL STATEMENTS

The notes on pages 154 to 213 form an integral part of the accounts.

Consolidated Statement of Changes in Equity

for the year ended 31st March 2022

	Share capital £ million	Share premium account £ million	Shares held in ESOT £ million	Other reserves (note 26) £ million	Retained earnings £ million	Total equity £ million
At 1st April 2020	221	148	(32)	142	2,345	2,824
Profit for the year	–	–	–	–	205	205
Remeasurements of post-employment benefit assets and liabilities	–	–	–	–	(141)	(141)
Fair value gains on investments at fair value through other comprehensive income	–	–	–	5	–	5
Exchange differences on translation of foreign operations	–	–	–	(162)	–	(162)
Amounts credited to hedging reserve	–	–	–	3	–	3
Fair value gains on net investment hedges taken to equity	–	–	–	12	–	12
Tax on other comprehensive income	–	–	–	–	28	28
Total comprehensive (expense) / income	–	–	–	(142)	92	(50)
Dividends paid (note 26)	–	–	–	–	(99)	(99)
Share-based payments	–	–	–	–	16	16
Cost of shares transferred to employees	–	–	3	–	(10)	(7)
Tax on share-based payments	–	–	–	–	1	1
At 31st March 2021	221	148	(29)	–	2,345	2,685
Loss for the year	–	–	–	–	(101)	(101)
Remeasurements of post-employment benefit assets and liabilities	–	–	–	–	177	177
Fair value losses on investments at fair value through other comprehensive income	–	–	–	(5)	–	(5)
Exchange differences on translation of foreign operations	–	–	–	80	–	80
Amounts charged to hedging reserve	–	–	–	(36)	–	(36)
Fair value losses on net investment hedges taken to equity	–	–	–	(2)	–	(2)
Tax on other comprehensive income	–	–	–	10	(35)	(25)
Total comprehensive income	–	–	–	47	41	88
Dividends paid (note 26)	–	–	–	–	(139)	(139)
Purchase of treasury shares (note 26)	(3)	–	–	3	(200)	(200)
Share-based payments	–	–	–	–	15	15
Cost of shares transferred to employees	–	–	5	–	(13)	(8)
At 31st March 2022	**218**	**148**	**(24)**	**50**	**2,049**	**2,441**

The notes on pages 154 to 213 form an integral part of the accounts.

Parent Company Statement of Changes in Equity

for the year ended 31st March 2022

	Share capital £ million	Share premium account £ million	Shares held in ESOT £ million	Other reserves (note 26) £ million	Retained earnings £ million	Total equity £ million
At 1st April 2020	221	148	(32)	10	1,041	1,388
Profit for the year	–	–	–	–	60	60
Remeasurements of post-employment benefit assets and liabilities	–	–	–	–	(135)	(135)
Impairment losses on equity investments through other comprehensive income	–	–	–	(3)	–	(3)
Amounts charged to hedging reserve	–	–	–	(3)	–	(3)
Tax on other comprehensive income	–	–	–	–	26	26
Total comprehensive income	–	–	–	(6)	(49)	(55)
Dividends paid (note 26)	–	–	–	–	(99)	(99)
Share-based payments	–	–	–	–	15	15
Cost of shares transferred to employees	–	–	3	–	(9)	(6)
Tax on share-based payments	–	–	–	–	1	1
At 31st March 2021	221	148	(29)	4	900	1,244
Profit for the year	–	–	–	–	334	334
Remeasurements of post-employment benefit assets and liabilities	–	–	–	–	156	156
Amounts charged to hedging reserve	–	–	–	(34)	–	(34)
Tax on other comprehensive income / (expense)	–	–	–	8	(30)	(22)
Total comprehensive (expense) / income	–	–	–	(26)	460	434
Dividends paid (note 26)	–	–	–	–	(139)	(139)
Purchase of treasury shares (note 26)	(3)	–	–	3	(200)	(200)
Share-based payments	–	–	–	–	11	11
Cost of shares transferred to employees	–	–	5	–	(8)	(3)
At 31st March 2022	**218**	**148**	**(24)**	**(19)**	**1,024**	**1,347**

The notes on pages 154 to 213 form an integral part of the accounts.

Notes on the Accounts

for the year ended 31st March 2022

1 Accounting policies

The Company and the Group

Johnson Matthey plc (the 'Company') is a public company limited by shares incorporated under the Companies Act 2006 and domiciled in England in the United Kingdom. The consolidated accounts of the company for the year ended 31st March 2022 consist of the audited consolidation of the accounts of the Company and its subsidiaries (together referred to as the 'Group'), together with the employee share ownership trust and the group's interest in joint ventures and associates.

Basis of accounting and preparation – group

On 31st December 2020, IFRS as adopted by the European Union at that date was brought into UK law and became UK-adopted International Accounting Standards, with future changes being subject to endorsement by the UK Endorsement Board. The group transitioned to UK-adopted International Accounting Standards in its consolidated financial statements on 1st April 2021. This change constitutes a change in accounting framework. However, there is no impact on recognition, measurement or disclosure in the period reported as a result of the change in framework.

The financial statements of the group have been prepared in accordance with UK-adopted International Accounting Standards and with the requirements of the Companies Act 2006 as applicable to companies reporting under those standards.

The accounts are prepared on the historical cost basis, except for certain assets and liabilities which are measured at fair value as explained below.

The group accounts comprise the accounts of the parent company and its subsidiaries, including the employee share ownership trust, and include the group's interest in joint ventures and associates. Entities the group controls are accounted for as subsidiaries. Entities that are joint ventures or associates are accounted for using the equity method of accounting. Transactions and balances between group companies are eliminated. No profit is recognised on transactions between group companies.

The results of businesses acquired or disposed of in the year are consolidated from or up to the effective date of acquisition or disposal, respectively. The net assets of businesses acquired are recognised in the consolidated accounts at their fair values at the date of acquisition.

Going concern

As at 31st March 2022, the group maintains a strong balance sheet with around £1.5 billion of available cash and undrawn committed facilities. Cash generation was strong during the period with free cash flow of £221 million. Net debt increased by £86 million since 31st March 2021 to £856 million (excluding Health) driven by the share buyback and repayment of metal leases. Net debt (including post tax pension deficits) to EBITDA, was below our target range at 1.2 times.

The group has a robust funding position comprising a range of long-term debt and a committed revolving credit facility (RCF). In March 2022, the group signed agreements for £667 million of additional long-term debt and extended the RCF for a further year to 2027. At 31st March 2022 none of these were drawn and there was £137 million of cash held in money market funds.

The recent financing in March covers debt maturing in the period to 2024, around £400 million, which has been included in our going concern modelling. As a long time, highly rated issuer in the US private placement market, the group expects to be able to access further additional funding in its existing markets should it need to. The group also has a number of additional sources of funding available including uncommitted lease facilities that support precious metal funding. Whilst we would fully expect to be able to utilise the metal lease facilities, they are excluded from our going concern modelling.

The review of going concern used both a base case and severe but plausible downside case to stress test key assumptions. The severe but plausible scenario also considered the impact from carbon pricing costs, metal price volatility and increases in the amount of metal that we hold. Whilst the combined impact would reduce profitability and increase debt against our latest forecast, our balance sheet remains strong, and the group maintains sufficient liquidity throughout the period of assessment without the use of mitigating actions. Applying a significant economic slowdown scenario to the base case scenario generates a severe but plausible case scenario. At a macro level, we have used forecasts from a range of external parties together with our own insights into expected volumes to derive the scenarios.

Clean Air

For Clean Air, the base case assumes that supply chain disruption and shortage ease through the second half of the financial year, supported by demand from Asia and US markets.

In our severe but plausible case scenario, we test the impact of a slower recovery from reduced vehicle production and/or market/consumer demand disruption and/or a greater share of zero emission vehicles in the market, assumed to result in a 10% drop in sales.

Efficient Natural Resources

For purposes of assessing going concern, the base case forecast for Efficient Natural Resources had lower operating profit compared to year end 31st March 2022 driven by assuming increased inflation, lower metal prices, and lower trading associated with Russia's war in Ukraine. Under a severe but plausible scenario a slower recovery is assumed in our end customers' markets.

Conclusion

Under all scenarios above, the group has sufficient headroom against committed facilities and key financial covenants are not in breach during the going concern period.

We are entering a period of greater political and economic uncertainty with both the ongoing disruptive effects of COVID-19, impacts of the war in Ukraine and a potential recession. To give further assurance on liquidity, we have also undertaken a reverse stress test to identify what additional or alternative scenarios and circumstances would threaten our current financing arrangements. This shows that we have headroom against a further decline in profitability beyond the severe-but-plausible scenario or a significant increase in borrowings. Furthermore, the group has a range of levers which it could utilise to protect headroom including reducing capital expenditure, renegotiating payment terms and reducing future dividend distributions.

1 Accounting policies (continued)

Basis of preparation (continued)

Conclusion (continued)

The directors are therefore of the opinion that the group and the company have adequate resources to fund its operations for the period of at least twelve months from the date of approving these financial statements and so it is appropriate to prepare the accounts on a going concern basis.

Basis of accounting and preparation – parent company

The accounts are prepared on a going concern basis in accordance with Financial Reporting Standard (FRS) 101, Reduced Disclosure Framework, issued in September 2015 and the Companies Act 2006 applicable to companies reporting under FRS 101. The parent company applies the recognition, measurement and disclosure requirements of international accounting standards in conformity with the requirements of the Companies Act 2006, but makes amendments where necessary to comply with the Act and has set out below the FRS 101 disclosure exemptions taken by the parent company:

- the requirements of paragraphs 45(b) and 46 to 52 of IFRS 2, *Share-based Payment*;
- the requirements of IFRS 7, *Financial Instruments: Disclosures*;
- the requirements of paragraphs 91 to 99 of IFRS 13, *Fair Value Measurement*;
- the requirements of the second sentence of paragraph 110 and paragraphs 113(a), 114, 115, 118, 119(a) to (c), 120 to 127 and 129 of IFRS 15, *Revenue from Contracts with Customers*;
- the requirement in paragraph 38 of IAS 1, Presentation of Financial Statements, to present comparative information in respect of: paragraph 73(e) of IAS 16, *Property, Plant and Equipment*; and paragraph 118(e) of IAS 38, *Intangible Assets*;
- the requirements of paragraphs 10(d), 38A, 38B, 40A, 40B, 40C, 40D, 111 and 134 to 136 of IAS 1, *Presentation of Financial Statements*;
- the requirements of IAS 7, *Statement of Cash Flows*;
- the requirements of paragraphs 30 and 31 of IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors*;
- the requirements of paragraph 17 of IAS 24, *Related Party Disclosures*;
- the requirements in IAS 24, *Related Party Disclosures*, to disclose related party transactions entered into between two or more members of a group, provided that any subsidiary which is a party to the transaction is wholly owned by such a member; and
- the requirements of paragraphs 130(f)(ii), 130(f)(iii), 134(d), 134(f) and 135(c) to 135(e) of IAS 36, *Impairment of Assets*.

The accounts are prepared on the historical cost basis, except for certain assets and liabilities which are measured at fair value as explained below.

The parent company has not presented its own income statement, statement of total comprehensive income and related notes as permitted by Section 408(3) of the Companies Act 2006. Profit for the year is disclosed in the parent company balance sheet and statement of changes in equity.

In the parent company balance sheet, businesses acquired from other group companies are recognised at book value at the date of acquisition. The difference between the consideration paid and the book value of the net assets acquired is reflected in retained earnings.

Significant accounting policies

The group's and parent company's accounting policies have been applied consistently during the current and prior year, other than where new policies have been adopted (see below). The group's and parent company's significant accounting policies are as follows:

Revenue

Revenue represents income derived from contracts for the provision of goods and services by the parent company and its subsidiaries to customers in exchange for consideration in the ordinary course of the group's activities.

Performance obligations

Upon approval by the parties to a contract, the contract is assessed to identify each promise to transfer either a distinct good or service or a series of distinct goods or services that are substantially the same and have the same pattern of transfer to the customer. Goods and services are distinct and accounted for as separate performance obligations in the contract if the customer can benefit from them either on their own or together with other resources that are readily available to the customer and they are separately identifiable in the contract.

The group typically sells licences of its intellectual property together with other goods and services and, since these licences are not generally distinct in the context of the contract, revenue recognition is considered at the level of the performance obligation of which the licence forms part. Revenue in respect of performance obligations containing bundles of goods and services in which a licence with a sales or usage-based royalty is the predominant item is recognised when sales or usage occur.

Transaction price

At the start of the contract, the total transaction price is estimated as the amount of consideration to which the group expects to be entitled in exchange for transferring the promised goods and services to the customer, excluding sales taxes. Variable consideration, such as trade discounts, is included based on the expected value or most likely amount only to the extent that it is highly probable that there will not be a reversal in the amount of cumulative revenue recognised. The transaction price does not include estimates of consideration resulting from contract modifications until they have been approved by the parties to the contract. The total transaction price is allocated to the performance obligations identified in the contract in proportion to their relative stand-alone selling prices. Many of the group's and parent company's products and services are bespoke in nature and, therefore, stand-alone selling prices are estimated based on cost plus margin or by reference to market data for similar products and services.

1 Accounting policies (continued)

Significant accounting policies (continued)

Revenue recognition

Revenue is recognised as performance obligations are satisfied as control of the goods and services is transferred to the customer.

For each performance obligation within a contract, the group and parent company determine whether it is satisfied over time or at a point in time. Performance obligations are satisfied over time if one of the following criteria is satisfied:

- the customer simultaneously receives and consumes the benefits provided by the group's and parent company's performance as they perform;
- the group's and parent company's performance creates or enhances an asset that the customer controls as the asset is created or enhanced; or
- the group's and parent company's performance does not create an asset with an alternative use to the group and parent company and they have an enforceable right to payment for performance completed to date.

For more detail of our revenue recognition policy see note 3.

In the event that the group and parent company enter into bill-and-hold transactions at the specific request of customers, revenue is recognised when the goods are ready for transfer to the customer and when the group and parent company are no longer capable of directing those goods to another use.

Revenue includes sales of precious metal to customers and the precious metal content of products sold to customers.

Linked contracts under which the group and parent company sell or buy precious metal and commit to repurchase or sell the metal in the future are accounted for as finance transactions and no revenue is recognised in respect of the sale leg.

No revenue is recognised by the group or parent company in respect of non-monetary exchanges of precious metal on the basis that the counterparties are in the same line of business.

Consideration payable to customers

Consideration payable to customers in advance of the recognition of revenue in respect of the goods and services to which it relates is capitalised and recognised as a deduction to the revenue recognised upon transfer of the goods and services to the customer.

Costs to fulfil a contract

Contract fulfilment costs in respect of over time contracts are expensed as incurred. Contract fulfilment costs in respect of point in time contracts are accounted for under IAS 2, *Inventories*.

Contract receivables

Contract receivables represent amounts for which the group and parent company have an unconditional right to consideration in respect of unbilled revenue recognised at the balance sheet date.

Contract liabilities

Contract liabilities represent the obligation to transfer goods or services to a customer for which consideration has been received, or consideration is due, from the customer.

Foreign currencies

Foreign currency transactions are recorded in the functional currency of the relevant subsidiary, joint venture, associate or branch at the exchange rate at the date of the transaction. Foreign currency monetary assets and liabilities are retranslated into the relevant functional currency at the exchange rate at the balance sheet date.

Income statements and cash flows of overseas subsidiaries, joint ventures, associates and branches are translated into sterling at the average rates for the year. Balance sheets of overseas subsidiaries, joint ventures, associates and branches, including any fair value adjustments and related goodwill, are translated into sterling at the exchange rates at the balance sheet date.

Exchange differences arising on the translation of the net investment in overseas subsidiaries, joint ventures, associates and branches, less exchange differences arising on related foreign currency financial instruments which hedge the group's net investment in these operations, are taken to other comprehensive income. On disposal of the net investment, the cumulative exchange difference is reclassified from equity to operating profit.

Other exchange differences are recognised in operating profit.

Finance costs and finance income

Finance costs that are directly attributable to the construction of an asset that necessarily takes a substantial period of time to get ready for its intended use are capitalised as part of the cost of that asset. Other finance costs and finance income are recognised in the income statement in the year incurred.

Research and development

Research expenditure is charged to the income statement in the year incurred. Development expenditure is charged to the income statement in the year incurred unless it meets the recognition criteria for capitalisation. When the recognition criteria have been met, any further development expenditure is capitalised as an intangible asset.

Property, plant and equipment

Property, plant and equipment is stated at cost less accumulated depreciation and any provisions for impairment. Depreciation is provided at rates calculated to write-off the cost less estimated residual value of each asset over its useful life. Certain buildings and plant and equipment are depreciated using the units of production method as this more closely reflects their expected consumption. All other assets are depreciated using the straight-line method. The useful lives vary according to the class of the asset, but are typically:

- buildings – 30 years; and
- plant and machinery – 4 to 10 years.
- land is not depreciated.

1 Accounting policies (continued)

Significant accounting policies (continued)

Goodwill and other intangible assets

Goodwill arises on the acquisition of a business when the fair value of the consideration exceeds the fair value attributed to the net assets acquired (including contingent liabilities). It is subject to annual impairment reviews. Acquisition-related costs are charged to the income statement as incurred. The group and parent company have taken advantage of the exemption allowed under IFRS 1 and, therefore, goodwill arising on acquisitions made before 1st April 2004 is included at the carrying amount at that date less any subsequent impairments.

Other intangible assets are stated at cost less accumulated amortisation and any provisions for impairment. Customer contracts are amortised when the relevant income stream occurs. All other intangible assets are amortised by using the straight-line method over the useful lives from the time they are first available for use. The estimated useful lives vary according to the specific asset, but are typically:

- customer contracts and relationships – 1 to 15 years;
- capitalised computer software – 3 to 10 years;
- patents, trademarks and licences – 3 to 20 years;
- acquired research and technology – 4 to 10 years; and
- capitalised development currently being amortised – 3 to 8 years.

Intangible assets which are not yet being amortised are subject to annual impairment reviews.

Investments in subsidiaries

Investments in subsidiaries are stated in the parent company's balance sheet at cost less any provisions for impairment. If a distribution is received from a subsidiary, the investment in that subsidiary is assessed for an indication of impairment.

Leases

Leases are recognised as a right-of-use asset, together with a corresponding lease liability, at the date at which the leased asset is available for use.

The right-of-use asset is initially measured at cost, which comprises the initial value of the lease liability, lease payments made (net of any incentives received from the lessor) before the commencement of the lease, initial direct costs and restoration costs. The right-of-use asset is depreciated on a straight-line basis over the shorter of the asset's useful life and the lease term in operating profit.

The lease liability is initially measured as the present value of future lease payments discounted using the interest rate implicit in the lease or, where this rate is not determinable, the group's incremental borrowing rate, which is the interest rate the group would have to pay to borrow the amount necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions. Interest is charged to finance costs at a constant rate of interest on the outstanding lease liability over the lease term.

Payments in respect of short-term leases, low-value leases and precious metal leases are charged to the income statement on a straight-line basis over the lease term in operating profit.

The group leases precious metals to fund temporary peaks in metal requirements provided market conditions allow. These leases are from banks for specified periods (less than 12 months) and the group pays a fee which is expensed on a straight-line basis over the lease term in finance costs. The group holds sufficient precious metal inventories to meet all the obligations under these lease arrangements as they fall due.

Inventories

Precious metal

Inventories of gold, silver and platinum group metals are valued according to the source from which the metal is obtained. Metal which has been purchased and committed to future sales to customers is valued at the price at which it is contractually committed, adjusted for unexpired contango and backwardation. Other precious metal inventories owned by the group, which are unhedged, are valued at the lower of cost and net realisable value using the weighted average cost formula.

Other

Non-precious metal inventories are valued at the lower of cost, including attributable overheads, and net realisable value. Except where costs are specifically identified, the first-in, first-out cost formula is used to value inventories.

Cash and cash equivalents

Cash and deposits comprise cash at bank and in hand and short-term deposits with a maturity date of three months or less from the date of acquisition. Money market funds comprise investments in funds that are subject to an insignificant risk of changes in fair value. The group and parent company routinely use short-term bank overdraft facilities, which are repayable on demand, as an integral part of their cash management policies and, therefore, cash and cash equivalents include cash and deposits, money market funds and bank overdrafts. Offset arrangements across group businesses have been applied to arrive at the net cash and overdraft figures.

At 31st March 2022 cash and cash equivalents includes £111 million (31st March 2021: £nil) of restricted amounts relating to cash held in South Africa. The cash has been restricted as a result of a change in company residency status. The group anticipates extracting and/or utilising this in the near term and is reviewing options.

Financial instruments

Investments and other financial assets

The group and parent company classify their financial assets in the following measurement categories:

- those measured at fair value either through other comprehensive income or through profit or loss; and
- those measured at amortised cost.

1 Accounting policies (continued)

Financial instruments (continued)

Investments and other financial assets (continued)

At initial recognition, the group and parent company measure financial assets at fair value plus, in the case of financial assets not measured at fair value through profit or loss, transaction costs that are directly attributable to their acquisition.

The group and parent company subsequently measure equity investments at fair value and have elected to present fair value gains and losses on equity investments in other comprehensive income. There is, therefore, no subsequent reclassification of cumulative fair value gains and losses to profit or loss following disposal of the investments.

The group and parent company subsequently measure trade and other receivables and contract receivables at amortised cost, with the exception of trade receivables that have been designated as at fair value through other comprehensive income because the group has certain operations with business models to hold trade receivables for collection or sale. All other financial assets, including short-term receivables, are measured at amortised cost less any impairment provision.

For the impairment of trade and contract receivables, the group and parent company apply the simplified approach permitted by IFRS 9, *Financial Instruments*, which requires expected lifetime losses to be recognised from initial recognition.

Derivative financial instruments

The group and parent company use derivative financial instruments, in particular forward currency contracts, currency swaps, interest rate swaps and commodity derivatives to manage the financial risks associated with their underlying business activities and the financing of those activities. The group and parent company do not undertake any speculative trading activity in derivative financial instruments.

Derivative financial instruments are measured at their fair value. Derivative financial instruments may be designated at inception as fair value hedges, cash flow hedges or net investment hedges if appropriate. For currency swaps designated as instruments in cash flow or net investment hedging relationships, the impact from currency basis spreads is included in the hedge relationship and may be a source of ineffectiveness recognised in the income statement.

Derivative financial instruments which are not designated as hedging instruments are classified as at fair value through profit or loss, but are used to manage financial risk. Changes in the fair value of any derivative financial instruments that are not designated as, or are not determined to be, effective hedges are recognised immediately in the income statement. The vast majority of forward precious metal price contracts are entered into and held for the receipt or delivery of precious metal and, therefore, are not recorded at fair value.

Cash flow hedges

Changes in the fair value of derivative financial instruments designated as cash flow hedges are recognised in other comprehensive income to the extent that the hedges are effective. Ineffective portions are recognised in the income statement immediately. If the hedged item results in the recognition of a non-financial asset or liability, the amount previously recognised in other comprehensive income is transferred out of equity and included in the initial carrying amount of the asset or liability. Otherwise, the amount previously recognised in other comprehensive income is transferred to the income statement in the same period that the hedged item is recognised in the income statement. If the hedging instrument expires or is sold, terminated or exercised or the hedge no longer meets the criteria for hedge accounting, amounts previously recognised in other comprehensive income remain in equity until the forecast transaction occurs. If a forecast transaction is no longer expected to occur, the amounts previously recognised in other comprehensive income are transferred to the income statement. If a forward precious metal price contract will be settled net in cash, it is designated and accounted for as a cash flow hedge.

Fair value hedges

Changes in the fair value of derivative financial instruments designated as fair value hedges are recognised in the income statement, together with the related changes in the fair value of the hedged asset or liability. Fair value hedge accounting is discontinued if the hedging instrument expires or is sold, terminated or exercised or the hedge no longer meets the criteria for hedge accounting.

Net investment hedges

For hedges of net investments in foreign operations, the effective portion of the gain or loss on the hedging instrument is recognised in other comprehensive income, while the ineffective portion is recognised in the income statement. Amounts taken to other comprehensive income are reclassified from equity to the income statement when the foreign operations are sold or liquidated.

Financial liabilities

Borrowings are measured at amortised cost. Those borrowings designated as being in fair value hedge relationships are remeasured for the fair value changes in respect of the hedged risk with these changes recognised in the income statement. All other financial liabilities, including short-term payables, are measured at amortised cost.

Precious metal sale and repurchase agreements

The group and parent company undertake linked contracts to sell or buy precious metal and commit to repurchase or sell the metal in the future. An asset representing the metal which the group and parent company have committed to sell or a liability representing the obligation to repurchase the metal are recognised in trade and other receivables or trade and other payables, respectively.

1 Accounting policies (continued)

Taxation

Current and deferred tax are recognised in the income statement, except when they relate to items recognised directly in equity, in which case the related tax is also recognised in equity.

Current tax is the amount of income tax expected to be paid in respect of taxable profits using the tax rates that have been enacted or substantively enacted at the balance sheet date.

Deferred tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the balance sheet. It is provided using the tax rates that are expected to apply in the period when the asset or liability is settled, based on tax rates that have been enacted or substantively enacted at the balance sheet date.

Deferred tax assets are recognised to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilised. No deferred tax asset or liability is recognised in respect of temporary differences associated with investments in subsidiaries and branches where the group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future.

Provisions and contingencies

Provisions are recognised when the group has a present obligation as a result of a past event and a reliable estimate can be made of a probable adverse outcome, for example warranties, environmental claims and restructuring. Otherwise, material contingent liabilities are disclosed unless the probability of the transfer of economic benefits is remote. Contingent assets are only disclosed if an inflow of economic benefits is virtually certain.

The parent company considers financial guarantees of its subsidiaries' borrowings and precious metal leases to be insurance contracts.

Share-based payments and employee share ownership trust (ESOT)

The fair value of shares awarded to employees under the performance share plan, restricted share plan, long term incentive plan and deferred bonus plan is calculated by adjusting the share price on the date of allocation for the present value of the expected dividends that will not be received. The resulting cost is charged to the income statement over the relevant performance periods, adjusted to reflect actual and expected levels of vesting where appropriate.

The group and parent company provide finance to the ESOT to purchase company shares in the open market. Costs of running the ESOT are charged to the income statement. The cost of shares held by the ESOT is deducted in arriving at equity until they vest unconditionally with employees.

Post-employment benefits

The costs of defined contribution plans are charged to the income statement as they fall due.

For defined benefit plans, the group and parent company recognise the net assets or liabilities of the plans in their balance sheets. Assets are measured at their fair value at the balance sheet date. Liabilities are measured at present value using the projected unit credit method and a discount rate reflecting yields on high quality corporate bonds. The changes in plan assets and liabilities, based on actuarial advice, are recognised as follows:

- The current service cost is deducted in arriving at operating profit.
- The net interest cost, based on the discount rate at the beginning of the year, contributions paid in and the present value of the net defined benefit liabilities during the year, is included in finance costs.
- Past service costs and curtailment gains and losses are recognised in operating profit at the earlier of when the plan amendment or curtailment occurs and when any related restructuring costs or termination benefits are recognised.
- Gains or losses arising from settlements are included in operating profit when the settlement occurs.
- Remeasurements, representing returns on plan assets, excluding amounts included in interest, and actuarial gains and losses arising from changes in financial and demographic assumptions, are recognised in other comprehensive income.

Assets held for sale and discontinued operations

Non-current assets and disposal groups are classified as held for sale, if available for sale in its present condition and a sale is considered highly probable within 12 months. They are measured at the lower of their carrying amount and fair value less costs to sell. Assets and liabilities classified as held for sale are presented separately on the Balance Sheet. The assets are not depreciated or amortised while they are classified as held for sale.

An impairment loss is recognised in the Income Statement for any initial or subsequent write-down of the asset or disposal group to fair value less costs to sell. A gain is recognised for any subsequent increases in fair value less costs to sell of an asset or disposal group, but not in excess of any cumulative impairment loss previously recognised. A gain or loss not previously recognised by the date of the sale of the non-current asset (or disposal group) is recognised at the date of de-recognition.

A discontinued operation is a component of the group's business that either has been disposed of, or that is classified as held for sale and represents a separate major line of business or geographical area of operations, is part of a single co-ordinated plan to dispose of a separate major line of business or geographical area of operations or is a subsidiary acquired exclusively with a view to resale.

Classification as a discontinued operation occurs at the earlier of disposal or when the operation meets the criteria to be classified as held for sale. The results of discontinued operations are presented separately in the Income Statement. When an operation is classified as a discontinued operation, the comparative Income Statement and Statement of Total Comprehensive Income is restated as if the operation had been discontinued from the start of the comparative year.

Sources of estimation uncertainty

Determining the carrying amounts of certain assets and liabilities at the balance sheet date requires estimation of the effects of uncertain future events. In the event that actual outcomes differ from those estimated, there may be an adjustment to the carrying amounts of those assets and liabilities within the next financial year. Other significant risks of material adjustment are the valuation of the liabilities of the defined benefit pension plans and tax provisions.

1 Accounting policies (continued)

Sources of estimation uncertainty (continued)

The group and parent company have considered the refining process and stocktakes and provisions and contingent liabilities and, whilst not deemed to represent a significant risk of material adjustment to the group's and parent company's financial position during the year ending 31st March 2022, represent important accounting estimates.

Goodwill, other intangibles and other assets

The group and parent company have significant intangible assets from both business acquisitions and investments in new products and technologies. Some of those acquisitions and investments are at an early stage of commercial development and, therefore, carry a greater risk that they will not be commercially viable. Goodwill and intangible assets not yet ready for use are not amortised, but are subject to annual impairment reviews. Other intangible assets are amortised from the time they are first ready for use and, together with other assets, are assessed for impairment when there is a triggering event that provides evidence that they are impaired.

The impairment reviews require the use of estimates of future profit and cash generation based on financial budgets and plans approved by management, generally covering a three-year period and then extrapolated using long term growth rates, and the pre-tax discount rates used in discounting projected cash flows.

Post-employment benefits

The group's and parent company's defined benefit plans are assessed annually by qualified independent actuaries. The estimate of the liabilities of the plans is based on a number of actuarial assumptions.

There is a range of possible values for each actuarial assumption and the point within that range is estimated to most appropriately reflect the group's and parent company's circumstances. Small changes in these assumptions can have a significant impact on the estimate of the liabilities of the plans. A description of those discount rate and inflation assumptions, together with sensitivity analysis, is set out in note 24 to the group and parent company accounts.

Tax provisions

Tax provisions are determined based on the tax laws and regulations that apply in each of the jurisdictions in which the group operates. Tax provisions are recognised where the impact of those laws and regulations is unclear and it is probable that there will be a tax adjustment representing a future outflow of funds to a tax authority or a consequent adjustment to the carrying value of a tax asset.

Provisions are measured using the best estimate of the most likely amount, being the most likely amount in a range of possible outcomes. The resolution of tax positions taken by the group can take a considerable period of time to conclude and, in some cases, it is difficult to predict the outcome. Group current income tax liabilities at 31st March 2022 of £97 million (2021: £147 million) include tax provisions of £103 million (2021: £102 million) and the estimation of the range of possible outcomes is an increase in those liabilities by £83 million (2021: £97 million) to a decrease of £93 million (2021: £78 million). The estimates made reflect where the group faces routine tax audits or is in ongoing disputes with tax authorities; has identified potential tax exposures relating to transfer pricing; or is contesting the tax deductibility of certain business costs.

Deferred tax assets

Deferred tax assets are recognised to the extent it is probable that future taxable profits will be available, against which the deductible temporary difference can be utilised, based on management's assumptions relating to future taxable profits.

Determination of future taxable profits requires application of judgement and estimates, including: market share, expected changes to selling prices, product profitability, precious metal prices and other direct input costs, based on management's expectations of future changes in the markets using external sources of information where appropriate. The estimates take account of the inherent uncertainties, constraining the expected level of profit as appropriate. Changes in these estimates will affect future profits and therefore the recoverability of the deferred tax assets.

Refining process and stocktakes

The group's and parent company's refining businesses process significant quantities of precious metal and there are uncertainties regarding the actual amount of metal in the refining system at any one time. The group's refining businesses process over five million ounces of platinum group metals per annum with a market value of around £11 billion. The majority of metal processed is owned by customers and the group and parent company must return pre-agreed quantities of refined metal based on assays of starting materials and other contractual arrangements, such as the timing of the return of metal. The group and parent company calculate the profits or losses of their refining operations based on estimates, including the extent to which process losses are expected during refining. The risk of process losses or stock take gains depends on the nature of the starting material being refined, the specific refining processes applied, the efficiency of those processes and the contractual arrangements.

Stocktakes are performed at regular intervals to determine the volume of metal within the refining system compared with the estimated volumes with the outcome being an adjustment to revenue (see note 3 for more detail). Stocktakes are, therefore, a key control in the assessment of the accuracy of the profit or loss of refining operations. Whilst refining is a complex, large-scale industrial process, the group and parent company have appropriate processes and controls over the movement of material in their refineries.

Climate change

The impact of climate change presented in the group's Strategic Report (see pages 60 to 69) and the stated net zero targets have been considered in preparing the group accounts.

The following considerations were made:

Impact on the going concern period and viability of the group over the next three years.
The latest forecasts reflect the continuous investment in sustainable technologies including commercialisation of our products used in green hydrogen production and higher performance fuel cell components for a range of automotive, non-automotive and stationary applications.

1 Accounting policies (continued)

Sources of estimation uncertainty (continued)

The potential impact of climate change on a number of areas within the financial statements has been considered, including:

- The forecasts of cash flows used in impairment assessments for the carrying value of non-current assets including goodwill (see note 5).
- Recoverability of deferred tax assets.
- The expected lives of fixed assets and their exposure to the physical risk posed by climate change.

The expected lives of property, plant and equipment tends to be short to medium term, as such the physical risk posed by climate change in the long term is low.

Assets held for sale

Our estimate for the fair value less costs to sell of the Battery Materials business (£50 million) is with reference to a signed agreement with EV Metals Group plc. At 25th May 2022 the Group had received £20 million with remainder of the consideration due on completion.

Judgements made in applying accounting policies

Metal

The group and parent company use precious metal owned by customers in their production processes. It has been determined that this metal is not controlled by the group or parent company and, therefore, it is not recognised on the balance sheet.

The group and parent company manage precious metal inventories by entering into physically settled forward sales and purchases of metal positions in line with a well-established hedging policy. The own use exemption has been adopted for these transactions and, therefore, the group and parent company do not fair value such physically settled contracts.

The group undertakes linked contracts to sell or buy precious metal and commits to repurchase or sell the metal in the future to manage inventory levels. Accordingly, cash flows in respect of sale and repurchase agreements are shown as cash flows from operating activities in the cash flow statement rather than cash flows from financing activities.

Provisions and contingent liabilities

The group is involved in various disputes and claims which arise from time to time in the course of its business including, for example, in relation to commercial matters, product quality or liability, employee matters and tax audits. The group is also involved from time to time in the course of its business in legal proceedings and actions, engagement with regulatory authorities and in dispute resolution processes. Judgement is required to determine if an outflow of economic resources is probable, or possible but not probable for such events. Where it is probable, a liability is recognised and further judgement is used to determine the amount of the provision. Where it is possible but not probable, further judgement is used to determine if the likelihood is remote, in which case no disclosures are provided; if the likelihood is not remote then judgement is required to determine the contingent liability disclosed. Provisions and contingent liabilities are set out in notes 22 and 33, respectively.

In the course of preparing the accounts, no other judgements have been made in the process of applying the group's and parent company's accounting policies, other than those involving estimations, that have had a significant effect on the amounts recognised in the accounts.

Changes in accounting policies

Interest Rate Benchmark Reform Phase 2 – Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16

The IBOR reform, Phase 2 amendments were effective for annual periods beginning on or after the 1st January 2021. The Phase 2 amendments address issues that arise from implementation of the reforms, including the replacement of one benchmark with an alternative one. A practical expedient is provided such that the change to contractual cash flows for financial assets and liabilities (including lease liabilities) is accounted for prospectively by revising the effective interest rate. In addition, hedge accounting will not be discontinued solely because of the IBOR reform. The amendments did not have a material impact on the results or financial position of the group and there has been no change to the group's interest policy.

The group has one IFRS 9 designated hedge relationship: the 3.26% $150 million Bonds 2022 which have been swapped into floating rate US dollars. This swap references six-month US dollar LIBOR, however the swap matures in 2022, before the amendments are effective for the group. The group does have access to a revolving credit facility which remains undrawn, the contract was amended so that USD and GBP drawings are subject to the new Secured Overnight Financing Rate (SOFR) and Sterling Overnight Index Average (SONIA) respectively from 30th November 2021. The implications on the wider business of IBOR reform have been assessed and there are no other arrangements that are materially impacted.

Other amendments to accounting standards

The IASB ratified the IFRIC update on Configuration and Customisation ('CC') costs in a Cloud Computing Arrangement (IAS 38, *Intangible Assets*) in April 2021. The group reports 'CC' in cloud computing arrangements in compliance with these updates.

The IASB has issued other amendments resulting from improvements to IFRS that the group considers do not have any impact on the accounting policies, financial position or performance of the group. The group has not early adopted any standard, interpretation or amendment that was issued but is not yet effective.

Non-GAAP measures

The group uses various measures to manage its business which are not defined by generally accepted accounting principles (GAAP). The group's management believes these measures provide valuable additional information to users of the accounts in understanding the group's performance. The group's non-GAAP measures are defined and reconciled to GAAP measures in note 36.

2 Segmental information

Revenue, sales and underlying operating profit by sector

We have implemented small changes to our reporting segments to reflect how we are managing the business and increase visibility of our new growth businesses. Efficient Natural Resources now includes Life Science Technologies (formerly part of Other Markets) and excludes Diagnostic Services and Advanced Glass Technologies[1] (now part of Other Markets). Excluding Corporate costs, the group has three reporting segments, aligned to the needs of our customers and the global challenges we are tackling.

Clean Air – provides catalysts for emission control after-treatment systems to remove harmful emissions from vehicles and non-road equipment powered by diesel and gasoline.

Efficient Natural Resources – provides products and processing services for the efficient use and transformation of critical natural resources including oil, gas, biomass and platinum group metals to enable the decarbonisation of chemical value chains and provide circular economy solutions.

Other Markets – a portfolio of businesses with particular focus on potential growth and value realisation opportunities. This includes Battery Systems, Fuel Cells, Diagnostic Services, Battery Materials[2] and Green Hydrogen.

The Group Leadership Team (the chief operating decision maker as defined by IFRS 8, *Operating Segments*) monitors the results of these operating sectors to assess performance and make decisions about the allocation of resources. Each operating sector is represented by a member of the Group Leadership Team. These operating sectors represent the group's reportable segments and their principal activities are described on pages 24 to 27. The performance of the group's operating sectors is assessed on sales and underlying operating profit (see note 36). Sales between segments are made at market prices, taking into account the volumes involved.

The Health segment is considered a discontinued operation as at 31st March 2022, the underlying profit for the year is £3 million. Information about this discontinued segment is provided in note 27.

Year ended 31st March 2022

	Clean Air £ million	Efficient Natural Resources £ million	Other Markets £ million	Corporate £ million	Eliminations £ million	Total from continuing operations £ million
Revenue from external customers	7,085	8,461	479	–	–	**16,025**
Inter-segment revenue	4	4,555	1	–	(4,560)	**–**
Revenue	**7,089**	**13,016**	**480**	**–**	**(4,560)**	**16,025**
External sales	2,455	945	378	–	–	**3,778**
Inter-segment sales	2	96	1	–	(99)	**–**
Sales[3]	**2,457**	**1,041**	**379**	**–**	**(99)**	**3,778**
Underlying operating profit / (loss)[3]	**302**	**358**	**(21)**	**(86)**	**–**	**553**

Year ended 31st March 2021*

	Clean Air £ million	Efficient Natural Resources (restated) £ million	Other Markets (restated) £ million	Corporate £ million	Eliminations (restated) £ million	Total from continuing operations £ million
Revenue from external customers	6,985	7,952	498	–	–	15,435
Inter-segment revenue	2	4,877	1	–	(4,880)	–
Revenue	**6,987**	**12,829**	**499**	**–**	**(4,880)**	**15,435**
External sales	2,412	862	411	–	–	3,685
Inter-segment sales	–	112	1	–	(113)	–
Sales[3]	**2,412**	**974**	**412**	**–**	**(113)**	**3,685**
Underlying operating profit / (loss)[3]	**269**	**276**	**1**	**(73)**	**–**	**473**

1. The sale of Advanced Glass Technologies was completed during the year (see note 28).
2. The group announced its intention to exit Battery Materials during the year (see note 6).
3. Sales and underlying operating profit are non-GAAP measures (see note 36). Sales excludes the sale of precious metals. Underlying operating profit excludes profit or loss on disposal of businesses, gain or loss on significant legal proceedings, together with associated legal costs, amortisation of acquired intangibles and major impairment and restructuring charges.

* The comparative period is restated to reflect the group's updated reporting segments and revised inter-segment revenue and sales for Efficient Natural Resources and eliminations for copper zeolite sales. Also restated to reflect classification of the Health segment as discontinued operations (see note 27).

2 Segmental information (continued)

Reconciliation from underlying operating profit to operating profit by sector

Year ended 31st March 2022

	Clean Air £ million	Efficient Natural Resources £ million	Other Markets £ million	Corporate £ million	Total from continuing operations £ million
Underlying operating profit / (loss)[1]	**302**	**358**	**(21)**	**(86)**	**553**
Profit on disposal of businesses (note 28)	–	–	106	–	**106**
Gains and losses on significant legal proceedings	–	36	6	–	**42**
Amortisation of acquired intangibles	(2)	(4)	–	–	**(6)**
Major impairment and restructuring charges (note 6)	(27)	(5)	(400)	(8)	**(440)**
Operating profit / (loss)	**273**	**385**	**(309)**	**(94)**	**255**

Year ended 31st March 2021*

	Clean Air £ million	Efficient Natural Resources (restated) £ million	Other Markets (restated) £ million	Corporate £ million	Total from continuing operations £ million
Underlying operating profit / (loss)[1]	**269**	**276**	**1**	**(73)**	**473**
Amortisation of acquired intangibles	(2)	(6)	(2)	–	(10)
Major impairment and restructuring charges (note 6)	(102)	(20)	(8)	(24)	(154)
Operating profit / (loss)	**165**	**250**	**(9)**	**(97)**	**309**

1. Sales and underlying operating profit are non-GAAP measures (see note 36). Sales excludes the sale of precious metals. Underlying operating profit excludes profit or loss on disposal of businesses, gain or loss on significant legal proceedings, together with associated legal costs, amortisation of acquired intangibles and major impairment and restructuring charges.

* The comparative period is restated to reflect the group's updated reporting segments and revised inter-segment revenue and sales for Efficient Natural Resources and eliminations for copper zeolite sales. Also restated to reflect classification of the Health segment as discontinued operations (see note 27).

2 Segmental information (continued)

Other segmental information

Year ended 31st March 2022

	Clean Air £ million	Efficient Natural Resources £ million	Other Markets £ million	Corporate £ million	Total £ million
Segmental net assets	**2,108**	**41**	**220**	**330**	**2,699**
Net debt (note 36)					**(856)**
Post-employment benefit net assets and liabilities					**280**
Deferred tax net assets					**80**
Provisions and non-current other payables					**(86)**
Investments in joint ventures and associates					**2**
Net assets held for sale					**322**
Net assets					**2,441**
Property, plant and equipment	71	89	180	17	**357**
Intangible assets	1	9	26	53	**89**
Capital expenditure	**72**	**98**	**206**	**70**	**446**
Depreciation	63	47	15	13	**138**
Amortisation	2	7	1	29	**39**
Impairment losses (notes 5 and 6)	26	7	363	8	**404**
Total	**91**	**61**	**379**	**50**	**581**

Year ended 31st March 2021*

	Clean Air (restated) £ million	Efficient Natural Resources (restated) £ million	Health £ million	Other Markets (restated) £ million	Corporate (restated) £ million	Total £ million
Segmental net assets	**2,686**	**(668)**	**469**	**476**	**354**	**3,317**
Net debt						**(775)**
Post-employment benefit net assets and liabilities						**96**
Deferred tax net assets						**112**
Provisions and non-current other payables						**(67)**
Investments in joint ventures and associates						**2**
Net assets						**2,685**
Property, plant and equipment	94	65	24	89	11	**283**
Intangible assets	1	4	5	21	44	**75**
Capital expenditure	**95**	**69**	**29**	**110**	**55**	**358**
Depreciation	67	45	20	16	10	**158**
Amortisation	8	8	1	2	13	**32**
Impairment losses (notes 5 and 6)	51	34	11	4	22	**122**
Total	**126**	**87**	**32**	**22**	**45**	**312**

* The comparative period is restated to reflect the group's updated reporting segments, and also restated to allocate precious metal inventory to segments in line with how the business is managed. The overall group total is as previously reported.

3 Revenue

Products and services

The group's principal products and services by operating sector and sub-sector are disclosed in the table below, together with information regarding performance obligations and revenue recognition. Revenue is recognised by the group as contractual performance obligations to customers are completed.

Sub-sector	Primary industry	Principal products and services	Performance obligations	Revenue recognition
Clean Air				
Light Duty Catalysts	Automotive	Catalysts for cars and other light duty vehicles	Point in time	On despatch or delivery
Heavy Duty Catalysts	Automotive	Catalysts for trucks, buses and non-road equipment	Point in time	On despatch or delivery
Efficient Natural Resources				
Catalyst Technologies	Chemicals / oil and gas	Speciality catalysts and additives	Point in time	On despatch or delivery
		Process technology licences	Over time	Based on costs incurred or straight-line over the licence term[1]
		Engineering design services	Over time	Based on costs incurred
Platinum Group Metal Services	Various	Platinum Group Metal refining and recycling services	Over time	Based on output
		Other precious metal products	Point in time	On despatch or delivery
		Platinum Group Metal chemical and industrial products	Point in time	On despatch or delivery
Health (discontinued operation – see note 27)				
Generics	Pharmaceuticals	Manufacture of active pharmaceutical ingredients	Point in time	On despatch or delivery
Innovators	Pharmaceuticals	Development and manufacture of active pharmaceutical ingredients	Over time	Based on costs incurred
Other Markets				
Other Markets (excluding Diagnostic Services)	Various	Precious metal pastes and enamels, battery materials and systems, fuel cell technologies and products found in devices used in medical procedures	Point in time	On despatch or delivery
Diagnostic Services	Oil and gas	Detection, diagnostic and measurement solutions	Over time	Based on costs incurred

1. Revenue recognition depends on whether the licence is distinct in the context of the contract.

3 Revenue (continued)

Revenue judgements

Over time revenue

Over time revenue recognition predominantly occurs in Efficient Natural Resources (Refining Services) and Health, see criteria for over time recognition as defined by the group's accounting policies in note 1.

Refining Services

The majority of the metal processed by the group and parent company's refining businesses is owned by customers and, therefore, revenue is recognised over time on the basis that the group and parent company are providing a service to enhance an asset controlled by the customer. The customer controls the metal throughout the refining process, the key indicators being legal ownership, metal price risk and that the customer has the right to claim the equivalent metal at all stages of processing.

The performance obligation contained in all refining contracts is a service arrangement to refine customer metal to a specified quality and volume by a certain date. For a contract that has multiple metals, the refinement of each metal is a separate performance obligation. We receive the contracted cash fee which is set with reference to market price at the start of the contract. We may also retain a percentage of the refined metal at settlement, this represents non-cash consideration and is recognised as part of revenue at fair value.

Revenue from refining services is recognised using an output method by estimating the progress of the metal in the refining process. Once the customer metal is in the refining process it is commingled with metal from other customers and it is not separately identifiable. Because we have a consistent volume of metal flowing through the refinery process, we estimate that all of the metal in the refinery is on average 50% of the way through the process. We therefore recognise up to 50% of the revenue (cash service fee and non-cash consideration) for our services when metal enters the refining process. Since refining each type of metal is a separate performance obligation, once we have returned the metal to the customer, we recognise the remaining 50% of revenue for that particular metal while other metal may still be due to the same customer.

Where refinery stocktakes indicate that metal recoveries have been lower than anticipated and/or allowed for in process loss provisioning, refined metal gain revenue is reduced accordingly. Where refinery stocktakes indicate that metal recoveries have been higher than anticipated, any incremental refining metal gain revenue is only recognised once it is highly probable that a reversal in the amount of cumulative revenue recognised will not occur and the metal has been sold.

Revenue from external customers by principal products and services

Year ended 31st March 2022

	Continuing operations				
	Clean Air £ million	Efficient Natural Resources £ million	Other Markets £ million	Total £ million	Health (discontinued) £ million
Metal	4,630	7,516	101	**12,247**	3
Heavy Duty Catalysts	849	–	–	**849**	–
Light Duty Catalysts	1,578	–	–	**1,578**	–
Catalyst Technologies	–	508	–	**508**	–
Platinum Group Metal Services	–	437	–	**437**	–
Generics	–	–	–	**–**	77
Innovators	–	–	–	**–**	84
Fuel Cells	–	–	25	**25**	–
Battery Materials	–	–	12	**12**	–
Battery Systems	–	–	151	**151**	–
Advanced Glass Technologies	–	–	62	**62**	–
Diagnostic Services	–	–	54	**54**	–
Medical Device Components	–	–	74	**74**	–
Other	28	–	–	**28**	–
Revenue	**7,085**	**8,461**	**479**	**16,025**	**164**

3 Revenue (continued)

Revenue from external customers by principal products and services (continued)

Year ended 31st March 2021

	Continuing operations				
	Clean Air £ million	Efficient Natural Resources (restated) £ million*	Other Markets (restated) £ million*	Total (restated) £ million*	Health (discontinued) £ million
Metal	4,573	7,090	87	**11,750**	2
Heavy Duty Catalysts	741	–	–	**741**	–
Light Duty Catalysts	1,641	–	–	**1,641**	–
Catalyst Technologies	–	487	–	**487**	–
Platinum Group Metal Services	–	375	–	**375**	–
Generics	–	–	–	**–**	146
Innovators	–	–	–	**–**	90
Fuel Cells	–	–	41	**41**	–
Battery Materials	–	–	14	**14**	–
Battery Systems	–	–	169	**169**	–
Advanced Glass Technologies	–	–	66	**66**	–
Diagnostic Services	–	–	43	**43**	–
Medical Device Components	–	–	60	**60**	–
Other	30	–	18	**48**	–
Revenue	**6,985**	**7,952**	**498**	**15,435**	**238**

Revenue from external customers by point in time and over time performance obligations

Year ended 31st March 2022

	Continuing operations				
	Clean Air £ million	**Efficient Natural Resources £ million**	**Other Markets £ million**	**Total £ million**	**Health (discontinued) £ million**
Revenue recognised at a point in time	7,085	8,087	453	**15,625**	89
Revenue recognised over time	–	374	26	**400**	75
Revenue	**7,085**	**8,461**	**479**	**16,025**	**164**

Year ended 31st March 2021

	Continuing operations				
	Clean Air £ million	Efficient Natural Resources (restated) £ million*	Other Markets (restated) £ million*	Total (restated) £ million*	Health (discontinued) £ million
Revenue recognised at a point in time	6,985	7,651	457	**15,093**	157
Revenue recognised over time	–	301	41	**342**	81
Revenue	**6,985**	**7,952**	**498**	**15,435**	**238**

* The comparative period is restated to reflect the group's updated reporting segments. Also restated to reflect classification of the Health segment as discontinued operations (see note 27).

3 Revenue (continued)

Geographical analysis of revenue from external customers and non-current assets

The group's country of domicile is the UK. Revenue from external customers based on the customer's location and non-current assets based on the location of the assets are disclosed below.

	Revenue from external customers		Non-current assets	
	2022 £ million	2021 £ million*	**2022 £ million**	2021 £ million
UK	2,845	3,330	733	990
Germany	1,600	1,493	244	251
Rest of Europe	2,001	2,001	292	384
USA	2,756	2,320	280	422
Rest of North America	597	613	40	46
China (including Hong Kong)	2,326	2,631	221	216
Rest of Asia	2,517	1,993	145	135
Rest of World	1,383	1,054	21	19
			1,976	**2,463**
Investments at fair value through other comprehensive income			45	53
Interest rate swaps			11	20
Deferred income tax assets			98	140
Post-employment benefit net assets			352	194
Total	**16,025**	**15,435**	**2,482**	**2,870**

* Restated to reflect classification of the Health segment as discontinued operations (see note 27).

Major customers

The group received £1.7 billion of revenue from one external customer in the Clean Air sector which represents more than 10% of the group's revenue from external customers during the year ended 31st March 2022 (2021: £1.9 billion of revenue from one external customer in the Clean Air sector).

Unsatisfied performance obligations

At 31st March 2022, for contracts that had an original expected duration of more than one year, the group had unsatisfied performance obligations of £1,039 million (2021: £921 million), representing contractually committed revenue to be recognised at a future date. Of this amount, £244 million (2021: £361 million) is expected to be recognised within one year and £795 million (2021: £560 million) is expected to be recognised after one year.

Payment terms

The group and parent company supply goods and services on payment terms that are consistent with those standard across the industry and it does not have any customer contracts with a material financing component. Where revenue is recognised over time, payment terms are generally consistent with the timeframe over which revenue is recognised.

4 Operating profit

Operating profit from continuing operations is arrived at after charging / (crediting):

	2022 £ million	2021 £ million*
Total research and development expenditure	201	185
Less: Development expenditure capitalised	(22)	(17)
Research and development expenditure charged to the income statement	179	168
Less: External funding received – from governments	(18)	(12)
Net research and development expenditure charged to the income statement	**161**	**156**
Inventories recognised as an expense	14,121	13,638
Write-down of inventories recognised as an expense	26	20
Reversal of write-down of inventories from increases in net realisable value	(16)	(10)
Net gains on foreign exchange	(2)	(56)
Net losses on foreign currency forwards at fair value through profit or loss	6	58
Past service credit	(11)	(3)
Depreciation of:		
Property, plant and equipment	125	126
Right-of-use assets	13	13
Depreciation	**138**	**139**
Amortisation of:		
Internally generated intangible assets	1	2
Acquired intangibles	6	10
Other intangible assets	32	19
Amortisation	**39**	**31**
Gains and losses on significant legal proceedings	**(42)**	**–**
Profit on disposal of businesses (note 28)	**(106)**	**–**
Impairment losses included in administrative expenses	3	31
Impairment losses (note 5)	**3**	**31**
Impairment losses included in major impairment and restructuring charges	401	80
Restructuring charges included in major impairment and restructuring charges	39	74
Major impairment and restructuring charges (note 6)	**440**	**154**

* Restated to reflect classification of the Health segment as discontinued operations (see note 27).

Profit on disposal of businesses

On 31st January 2022, the group completed the sale of its Advanced Glass Technologies business for a cash consideration of £173 million. With net assets of £39 million, a non-underlying gain of £106 million has been recognised in the year to 31st March 2022 after deal costs and FX recycling. See note 28.

Gains and losses on significant legal proceedings

During the year, the group recognised a gain of £44 million in relation to damages and interest from a company found to have unlawfully copied one of our technology designs. An additional gain of £6 million was recognised following conclusion of legal proceedings associated to investments in Battery Materials, this was partially offset by a £8 million charge for environmental and other costs. The net gain is reported as non-underlying, see note 36.

	2022 £ million	2021 £ million
Fees payable to the company's auditor and its associates for:		
The audit of these accounts	2.1	2.0
The audit of the accounts of the company's subsidiaries	2.4	2.3
The audit of prior period accounts	0.2	0.7
Total audit fees	**4.7**	5.0
Audit-related assurance services	0.4	0.3
Total non-audit fees	**0.4**	0.3
Total fees payable to the company's auditor and its associates	**5.1**	5.3

No audit fees were paid to other auditors (2021: £nil).

Audit-related assurance services predominantly comprise of reviews of interim financial information.

5 Impairment losses

During the year ended 31st March 2022, as part of our review for impairment triggers an impairment loss has been recognised in the group income statement within underlying operating profit. These losses are stated below:

	2022 £ million	2021 £ million*
Other intangible assets	1	8
Property, plant and equipment	2	2
Investments in joint ventures and associates	–	21
Total impairment losses included in administrative expenses	**3**	**31**

Total impairment losses incurred for the year of £632 million comprises major impairment losses of £401 million (see note 6), impairment losses incurred by discontinued operations of £228 million (see note 27) and £3 million of impairment losses included within administrative expenses.

FINANCIAL STATEMENTS

5 Impairment losses (continued)

Goodwill

Impairment testing

The group and parent company test goodwill annually for impairment or more frequently if there are indications that goodwill might be impaired. The recoverable amounts of the cash-generating units (CGUs) are determined using value in use calculations which generally use cash flow projections based on financial budgets and plans covering a three-year period approved by management. The budgets and plans are based on a number of assumptions, including market share, impact of carbon pricing, expected changes to selling prices, product profitability, precious metal prices and other direct input costs, based on past experience and management's expectations of future changes in the markets using external sources of information where appropriate. We also considered the physical risk of climate change – including the effect of extreme weather events at sample strategic sites, based on internal and external analysis.

Significant CGUs

Goodwill arising on the acquisition of businesses is allocated, at acquisition, to the CGUs that are expected to benefit from that business combination. These CGUs represent the smallest identifiable groups of assets that generate cash inflows that are largely independent of the cash inflows from other groups of assets. Goodwill allocated to the significant CGUs is as follows:

	Group		Parent company	
	2022 £ million	2021 £ million	**2022 £ million**	2021 £ million
Clean Air				
• Heavy Duty Catalysts	83	83	–	–
Efficient Natural Resources				
• Catalyst Technologies	265	264	113	113
• Diagnostic Services[1]	4	49	–	–
• Other	2	2	–	–
Health[2]				
• Generics[3]	–	117	–	–
• Innovators	–	26	–	2
Other Markets[4]	12	13	–	–
Total carrying amount at 31st March (note 12)	**366**	**554**	**113**	**115**

1. Diagnostic Services goodwill has been impaired by £45 million. Refer to note 6 for further information.
2. Health goodwill has been fully impaired upon reclassification of the business to held for sale. Refer to note 27 for further information.
3. Goodwill recognised on the acquisition of Macfarlan Smith is allocated to the Generics CGU which comprises both the legacy Macfarlan Smith business and the group's other generics businesses reflecting the way that the group monitors and manages its operations.
4. Other Markets comprises CGUs with goodwill balances individually less than £5 million.

Unallocated corporate costs are split between CGUs based on their share of contribution. The three-year cash flows are extrapolated using the long term average growth rates for the relevant products, industries and countries in which the CGUs operate.

The expected economic life of the Heavy Duty Catalysts has been restricted to 2040 reflecting internal climate change targets and impact of legislation changes. In the medium term, growth will come from tightening emissions legislation driving demand for more sophisticated catalyst systems. Beyond the medium term, the world will increasingly use alternatives to the internal combustion engine which is reflected in the long-term decline rate used in our modelling.

Pre-tax discount rates, derived from the group's post-tax weighted average cost of capital of 7.7% (2021: 6.3%), adjusted for the risks applicable to each CGU are used to discount these projected risk-adjusted cash flows.

The key assumptions are:

	Discount rate		Long term growth rate	
	2022	2021	**2022**	2021
Clean Air				
• Heavy Duty Catalysts	11.6%	9.3%	-15.1%	-1.2%
Efficient Natural Resources				
• Catalyst Technologies	10.2%	8.7%	3.0%	2.5%
• Diagnostic Services	14.1%	9.2%	-1.3%	1.3%

Different long term growth rates are used for the Clean Air – Heavy Duty Catalysts CGU because of expected macroeconomic trends in the industry in which the business operates. The growth rate for years four to ten is expected to be 2.7% (2021: 0%). After that, growth is expected to decline and, therefore, the long term growth rate above is used for year eleven onwards.

The growth rate and discount rate assumptions for Diagnostic Services have also been updated to reflect the faster paced transition to non-carbon intensive industries and the simplification of our portfolio to focus on core markets.

5 Impairment losses (continued)

Sensitivity analysis

The headroom for the significant CGUs, calculated as the difference between net assets including allocated goodwill at 31st March 2022 and the value in use calculations, is shown below. The table also shows, for each significant CGU, the headroom assuming a 1% decrease in the growth rate assumptions and a 1% increase in the discount rate assumption used in the value in use calculations.

	Headroom as at 31st March 2022 £ million	Headroom assuming a 1% decrease in the growth rate £ million	Headroom assuming a 1% increase in the discount rate £ million
Clean Air			
• Heavy Duty Catalysts	440	398	383
Efficient Natural Resources			
• Catalyst Technologies	701	513	501

A reduction in the Heavy Duty Catalysts CGU's expected economic life by one year to 2039, reduces headroom by approximately £10 million from £440 million.

A reduction in the Diagnostics Services CGU's growth rate or increase in discount rate by 1% would increase the impairment of £45 million at 31st March 2022 by approximately £3 million.

6 Major impairment and restructuring charges

The below amounts are excluded from the underlying operating profit of the group from continuing operations.

	2022 £ million	2021 £ million*
Property, plant and equipment	238	26
Right-of-use assets	4	1
Goodwill	45	–
Other intangible assets	78	53
Inventories	17	–
Trade and other receivables	19	–
Impairment losses	**401**	80
Restructuring charges	**39**	74
Total major impairments and restructuring charges	**440**	154

* Restated to reflect classification of the Health segment as discontinued operations (see note 27).

Major impairment and restructuring charges are shown separately on the face of the income statement and excluded from underlying operating profit (see note 36).

Battery Materials – Following a detailed review of our Battery Materials business the group concluded that the potential future returns from the business would not be adequate to justify further investment. Accordingly on 11th November 2021, the group announced the decision to pursue the sale of all or parts of the business. An impairment charge of £314 million was taken at 30th September 2021 to a net book value to £nil based on our estimate of the recoverable amount at that time. For the full year, we have determined a further impairment charge of £11 million to £325 million based on fair value less costs to sell. The 31st March 2022 impairment charge comprises property, plant and equipment (£237 million), right-of-use assets (£4 million), other intangible assets (£70 million) and trade and other receivables (£6 million). A further £8 million was impaired in relation to associated intangible assets held in Corporate. The Battery Materials restructuring charge was £38 million for exit costs including redundancies.

Diagnostic Services – We updated our long term market assumptions for the oil and gas industry in which the Diagnostic Services business serves customers and considered faster paced transition to non-carbon intensive industries and alignment with the group's overall strategy. This has resulted in an impairment to goodwill of £45 million. Please see note 12.

Russia/Ukraine conflict – As announced on 7th March 2022, we discontinued with immediate effect all new commercial activities in Russia and Belarus in light of the ongoing conflict in Ukraine. Our operations in Russia include one small Clean Air manufacturing plant which has been written down to £nil, and a small Catalyst Technologies office. We have determined an impairment and restructuring charge of £32 million comprising of inventories (£17 million), receivables (£13 million), property, plant and equipment (£1 million) and a restructuring charge (£1 million).

In the prior year, excluding the Health segment, the group incurred non-underlying major impairment and restructuring charges of £154 million. The charges were in relation to efficiency initiatives that are transforming our organisation to create a more simple and efficient group allowing us to act with greater agility and pace in a dynamic external environment. There have been no further charges in relation to these initiatives in the current year.

7 Employee information

Employee numbers

	2022	2021*
Clean Air	5,846	5,602
Efficient Natural Resources	3,321	3,540
Health (discontinued)	900	914
Other Markets	2,171	2,367
Corporate[1]	1,259	1,137
Monthly average number of employees	**13,497**	**13,560**

* The comparative year is restated to reflect the group's updated reporting segments. The overall group total is as previously reported.

	2022 £ million	2021 £ million**
Wages and salaries	583	563
Social security costs	60	64
Post-employment costs (note 24)	62	65
Share-based payments (note 31)	13	14
Termination benefits	3	3
Employee benefits expense from continuing operations	**721**	**709**

** Restated to reflect classification of the Health segment as discontinued operations (see note 27).

1. The Corporate segment includes global functions serving our business units including procurement, HR, IT and shared service centres

8 Net finance costs

	2022 £ million	2021 £ million
Net loss on remeasurement of foreign currency swaps held at fair value through profit or loss	(19)	(8)
Interest payable on financial liabilities held at amortised cost and interest on related swaps	(45)	(53)
Interest payable on other liabilities[1]	(35)	(94)
Interest payable on lease liabilities	(2)	(3)
Total finance costs	**(101)**	**(158)**
Net gain on remeasurement of foreign currency swaps held at fair value through profit or loss	6	–
Interest receivable on financial assets held at amortised cost	2	4
Interest receivable on other assets[1]	31	64
Interest on post-employment benefits	2	5
Total finance income	**41**	**73**
Net finance costs from continuing operations	**(60)**	**(85)**

1. Interest payable and receivable on other liabilities and assets mainly comprises interest on precious metal leases and the amortisation of contango and backwardation on precious metal inventory and sale and repurchase agreements.

9 Tax expense

	2022 £ million	2021 £ million
Current tax		
Corporation tax on profit for the year	55	131
Adjustment for prior years	(5)	(4)
Total current tax	**50**	**127**
Deferred tax		
Origination and reversal of temporary differences	(1)	(92)
Adjustment for prior years	8	(2)
Total deferred tax (note 23)	**7**	**(94)**
Tax expense	**57**	**33**

The tax expense can be reconciled to profit before tax in the income statement as follows:

	2022 £ million	2021 £ million
Profit before tax from continuing operations	**195**	**224**
(Loss) / profit before tax from discontinued operations	(239)	14
(Loss) / profit before tax	**(44)**	**238**
Tax (credit)/expense at UK corporation tax rate of 19% (2021: 19%)	(8)	45
Effects of:		
Overseas tax rates	13	4
Expenses not deductible for tax purposes	9	2
Losses and other temporary differences not recognised	1	5
Impairment and restructuring charges	70	–
Recognition or utilisation of previously unrecognised tax assets	(1)	(7)
Adjustment for prior years	3	(6)
Patent box / Innovation box	(10)	(14)
Other tax incentives	(5)	(4)
Tax rate adjustments	(1)	–
Disposal of businesses	(28)	–
Irrecoverable withholding tax	9	–
Other	5	8
Tax expense	**57**	**33**
Tax expense from continuing operations	79	30
Tax (credit)/expense from discontinued operations	(22)	3
Tax expense	**57**	**33**

In the March 2021 Budget the UK Government announced that legislation will be introduced in Finance Bill 2021 to increase the main rate of UK corporation tax from 19% to 25%, effective 1st April 2023. Included in the tax charge is a deferred tax charge of £1 million in relation to the UK rate change from 19% to 25%, which was enacted on 24th May 2021. In addition, there is a tax credit to other comprehensive income of £9 million in respect of the impact of the rate change on post-employment assets.

Included in the current year results is a profit on the disposal of the AGT business the majority of which has been treated as non-taxable.

Adjustment for prior years includes current and deferred tax adjustments in respect of the UK, US, Japan and Germany, as well as adjustments in respect of provisions for uncertain tax positions.

Other tax incentives includes research and development tax incentives in the US and China and other tax incentives in Poland.

Other movements mainly includes movements in respect of provisions for uncertain tax positions.

10 (Loss) / earnings per ordinary share

(Loss) / earnings per ordinary share have been calculated by dividing loss or profit for the year by the weighted average number of shares in issue during the year.

	2022 pence	2021 pence
(Loss) / earnings per share		
Basic	(52.6)	106.5
Diluted	(52.6)	106.4
Basic from continuing operations	60.9	100.9
Diluted from continuing operations	60.8	100.8

See note 27 for the earnings per ordinary share from discontinued operations.

	2022	2021
(Loss) / earnings (£ million)		
Basic and diluted (loss) / earnings	(101)	205
Weighted average number of shares in issue		
Basic	191,568,756	192,711,413
Dilution for long-term incentive plans	585,024	260,753
Diluted	**192,153,780**	192,972,166

Presented (loss) / earnings per ordinary share have been calculated using unrounded numbers.

11 Property, plant and equipment

Group

	Land and buildings £ million	Leasehold improvements £ million	Plant and machinery £ million	Assets in the course of construction £ million	Total £ million
Cost					
At 1st April 2020	627	24	2,171	486	3,308
Additions	1	–	28	254	283
Transfers from assets in the course of construction	78	10	247	(335)	–
Disposals	(1)	(1)	(29)	(6)	(37)
Disposal of businesses	–	(1)	(10)	–	(11)
Exchange adjustments	(38)	(1)	(97)	(22)	(158)
At 31st March 2021	667	31	2,310	377	3,385
Additions	1	1	38	339	379
Transferred to assets classified as held for sale (note 27)	(107)	(5)	(392)	(282)	(786)
Transfers from assets in the course of construction	11	1	120	(132)	–
Disposals	(1)	–	(25)	(1)	(27)
Disposal of businesses (note 28)	(13)	(1)	(44)	(1)	(59)
Exchange adjustments	12	–	48	4	64
At 31st March 2022	570	27	2,055	304	2,956
Accumulated depreciation and impairment					
At 1st April 2020	317	17	1,554	17	1,905
Charge for the year	20	1	123	–	144
Impairment losses (notes 5, 6 and 27)	3	–	27	3	33
Disposals	(2)	(1)	(26)	(1)	(30)
Disposal of businesses	–	–	(7)	–	(7)
Exchange adjustments	(17)	–	(65)	(2)	(84)
At 31st March 2021	321	17	1,606	17	1,961
Charge for the year	18	2	117	–	137
Impairment losses (notes 5, 6 and 27)	21	–	64	210	295
Transferred to assets classified as held for sale (note 27)	(91)	(4)	(335)	(210)	(640)
Disposals	(1)	–	(23)	–	(24)
Disposal of businesses (note 28)	(8)	(2)	(38)	–	(48)
Exchange adjustments	5	1	33	(2)	37
At 31st March 2022	265	14	1,424	15	1,718
Carrying amount at 31st March 2022	**305**	**13**	**631**	**289**	**1,238**
Carrying amount at 31st March 2021	346	14	704	360	1,424
Carrying amount at 1st April 2020	310	7	617	469	1,403

Finance costs capitalised were £5 million (2021: £5 million) and the capitalisation rate used to determine the amount of finance costs eligible for capitalisation was 4.2% (2021: 2.9%).

11 Property, plant and equipment (continued)

During the year, the group recognised impairments of £295 million. The impairment charge compromises of £2 million included in administrative expenses, see note 5, and £238 million included in non-underlying expenses, see note 6. A further £55 million of impairment charges were incurred in relation to the Health segment, see note 27. During the prior year, the group recognised impairments in respect of four sites and plants, Clean Air (£18 million), Efficient Natural Resources (£4 million), Health (£5 million), and New Markets (£4 million), which were included in major impairment and restructuring charges, and additional impairments of £2 million, which were recognised in underlying operating profit.

The total capital expenditure in the year for discontinued operations equalled £22 million (2021: £24 million).

The depreciation charge for the year for discontinued operations equalled £12 million (2021: £20 million).

Parent company

	Land and buildings £ million	Leasehold improvements £ million	Plant and machinery £ million	Assets in the course of construction £ million	Total £ million
Cost					
At 31st March 2021	127	2	627	122	878
Additions	–	1	20	82	103
Transferred to assets classified as held for sale	–	–	49	(49)	–
Reclassification	(1)	–	(30)	(20)	(51)
Disposals	–	–	(6)	(5)	(11)
Disposals of businesses	–	–	(2)	–	(2)
At 31st March 2022	126	3	658	130	917
Accumulated depreciation and impairment					
At 31st March 2021	81	2	489	(1)	571
Charge for the year	3	–	29	–	32
Impairment losses	1	–	22	18	41
Transferred to assets classified as held for sale	(1)	–	(27)	(17)	(45)
Disposals	–	–	(2)	–	(2)
Disposals of businesses	–	–	(2)	–	(2)
At 31st March 2022	84	2	509	–	595
Carrying amount at 31st March 2022	**42**	**1**	**149**	**130**	**322**
Carrying amount at 31st March 2021	46	–	138	123	307

Finance costs capitalised were £1 million (2021: £1 million) and the capitalisation rate used to determine the amount of finance costs eligible for capitalisation was 4.2% (2021: 2.9%).

During the year, the parent company recognised impairments resulting from its intention to exit Battery Materials, determining an impairment charge based on our estimate of the recoverable amount of the assets at 31st March 2022.

12 Goodwill

	Group £ million	Parent company £ million
Cost		
At 1st April 2020	598	123
Disposal of business	(9)	–
Exchange adjustments	(17)	–
At 31st March 2021	572	123
Disposal of businesses (note 28)	(2)	–
Exchange adjustments	3	–
At 31st March 2022	573	123
Impairment		
At 1st April 2020	18	8
At 31st March 2021	18	8
Impairment losses (notes 5 and 27)	189	2
At 31st March 2022	207	10
Carrying amount at 31st March 2022	**366**	**113**
Carrying amount at 31st March 2021	554	115
Carrying amount at 1st April 2020	580	115

During the year, the Health segment was fully impaired by £144 million upon reclassification to assets held for sale. Refer to note 27 for further information. The Diagnostic Services goodwill was impaired by £45 million. Refer to note 5 for further information.

13 Other intangible assets

Group

	Customer contracts and relationships £ million	Computer software £ million	Patents, trademarks and licences £ million	Acquired research and technology £ million	Development expenditure £ million	Total £ million
Cost						
At 1st April 2020	146	321	64	50	218	799
Additions	–	53	–	–	22	75
Disposals	–	(3)	(2)	–	(4)	(9)
Reclassification	–	–	5	(5)	–	–
Disposal of businesses	(9)	–	–	(1)	–	(10)
Exchange adjustments	(4)	(4)	(2)	(2)	(10)	(22)
At 31st March 2021	133	367	65	42	226	833
Additions	–	66	1	–	33	100
Transferred to assets classified as held for sale (note 27)	–	(15)	(20)	(5)	(127)	(167)
Disposal of businesses (note 28)	(1)	(2)	–	–	–	(3)
Exchange adjustments	–	3	1	–	3	7
At 31st March 2022	132	419	47	37	135	770
Accumulated amortisation and impairment						
At 1st April 2020	113	71	40	39	140	403
Charge for the year	5	19	1	4	3	32
Impairment losses (notes 5, 6 and 27)	–	58	9	–	–	67
Disposals	–	(2)	(1)	–	(4)	(7)
Disposal of businesses	(4)	–	–	(1)	–	(5)
Exchange adjustments	(6)	(2)	(3)	(1)	(4)	(16)
At 31st March 2021	108	144	46	41	135	474
Charge for the year	4	31	1	2	1	39
Impairment losses (notes 5, 6 and 27)	–	15	12	–	75	102
Transferred to assets classified as held for sale (note 27)	–	(13)	(18)	(5)	(79)	(115)
Reclassification	–	–	2	(2)	–	–
Disposal of businesses (note 28)	(1)	(2)	–	–	–	(3)
Exchange adjustments	1	3	1	–	1	6
At 31st March 2022	112	178	44	36	133	503
Carrying amount at 31st March 2022	**20**	**241**	**3**	**1**	**2**	**267**
Carrying amount at 31st March 2021	25	223	19	1	91	359
Carrying amount at 1st April 2020	33	250	24	11	78	396

13 Other intangible assets (continued)

During the year, the group recognised impairments of £102 million. The impairment charge compromises of £1 million included in administrative expenses, see note 5, and £78 million included in non-underlying expenses, see note 6. A further £23 million of impairment charges were incurred in relation to the Health segment, see note 27. During the prior year, the group recognised impairments in respect of licences (£3 million) as part of a site closure in Efficient Natural Resources and information systems (£56 million), which were included in major impairment and restructuring charges, and additional impairments of £8 million, which were recognised in underlying operating profit.

The total capital expenditure in the year for the discontinued operations equalled £11 million (2021: £5 million).

The total amortisation charge in the year for discontinued operations equalled £nil (2021: £1 million).

Parent company

	Computer software £ million	Patents, trademarks and licences £ million	Acquired research and technology £ million	Development expenditure £ million	Total £ million
Cost					
At 31st March 2021	322	32	5	51	410
Additions	63	1	–	22	86
Transferred to assets classified as held for sale	(3)	(14)	–	(60)	(77)
At 31st March 2022	382	19	5	13	419
Accumulated amortisation and impairment					
At 31st March 2021	108	13	7	17	145
Charge for the year	31	1	(1)	–	31
Impairment losses	12	13	–	52	77
Transferred to assets classified as held for sale	(2)	(11)	(2)	(52)	(67)
At 31st March 2022	149	16	4	17	186
Carrying amount at 31st March 2022	**233**	**3**	**1**	**(4)**	**233**
Carrying amount at 31st March 2021	214	19	(2)	34	265

During the year, the parent company recognised impairments of £77 million, £75 million resulting from our decision to exit Battery Materials and £2 million in respect of Health.

14 Investments in subsidiaries

Parent company

	Cost of investments in subsidiaries £ million	Accumulated impairment £ million	Carrying amount £ million
At 31st March 2021 and 31st March 2022	**2,183**	**(262)**	**1,921**

The parent company's subsidiaries are shown in note 35.

15 Interest rate swaps

	Group		Parent company	
	2022 £ million	2021 £ million	**2022 £ million**	2021 £ million
Cross currency interest rate swaps designated as cash flow hedges	11	8	11	8
Interest rate swaps designated as fair value hedges	–	12	–	12
Interest rate swaps – non current assets	**11**	**20**	**11**	**20**
Interest rate swaps designated as fair value hedges	1	–	1	–
Interest rate swaps – current assets	**1**	**–**	**1**	**–**
Interest rate swaps designated as fair value hedges	(2)	–	(2)	–
Interest rate swaps – non-current liabilities	**(2)**	**–**	**(2)**	**–**

16 Inventories

	Group		Parent company	
	2022 £ million	2021 £ million	**2022 £ million**	2021 £ million
Raw materials and consumables	331	286	45	45
Work in progress	932	1,213	488	481
Finished goods and goods for resale	286	315	33	53
Inventories	**1,549**	**1,814**	**566**	**579**

Work in progress includes £0.7 billion (31st March 2021: £0.9 billion) of precious metal which is committed to future sales to customers and valued at the price at which it is contractually committed.

FINANCIAL STATEMENTS

17 Trade and other receivables

	Group 2022 £ million	Group 2021 £ million	Parent company 2022 £ million	Parent company 2021 £ million
Current				
Trade receivables	1,393	1,571	141	310
Contract receivables	88	181	16	60
Amounts receivable from subsidiaries	–	–	1,604	1,438
Prepayments	75	88	26	34
Value added tax and other sales tax receivable	89	119	23	34
Advance payments to customers	10	11	–	–
Amounts receivable under precious metal sale and repurchase agreements[1]	114	308	114	307
Other receivables	27	144	17	114
Trade and other receivables	**1,796**	**2,422**	**1,941**	**2,297**
Non-current				
Amounts receivable from subsidiaries	–	–	1,598	1,312
Value added tax and other sales tax receivable	3	2	–	–
Prepayments	–	3	–	3
Advance payments to customers	39	45	–	–
Other receivables	**42**	**50**	**1,598**	**1,315**

1. The fair value of the precious metal contracted to be sold by the group under sale and repurchase agreements is £108 million (2021: £407 million).

Of the parent company's amounts receivable from subsidiaries, £441 million is impaired (2021: £153 million). The parent company recognised an impairment during the year of £214 million in respect of amounts receivable from the Health segment and £74 million in relation to amounts receivable from the Battery Materials business. Future expected credit losses on intercompany receivables are immaterial.

The group enters into factoring type arrangements in a small number of countries as part of normal business due to longer than standard payment terms, we seek to collect payments in the month following sale. As at 31st March 2022, the level of these arrangements was approximately £200 million (31st March 2021: approximately £300 million).

Trade receivables and contract receivables are net of expected credit losses (see note 29). Of the total trade and contract receivables balance £114 million is past due (2021: £78 million), against which an allowance for credit losses of £3 million (2021: £3 million) have been recorded.

18 Other financial assets and liabilities

	Group 2022 £ million	Group 2021 £ million	Parent company 2022 £ million	Parent company 2021 £ million
Forward foreign exchange contracts designated as cash flow hedges	5	12	5	12
Forward foreign exchange contracts and currency swaps at fair value through profit or loss	22	32	22	33
Other financial assets	**27**	**44**	**27**	**45**
Current liabilities				
Forward foreign exchange contracts designated as cash flow hedges	(9)	(4)	(11)	(8)
Forward precious metal price contracts designated as cash flow hedges	(20)	(8)	(20)	(8)
Forward foreign exchange contracts and currency swaps at fair value through profit or loss	(15)	(6)	(15)	(6)
Other financial liabilities	**(44)**	**(18)**	**(46)**	**(22)**
Non-current liabilities				
Forward precious metal price contracts designated as cash flow hedges	(12)	–	(12)	–
Other financial liabilities	**(12)**	**–**	**(12)**	**–**

19 Trade and other payables

	Group 2022 £ million	Group 2021 £ million	Parent company 2022 £ million	Parent company 2021 £ million
Current				
Trade payables	753	996	222	321
Contract liabilities	273	184	35	78
Amounts payable to subsidiaries	–	–	2,869	2,354
Accruals	439	369	220	167
Amounts payable under precious metal sale and repurchase agreements[1]	793	1,442	684	1,371
Other payables	305	334	228	246
Current trade and other payables	**2,563**	**3,325**	**4,258**	**4,537**
Non-current				
Amounts payable to subsidiaries	–	–	267	267
Other payables	2	5	1	1
Non-current other payables	**2**	**5**	**268**	**268**

1. The fair value of the precious metal contracted to be repurchased by the group under sale and repurchase agreements is £782 million (2021: £1,766 million).

The amount of the contract liabilities balance at 31st March 2021 which was recognised in revenue during the year ended 31st March 2022 for the group company was £113 million (2021: £91 million).

20 Borrowings and related swaps

	Group 2022 £ million	Group 2021 £ million	Parent company 2022 £ million	Parent company 2021 £ million
Non-current				
Bank and other loans				
€166 million EIB loan 2022	–	(141)	–	(141)
3.26% $150 million Bonds 2022	–	(113)	–	(113)
2.99% $165 million Bonds 2023	(125)	(120)	(125)	(120)
2.44% €20 million Bonds 2023	(17)	(17)	(17)	(17)
3.57% £65 million Bonds 2024	(65)	(65)	(65)	(65)
3.565% $50 million KfW loan 2024	(38)	(36)	(38)	(36)
3.14% $130 million Bonds 2025	(99)	(94)	(99)	(94)
1.40% €77 million Bonds 2025	(64)	(67)	(64)	(67)
2.54% £45 million Bonds 2025	(45)	(45)	(45)	(45)
€45 million KfW loan 2025	–	(38)	–	(38)
3.79% $130 million Bonds 2025	(99)	(95)	(99)	(95)
3.97% $120 million Bonds 2027	(90)	(87)	(90)	(87)
€90 million EBRD loan 2027	–	(76)	–	(76)
3.39% $180 million Bonds 2028	(137)	(131)	(137)	(131)
1.81% €90 million Bonds 2028	(74)	(81)	(74)	(81)
4.10% $30 million Bonds 2030	(23)	(22)	(23)	(22)
2.92% €25 million Bonds 2030	(21)	(21)	(21)	(21)
Cross currency interest rate swaps designated as net investment hedges	(2)	(3)	–	–
Cross currency interest rate swaps designated as fair value hedges	–	–	(2)	(3)
Borrowings and related swaps	**(899)**	**(1,252)**	**(899)**	**(1,252)**
Current				
€166 million EIB loan 2022	(140)	–	(140)	–
3.26% $150 million Bonds 2022	(115)	–	(115)	–
Other bank loans	(10)	(26)	–	–
Borrowings and related swaps	**(265)**	**(26)**	**(255)**	**–**

The 3.26% $150 million Bonds 2022 have been swapped into floating rate US dollars. The 1.40% €77 million Bonds 2025 and the 1.81% €90 million Bonds 2028 have been swapped into floating rate euros. $100 million of the 3.14% $130 million Bonds 2025 have been swapped into sterling at 2.83%.

All borrowings bear interest at fixed rates with the exception of the EIB loan 2022 and the bank overdrafts, which bear interest at commercial floating rates.

During the year, the group refinanced its existing debt and secured financing of £667 million using year end exchange rates with a delayed drawdown for the financial year to 31st March 2023. This financing was not drawn down as at 31st March 2022. The margins on these new facilities are nominally impacted by the group's ability to meet targets around the reduction in its scope 1 and 2 emissions. Additionally on 31st March 2022 the group repaid its €45 million KfW loan and €90 million EBRD loans from the prior year end.

21 Movements in assets and liabilities arising from financing activities

	2021 £ million	Cash (inflow) / outflow £ million	Non-cash movements: Transfers £ million	Non-cash movements: Transfers to held for sale £ million	Non-cash movements: Foreign exchange movements £ million	Non-cash movements: Fair value and other movements £ million	2022 £ million
Non-current assets							
Interest rate swaps	20	–	(12)	–	–	3	**11**
Non-current liabilities							
Borrowings and related swaps	(1,252)	114	254	–	(26)	11	**(899)**
Interest rate swaps	–	–	8	–	–	(10)	**(2)**
Lease liabilities	(51)	–	15	7	–	(11)	**(40)**
Current assets							
Interest rate swaps	–	–	4	–	–	(3)	**1**
Current liabilities							
Borrowings and related swaps	(26)	17	(254)	–	(5)	3	**(265)**
Lease liabilities	(11)	14	(15)	2	–	–	**(10)**
Net movements in assets and liabilities arising from financing activities	**–**	**145**	**–**	**9**	**(31)**	**(7)**	
Dividends paid to equity shareholders	–	139					
Interest paid	–	111					
Purchase of treasury shares	–	155					
Net cash outflow from financing activities	**–**	**550**					

	2020 £ million	Cash (inflow) / outflow £ million	Non-cash movements: Transfers £ million	Non-cash movements: Foreign exchange movements £ million	Non-cash movements: Fair value and other movements £ million	2021 £ million
Non-current assets						
Interest rate swaps	34	–	–	–	(14)	**20**
Non-current liabilities						
Borrowings and related swaps	(994)	(366)	–	100	8	**(1,252)**
Lease liabilities	(64)	–	14	1	(2)	**(51)**
Current liabilities						
Borrowings and related swaps	(331)	296	–	9	–	**(26)**
Lease liabilities	(12)	14	(14)	1	–	**(11)**
Net movements in assets and liabilities arising from financing activities	**–**	**(56)**	**–**	**111**	**(8)**	
Dividends paid to equity shareholders	–	99				
Interest paid	–	159				
Net cash outflow from financing activities	**–**	**202**				

22 Provisions

Group

	Restructuring provisions £ million	Warranty and technology provisions £ million	Other provisions £ million	Total £ million
At 1st April 2020	2	9	9	20
Charge for the year	69	2	7	78
Utilised	(23)	–	(4)	(27)
Released	(6)	(3)	(1)	(10)
Exchange adjustments	–	–	1	1
At 31st March 2021	42	8	12	62
Charge for the year	18	–	26	44
Utilised	(15)	(1)	(1)	(17)
Released	–	(2)	–	(2)
Transferred to liabilities classified as held for sale (note 27)	(3)	–	–	(3)
At 31st March 2022	**42**	**5**	**37**	**84**

	2022 £ million	2021 £ million
Current	56	35
Non-current	28	27
Total provisions	**84**	**62**

Restructuring
The restructuring provisions are part of the group's efficiency initiatives (see note 6).

Warranty and technology
The warranty and technology provisions represent management's best estimate of the group's liability under warranties granted and remedial work required under technology licences based on past experience in Clean Air, Efficient Natural Resources and Other Markets. Warranties generally cover a period of up to three years.

Other
The other provisions include environmental and legal provisions arising across the group. Amounts provided reflect management's best estimate of the expenditure required to settle the obligations at the balance sheet date.

Parent company

	Restructuring provisions £ million	Other provisions £ million	Total £ million
At 1st April 2020	–	86	86
Charge for the year	53	–	53
Net sale of metal	–	86	86
Utilised	(14)	–	(14)
Released	(6)	–	(6)
At 31st March 2021	33	172	205
Charge for the year	7	3	10
Net sale of metal	–	(28)	(28)
Utilised	(7)	–	(7)
Released	(2)	–	(2)
At 31st March 2022	**31**	**147**	**178**

	2022 £ million	2021 £ million
Current	162	187
Non-current	16	18
Total provisions	**178**	**205**

The restructuring provisions are part of the parent company's efficiency initiatives.

The other provisions include provisions to buy metal to cover short positions created by the parent company selling metal to cover price risk on metal owned by subsidiaries. Amounts provided reflect management's best estimate of the expenditure required to settle the obligations at the balance sheet date.

The parent company also guarantees some of its subsidiaries' borrowings and its exposure at 31st March 2022 was £4 million (2021: £35 million).

23 Deferred tax

Group

	Property, plant and equipment £ million	Post-employment benefits £ million	Provisions £ million	Inventories £ million	Intangibles £ million	Other £ million	Total deferred tax (assets) / liabilities £ million
At 1st April 2020	25	52	(26)	(51)	12	(4)	8
Charge / (credit) to the income statement	(22)	2	(25)	(45)	(9)	5	(94)
Tax on items taken directly to or transferred from equity	–	(28)	–	–	–	(1)	(29)
Exchange adjustments	(2)	1	3	2	(1)	–	3
At 31st March 2021	1	27	(48)	(94)	2	–	(112)
Charge / (credit) to the income statement (note 9)	(39)	23	7	44	(3)	(25)	7
Tax on items taken directly to or transferred from equity	–	35	–	–	–	(8)	27
Exchange adjustments	1	–	(3)	1	(1)	–	(2)
At 31st March 2022	**(37)**	**85**	**(44)**	**(49)**	**(2)**	**(33)**	**(80)**

	2022 £ million	2021 £ million
Deferred tax assets	(98)	(140)
Deferred tax liabilities	18	28
Net amount	**(80)**	**(112)**

Deferred tax has not been recognised in respect of tax losses of £135 million (2021: £165 million) and other temporary differences of £24 million (2021: £22 million). Of the total tax losses, £41 million (2021: £43 million) is expected to expire within 5 years, £12 million within 5 to 10 years (2021: £18 million), £38 million after 10 years (2021: £35 million) and £43 million carry no expiry (2021: £68 million). These deferred tax assets have not been recognised on the basis that their future economic benefit is not probable.

In addition, the group's overseas subsidiaries have net unremitted earnings of £820 million (2021: £1,764 million), resulting in temporary differences of £585 million (2021: £479 million). No deferred tax has been provided in respect of these differences since the timing of the reversals can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

The recognition of deferred tax assets has been determined by the recoverability of those assets against future tax liabilities as determined by budgets and plans that are showing profits in relevant businesses. The majority of the deferred tax assets and liabilities noted above are anticipated to be realised after more than 12 months.

23 Deferred tax (continued)

Parent company

	Property, plant and equipment £ million	Post-employment benefits £ million	Provisions £ million	Inventories £ million	Intangibles £ million	Other £ million	Total deferred tax (assets) / liabilities £ million
At 1st April 2020	(3)	65	–	(43)	1	12	32
(Credit) / charge to the income statement	(14)	1	(5)	(40)	–	–	(58)
Tax on items taken directly to or transferred from equity	–	(25)	–	–	–	(1)	(26)
At 31st March 2021	(17)	41	(5)	(83)	1	11	(52)
(Credit) / charge to income statement	(27)	21	1	38	(1)	(4)	28
Tax on items taken directly to or transferred from equity	–	30	–	–	–	(8)	22
At 31st March 2022	**(44)**	**92**	**(4)**	**(45)**	**–**	**(1)**	**(2)**

Deductible temporary differences, unused tax losses and unused tax credits not recognised on the balance sheet are £6 million (2021: £6 million) and have no expiry date.

24 Post-employment benefits

Group

Background

Pension plans

The group operates a number of post-employment retirement and medical benefit plans around the world. The retirement plans in the UK, US and other countries include both defined contribution and defined benefit plans.

For defined contribution plans, retirement benefits are determined by the value of funds arising from contributions paid in respect of each employee and the investment returns on those contributions prior to retirement.

For defined benefit plans, which include final salary, career average and other types of plans with committed pension payments, the retirement benefits are based on factors, such as the employee's pensionable salary and length of service. The majority of the group's final salary and career average defined benefit retirement plans are closed to new entrants, but remain open to ongoing accrual for current members.

Regulatory framework and governance

The UK pension plan, the Johnson Matthey Employees Pension Scheme (JMEPS), is a registered arrangement established under trust law and, as such, is subject to UK pension, tax and trust legislation. It is managed by a corporate trustee, JMEPS Trustees Limited. The trustee board includes representatives appointed by both the parent company and employees, and includes an independent chairman.

Although the parent company bears the financial cost of the plan, the trustee directors are responsible for the overall management and governance of JMEPS, including compliance with all applicable legislation and regulations. The trustee directors are required by law to act in the interests of all relevant beneficiaries and: to set certain policies; to manage the day-to-day administration of the benefits; and to set the plan's investment strategy following consultation with the parent company.

UK pensions are regulated by the Pensions Regulator whose statutory objectives and regulatory powers are described on its website: www.thepensionsregulator.gov.uk

The JMEPS Trustee Board considers how climate risk is integrated within investment processes when appointing, monitoring and withdrawing from investment managers using the investment consultant's Environmental, Social and Governance (ESG) ratings. The ESG ratings include consideration of climate risk management policies. On a periodic basis, JMEPS will review the ESG ratings assigned to the underlying investments based on the investment consultant's ESG research.

The US pension plans are qualified pension arrangements and are subject to the requirements of the Employee Retirement Income Security Act, the Pension Protection Act 2006 and the Department of Labor and Internal Revenue. The plans are managed by a pension committee which acts as the fiduciary and, as such, is ultimately responsible for: the management of the plans' investments; compliance with all applicable legislation and regulations; and overseeing the general management of the plans.

Other trustee or fiduciary arrangements that have similar responsibilities and obligations are in place for the group's other funded defined benefit pension plans outside of the UK and US.

24 Post-employment benefits (continued)

Group (continued)

Background (continued)

Benefits

The UK defined benefit pension plan is segregated into two sections – a legacy section which provides final salary and career average pension benefits and a cash balance section.

The legacy section provides benefits to members in the form of a set level of pension payable for life based on the member's length of service and final pensionable salary at retirement or averaged over their career with the company. The majority of the benefits attract inflation-related increases both before and after retirement. The final salary element of the legacy section was closed to future accrual of benefits from 1st April 2010 and the career average element of the legacy section was closed to new entrants on 1st October 2012, but remains open to future accrual for existing members.

The cash balance section provides benefits to members at the point of retirement in the form of a cash lump sum. The benefits attract inflation-related increases before retirement but, following the payment of the retirement lump sum benefit, the plan has no obligation to pay any further benefits to the member. All new employees join the cash balance section of the plan.

The group operates two defined benefit pension plans in the US. The hourly pension plan is for unionised employees and provides a fixed retirement benefit for life based upon years of service. The salaried pension plan provides retirement benefits for life based on the member's length of service and final pensionable salary (averaged over the last five years). The salaried plan benefits attract inflation-related increases before leaving, but are non-increasing thereafter. On retirement, members in either plan have the option to take the cash value of their benefit instead of a lifetime annuity in which case the plan has no obligation to pay any further benefits to the member.

The US salaried pension plan was closed to new entrants on 1st September 2013, and the US hourly pension plan was closed to new entrants on 1st January 2019, but both plans remains open to future accrual for existing members. All new US employees now join a defined contribution plan.

Other post-employment benefits

The group's principal post-employment medical plans are in the UK and US, and are unfunded arrangements that have been closed to new entrants for over ten years.

Maturity profile

The estimated weighted average durations of the defined benefit obligations of the main plans as at 31st March 2022 are:

	Weighted average duration Years
Pensions:	
UK	**20**
US	**12**
Post-retirement medical benefits:	
UK	**10**
US	**10**

Funding

Introduction

The group's principal defined benefit retirement plans are funded through separate fiduciary or trustee administered funds that are independent of the sponsoring company. The contributions paid to these arrangements are jointly agreed by the sponsoring company and the relevant trustee or fiduciary body after each funding valuation and in consultation with independent qualified actuaries. The plans' assets, together with the agreed funding contributions, should be sufficient to meet the plans' future pension obligations.

UK valuations

UK legislation requires that pension plans are funded prudently and that, when undertaking a funding valuation (every three years), assets are taken at their market value and liabilities are determined based on a set of prudent assumptions set by the trustee following consultation with their appointed actuary. The assumptions used for funding valuations may, therefore, differ to the actuarial assumptions used for IAS 19, *Employee Benefits*, accounting purposes.

In January 2013, a special purpose vehicle (SPV), Johnson Matthey (Scotland) Limited Partnership, was set up to provide deficit reduction contributions and greater security to the trustee. The group invested £50 million in a bond portfolio which is beneficially held by the SPV. The income generated by the SPV is used to make annual distributions of £3.5 million to JMEPS for a period of up to 25 years. These annual distributions are only payable if the legacy section of JMEPS continues to be in deficit, on a funding basis. This bond portfolio is held as a non-current investment at fair value through other comprehensive income and the group's liability to pay the income to the plan is not a plan asset under IAS 19 although it is for actuarial funding valuation purposes. The SPV is exempt from the requirement to prepare audited annual accounts as it is included on a consolidated basis in these accounts.

24 Post-employment benefits (continued)

Funding (continued)

UK valuations (continued)

A funding valuation of JMEPS was carried out as at 1st April 2021 and showed that there was a deficit of £9 million in the legacy section of the plan, or a surplus of £24 million after taking account of the future additional deficit contributions from the SPV. The valuation also showed a deficit in the cash balance section of the plan of £1 million. The next triennial actuarial valuation of JMEPS will be carried out as at 1st April 2024 with the results known later in the year. The assumptions used for funding valuations may differ to the actuarial *assumptions* used for IAS 19 accounting purposes.

In accordance with the governing documentation of JMEPS, any future plan surplus would be returned to the parent company by way of a refund assuming gradual settlement of the liabilities over the lifetime of the plan. As such, there are no adjustments required in respect of IFRIC 14, IAS 19 – *The Limit on a Defined Benefit Asset, Minimum Funding Requirements and their Interaction.*

US valuations

The last annual review of the US defined benefit pension plans was carried out by a qualified actuary as at 1st July 2021 and showed that there was a surplus of $9 million on the projected funding basis.

The assumptions used for funding valuations may differ to the actuarial assumptions used for IAS 19 accounting purposes.

Other valuations

Similar funding valuations are undertaken on the group's other defined benefit pension plans outside of the UK and US in accordance with prevailing local legislation.

Risk management

The group is exposed to a number of risks relating to its post-retirement pension plans, the most significant of which are:

Risk	Mitigation
Market (investment) risk	
Asset returns may not move in line with the liabilities and may be subject to volatility.	The group's various plans have highly diversified investment portfolios, investing in a wide range of assets that provide reasonable assurance that no single security or type of security could have a material adverse impact on the plan. A de-risking strategy is in place to reduce volatility in the plans as a result of the mismatch between the assets and liabilities. As the funding level of the plans improve and hit pre-agreed triggers, plan investments are switched from return-seeking assets to liability-matching assets. The plans implement partial currency hedging on their overseas assets to mitigate currency risk.
Interest (discount) rate risk	
Liabilities are sensitive to movements in bond yields (interest rates), with lower interest rates leading to an increase in the valuation of liabilities, albeit the impact on the plan's funding level will be partially offset by an increase in the value of its bond holdings.	The group's defined benefit plans hold a high proportion of their assets in government or corporate bonds, which provide a natural hedge against falling interest rates. In the UK, this interest rate hedge is extended by the use of interest rate swaps, such that approximately 80% of the plan's interest rate risk is currently hedged. The swaps are held with several banks to reduce counterparty risk.
Inflation risk	
Liabilities are sensitive to movements in inflation, with higher inflation leading to an increase in the valuation of liabilities.	Where plan benefits provide inflation-related increases, the plan holds some inflation-linked assets which provide a natural hedge against higher than expected inflation increases. In the UK, this inflation hedge is extended by the use of inflation swaps, such that approximately 80% of the plan's inflation risk is currently hedged. The swaps are held with several banks to reduce counterparty risk.
Longevity risk	
The majority of the group's defined benefit plans provide benefits for the life of the member, so the liabilities are sensitive to life expectancy, with increases in life expectancy leading to an increase in the valuation of liabilities.	The group has closed most of its defined benefit pension plans to new entrants, replacing them with either a cash balance plan or defined contribution plans, both of which are unaffected by life expectancy. For the plans where a benefit for life continues to be payable, prudent mortality assumptions are used that appropriately allow for a future improvement in life expectancy. These assumptions are reviewed on a regular basis.

24 Post-employment benefits (continued)

Contributions

During the year, total contributions to the group's post-employment defined benefit plans were £43 million (2021: £49 million). It is estimated that the group will contribute approximately £40 million to the post-employment defined benefit plans during the year ending 31st March 2023.

IAS 19 accounting

Principal actuarial assumptions

Qualified independent actuaries have updated the IAS 19 valuations of the group's major defined benefit plans to 31st March 2022. The assumptions used are chosen from a range of possible actuarial assumptions which, due to the long-term nature of the plans, may not necessarily be borne out in practice.

Financial assumptions

	2022 UK plan %	**2022 US plans %**	**2022 Other plans %**	2021 UK plan %	2021 US plans %	2021 Other plans %
First year's rate of increase in salaries	3.85	3.00	2.20	3.40	3.00	2.06
Ultimate rate of increase in salaries	3.85	3.00	2.20	3.40	3.00	2.06
Rate of increase in pensions in payment	3.20	–	2.11	3.05	–	1.70
Discount rate	2.80	3.70	2.13	2.10	3.00	1.53
Inflation	–	2.20	2.15	–	2.20	1.64
• UK Retail Prices Index (RPI)	3.60	–	–	3.20	–	–
• UK Consumer Prices Index (CPI)	3.10	–	–	2.65	–	–
Current medical benefits cost trend rate	5.40	–	–	5.40	2.20	–
Ultimate medical benefits cost trend rate	5.40	–	–	5.40	2.20	–

Demographic assumptions

The mortality assumptions are based on country-specific mortality tables and, where appropriate, include an allowance for future improvements in life expectancy. In addition, where credible data exists, actual plan experience is taken into account. The group's most substantial pension liabilities are in the UK and the US where, using the mortality tables adopted, the expected lifetime of average members currently at age 65 and average members at age 65 in 25 years' time (i.e. members who are currently aged 40 years) is respectively:

	Currently age 65		**Age 65 in 25 years**	
	UK plan	**US plans**	**UK plan**	**US plans**
Male	87	85	89	87
Female	90	87	92	89

24 Post-employment benefits (continued)

Financial information

Plan assets

Movements in the fair value of plan assets during the year were:

	UK pension – legacy section £ million	UK pension – cash balance section £ million	US pensions £ million	US post-retirement medical benefits £ million	Other £ million	Total £ million
At 1st April 2020	2,027	90	368	–	55	2,540
Administrative expenses	(3)	–	(1)	–	–	(4)
Interest income	46	2	10	–	2	60
Return on plan assets excluding interest	125	11	(4)	–	3	135
Employee contributions	3	7	1	1	–	12
Company contributions	9	21	16	1	1	48
Benefits paid	(65)	(3)	(32)	(2)	(2)	(104)
Exchange adjustments	–	–	(38)	–	(3)	(41)
At 31st March 2021	2,142	128	320	–	56	2,646
Administrative expenses	(2)	–	(1)	–	–	(3)
Interest income	44	3	10	–	1	58
Return on plan assets excluding interest	27	(2)	(15)	–	(1)	9
Employee contributions	3	7	1	1	–	12
Company contributions	9	22	9	1	1	42
Benefits paid	(63)	(2)	(27)	(2)	(3)	(97)
Disposal of business[1]	–	–	–	–	(46)	(46)
Exchange adjustments	–	–	13	–	–	13
At 31st March 2022	**2,160**	**156**	**310**	**–**	**8**	**2,634**

1. The reduction in assets relates to the disposal of the Advanced Glass Technologies business.

FINANCIAL STATEMENTS

24 Post-employment benefits (continued)

Financial information (continued)

Plan assets (continued)

The fair values of plan assets are analysed as follows:

	2022 UK pension – legacy section £ million	2022 UK pension – cash balance section £ million	2022 US pensions £ million	2022 Other £ million	2021 UK pension – legacy section £ million	2021 UK pension – cash balance section £ million	2021 US pensions £ million	2021 Other £ million
Quoted corporate bonds	924	93	87	5	829	84	199	6
Inflation and interest rate swaps	3	–	–	–	(52)	–	–	–
Quoted government bonds	452	–	201	–	698	–	97	–
Cash and cash equivalents	289	6	4	1	113	2	4	–
Quoted equity	340	57	18	1	442	42	20	1
Unquoted equity	74	–	–	–	46	–	–	–
Property	73	–	–	–	63	–	–	–
Insurance policies	–	–	–	1	–	–	–	49
Other	5	–	–	–	3	–	–	–
Plan assets	**2,160**	**156**	**310**	**8**	**2,142**	**128**	**320**	**56**

The UK plan's unquoted equities are assets within a pooled infrastructure fund where the underlying assets are a broad range of private infrastructure investments, diversified by geographic region, infrastructure sector, underlying asset type and development stage. These infrastructure assets are valued using widely recognised valuation techniques which use market data and discounted cash flows. The same valuation approach is used to determine the value of the swaps and insurance policies.

The UK plan's property represents an investment in the Blackrock UK Property Fund, which is a unitised fund where the underlying assets are taken at market value. The valuation of the fund is independently audited by KPMG on an annual basis.

The defined benefit pension plans do not invest directly in Johnson Matthey Plc shares and no property or other assets owned by the pension plans are used by the group.

24 Post-employment benefits (continued)

Financial information (continued)

Defined benefit obligation

Movements in the defined benefit obligation during the year were:

	UK pension – legacy section £ million	UK pension – cash balance section £ million	UK post-retirement medical benefits £ million	US pensions £ million	US post-retirement medical benefits £ million	Other £ million	Total £ million
At 1st April 2020	(1,721)	(87)	(12)	(392)	(34)	(84)	(2,330)
Current service cost	(6)	(20)	–	(9)	(1)	(1)	(37)
Past service credit	(1)	–	4	–	–	–	3
Interest cost	(39)	(3)	–	(11)	(1)	(2)	(56)
Employee contributions	(3)	(7)	–	(1)	(1)	–	(12)
Remeasurements due to changes in:							
Financial assumptions	(259)	(20)	–	(2)	(1)	(4)	(286)
Demographic assumptions	8	–	–	2	1	1	12
Benefits paid	65	3	–	32	2	2	104
Exchange adjustments	–	–	–	41	4	5	50
At 31st March 2021	(1,956)	(134)	(8)	(340)	(31)	(83)	(2,552)
Current service cost	(8)	(26)	–	(9)	(1)	(1)	(45)
Past service credit	–	–	–	–	11	–	11
Interest cost	(40)	(4)	–	(10)	(1)	(1)	(56)
Employee contributions	(3)	(7)	–	(1)	(1)	–	(12)
Remeasurements due to changes in:							
Financial assumptions	196	11	–	35	2	2	246
Demographic assumptions	–	–	(1)	1	6	(1)	5
Experience adjustments	(61)	(16)	–	–	–	–	(77)
Benefits paid	63	2	–	27	2	3	97
Disposal of business[1]	–	–	–	–	–	46	46
Exchange adjustments	–	–	–	(15)	–	–	(15)
At 31st March 2022	**(1,809)**	**(174)**	**(9)**	**(312)**	**(13)**	**(35)**	**(2,352)**

1. The reduction in liabilities relates to the disposal of the Advanced Glass Technologies business.

24 Post-employment benefits (continued)

Financial information (continued)

Reimbursement rights

A government subsidy is receivable under the US Medicare legislation as the US post-retirement medical benefits plan is actuarially equivalent to the Medicare Prescription Drug Act and there is an insurance policy taken out to reinsure the pension commitments of one of the small pension plans which does not meet the definition of a qualifying insurance policy. These are accounted for as reimbursement rights and are shown on the balance sheet in post-employment benefit net assets.

Movements in the reimbursement rights during the year were:

	US post-retirement medical benefits £ million	Other £ million	Total £ million
At 1st April 2020	7	1	8
Return on assets excluding interest	(1)	(1)	(2)
At 31st March 2021	6	–	6
Return on assets excluding interest	(6)	–	(6)
Exchange adjustments	–	1	1
At 31st March 2022	**–**	**1**	**1**

24 Post-employment benefits (continued)

Financial information (continued)

Net post-employment benefit assets and liabilities

The net post-employment benefit assets and liabilities are:

	UK pension – legacy section £ million	UK pension – cash balance section £ million	UK post-retirement medical benefits £ million	US pensions £ million	US post-retirement medical benefits £ million	Other £ million	Total £ million
At 31st March 2022							
Defined benefit obligation	(1,809)	(174)	(9)	(312)	(13)	(35)	(2,352)
Fair value of plan assets	2,160	156	–	310	–	8	2,634
Reimbursement rights	–	–	–	–	–	1	1
Net post-employment benefit assets and liabilities	**351**	**(18)**	**(9)**	**(2)**	**(13)**	**(26)**	**283**
At 31st March 2021							
Defined benefit obligation	(1,956)	(134)	(8)	(340)	(31)	(83)	(2,552)
Fair value of plan assets	2,142	128	–	320	–	56	2,646
Reimbursement rights	–	–	–	–	6	–	6
Net post-employment benefit assets and liabilities	**186**	**(6)**	**(8)**	**(20)**	**(25)**	**(27)**	**100**

These are included in the balance sheet as follows:

	2022 Post-employment benefit net assets £ million	**2022 Employee benefit net obligations £ million**	**2022 Total £ million**	2021 Post-employment benefit net assets £ million	2021 Employee benefit net obligations £ million	2021 Total £ million
UK pension – legacy section	351	–	351	186	–	186
UK pension – cash balance section	–	(18)	(18)	–	(6)	(6)
UK post-retirement medical benefits	–	(9)	(9)	–	(8)	(8)
US pensions	–	(2)	(2)	–	(20)	(20)
US post-retirement medical benefits	–	(13)	(13)	6	(31)	(25)
Other	1	(27)	(26)	2	(29)	(27)
Total post-employment plans	**352**	**(69)**	**283**	**194**	**(94)**	**100**
Other long-term employee benefits		(3)			(4)	
Total long-term employee benefit obligations		**(72)**			**(98)**	

FINANCIAL STATEMENTS

24 Post-employment benefits (continued)

Financial information (continued)

Income statement

Amounts recognised in the income statement for long term employment benefits were:

	2022 £ million	2021 £ million
Administrative expenses	(3)	(4)
Current service cost	(45)	(37)
Past service credit	11	3
Defined benefit post-employment costs charged to operating profit	**(37)**	**(38)**
Defined contribution plans' expense	(24)	(26)
Other long term employee benefits	(1)	(1)
Charge to operating profit	**(62)**	(65)
Interest on post-employment benefits charged to finance income	2	5
Charge to profit before tax	**(60)**	(60)

Statement of total comprehensive income

Amounts recognised in the statement of total comprehensive income for long term employment benefits were:

	2022 £ million	2021 £ million
Return on plan assets excluding interest	9	135
Remeasurements due to changes in:		
Financial assumptions	246	(286)
Demographic assumptions	5	12
Experience adjustments	(77)	–
Reimbursement rights – return on assets excluding interest	(6)	(2)
Remeasurements of post-employment benefit assets and liabilities	**177**	**(141)**

Sensitivity analysis

The calculations of the defined benefit obligations are sensitive to the assumptions used. The following summarises the estimated impact on the group's main plans of a change in the assumption while holding all other assumptions constant. This sensitivity analysis may not be representative of the actual change as it is unlikely that the change in assumptions would occur in isolation of one another.

Financial assumptions

A 0.1% change in the discount rate and inflation assumptions would (increase) / decrease the UK and US pension plans' defined benefit obligations at 31st March 2022 as follows:

	0.1% increase		0.1% decrease	
	UK plan £ million	US plans £ million	UK plan £ million	US plans £ million
Effect of discount rate	38	4	(40)	(4)
Effect of inflation	(38)	–	37	–

Demographic assumptions

A one-year increase in life expectancy would increase the UK and US pension plans' defined benefit obligation by £66 million and £6 million, respectively.

Parent company

The parent company is the sponsoring employer of the group's UK defined benefit pension plan and the UK post-retirement medical benefits plan. There is no contractual agreement or stated policy for charging the net defined benefit cost for the plans to the individual group entities. The parent company recognises the net defined benefit cost for these plans and information is disclosed above.

25 Leases

Leasing activities

The group and parent company lease some of their property, plant and equipment which are used by the group and parent company in their operations.

Right-of-use assets

Group

	Land and buildings £ million	Plant and machinery £ million	Total £ million
At 1st April 2021	63	11	74
New leases, remeasurements and modifications	9	1	10
Depreciation charge for the year	(9)	(5)	(14)
Disposal of businesses (note 28)	(2)	–	(2)
Impairment losses (notes 6 and 27)	(2)	(3)	(5)
Transferred to held for sale (note 27)	(2)	–	(2)
At 31st March 2022	**57**	**4**	**61**

During the year, the group recognised impairments of £5 million, £4 million resulting from our decision to exit Battery Materials and £1 million in respect of Health. The depreciation charge for discontinued operations equalled £1 million for the year.

25 Leases (continued)

Parent company

	Land and buildings £ million	Plant and machinery £ million	Total £ million
At 1st April 2021	11	4	15
New leases, remeasurements and modifications	1	–	1
Depreciation charge for the year	(3)	(1)	(4)
Impairment losses	(1)	(3)	(4)
Transferred to held for sale	(1)	–	(1)
At 31st March 2022	**7**	**–**	**7**

During the year, the parent company recognised impairments of £4 million resulting from our decision to exit Battery Materials.

Lease liabilities

	Group		Parent company	
	2022 £ million	2021 £ million	**2022 £ million**	2021 £ million
Current	10	11	3	3
Non-current	40	51	7	13
Total liabilities	**50**	**62**	**10**	**16**

	Group		Parent company	
	2022 £ million	2021 £ million	**2022 £ million**	2021 £ million
Interest expense	2	3	1	1

The weighted average incremental borrowing rate applied to the group's lease liabilities was 4.1% (2021: 4.5%) and 4.0% (2021: 4.3%) for the parent company.

A maturity analysis of lease liabilities is disclosed in note 29.

Other

	Group		Parent company	
	2022 £ million	2021 £ million	**2022 £ million**	2021 £ million
Total cash outflow for leases	16	17	3	4

The expense relating to low-value and short-term leases is immaterial.

26 Share capital and other reserves

Share capital

	Number	£ million
Issued and fully paid ordinary shares		
At 1st April 2020 and 31st March 2021	198,940,606	221
Share buyback	(3,078,841)	(3)
At 31st March 2022	**195,861,765**	**218**

Details of outstanding allocations under the company's long term incentive plans and awards under the deferred bonus which have yet to mature are disclosed in note 31.

On 18th November 2021, the board approved a share buyback of around £200 million which commenced on 21st December 2021 and was completed on 13th May 2022. During the year the company purchased 8,139,250 shares at a cost of £155 million and recognised £45 million in trade and other payables. Of these shares, 5,060,409 are being held as treasury shares with 3,078,841 of the shares cancelled. Distributable reserves have been reduced by £200 million, being the total amount of the share buyback. The total number of treasury shares held was 10,467,585 (2021: 5,407,176) at a total cost of £192 million (2021: £92 million).

The group and parent company's employee share ownership trust (ESOT) also buys shares on the open market and holds them in trust for employees participating in the group's executive long term incentive plans. At 31st March 2022, the ESOT held 737,566 shares (2021: 894,670 shares) which had not yet vested unconditionally to employees. Computershare Trustees (CI) Limited, as trustee for the ESOT, has waived its dividend entitlement

Dividends

	2022 £ million	2021 £ million
2019/20 final ordinary dividend paid – 31.125 pence per share	–	60
2020/21 interim ordinary dividend paid – 20.00 pence per share	–	39
2020/21 final ordinary dividend paid – 50.00 pence per share	96	–
2021/22 interim ordinary dividend paid – 22.00 pence per share	43	–
Total dividends	**139**	99

A final dividend of 55.0 pence per ordinary share has been proposed by the board which will be paid on 2nd August 2022 to shareholders on the register at the close of business on 10th June 2022, subject to shareholders' approval. The estimated amount to be paid is £102 million and has not been recognised in these accounts.

The board is responsible for the group's capital management including the approval of dividends. This includes an assessment of both the level of reserves legally available for distribution and consideration as to whether Johnson Matthey Plc would be solvent and maintain sufficient liquidity following any proposed distribution. The board has assessed the level of distributable profits as at 31st March 2022 and is satisfied that they are sufficient to support the proposed dividend.

26 Share capital and other reserves (continued)

Other reserves

Capital redemption reserve, The capital redemption reserve represents the cumulative nominal value of the company's ordinary shares repurchased and subsequently cancelled.

Foreign currency translation reserve, The foreign currency translation reserve comprises all foreign currency differences arising from the translation of the financial statements of foreign operations.

Fair value through other comprehensive income reserve, The fair value through other comprehensive income reserve represents the equity movements on financial assets held within this category.

Hedging reserve, The hedging reserve comprises the effective portion of the cumulative net change in the fair value of cash flow hedging instruments.

The Foreign currency translation reserves includes £3 million (2021: £5 million) in relation to continuing hedge relationships and £3 million (2021: £3 million) in relation to discontinued hedge relationships. All cash flow hedge reserves balances relate to continuing hedge relationships.

Group

				Hedging reserve			
	Capital redemption reserve £ million	Foreign currency translation reserve £ million	Fair value through other comprehensive income reserve £ million	Forward currency contracts £ million	Cross currency contracts £ million	Forward metal contracts £ million	Total other reserves £ million
At 1st April 2020	7	139	–	(7)	1	2	142
Cash flow hedges – gains / (losses) gains taken to equity	–	–	–	7	(10)	(8)	(11)
Cash flow hedges – transferred to revenue (income statement)	–	–	–	1	–	–	1
Cash flow hedges – transferred to foreign exchange (income statement)	–	–	–	–	9	–	9
Cash flow hedges – transferred to inventory (balance sheet)	–	–	–	6	–	(2)	4
Fair value gains on net investment hedges taken to equity	–	12	–	–	–	–	12
Fair value gains on investments at fair value through other comprehensive income	–	–	5	–	–	–	5
Exchange differences on translation of foreign operations taken to equity	–	(162)	–	–	–	–	(162)
At 31st March 2021	7	(11)	5	7	–	(8)	–
Cash flow hedges – (losses) / gains taken to equity	–	–	–	(14)	3	(31)	(42)
Cash flow hedges – transferred to revenue (income statement)	–	–	–	2	–	–	2
Cash flow hedges – transferred to foreign exchange (income statement)	–	–	–	–	(3)	–	(3)
Cash flow hedges – transferred to inventory (balance sheet)	–	–	–	–	–	7	7
Fair value losses on net investment hedges taken to equity	–	(2)	–	–	–	–	(2)
Fair value losses on investments at fair value through other comprehensive income	–	–	(5)	–	–	–	(5)
Exchange differences on translation of foreign operations taken to equity	–	80	–	–	–	–	80
Cancelled ordinary shares from share buyback	3	–	–	–	–	–	3
Tax on above items taken directly to or transferred from equity	–	2	–	–	–	8	10
At 31st March 2022	**10**	**69**	**–**	**(5)**	**–**	**(24)**	**50**

26 Share capital and other reserves (continued)

Other reserves (continued)

Parent company

	Capital redemption reserve £ million	Foreign currency translation reserve £ million	Fair value through other comprehensive income reserve £ million	Hedging reserve: Forward currency contracts £ million	Hedging reserve: Cross currency swaps £ million	Hedging reserve: Forward metal contracts £ million	Total other reserves £ million
At 1st April 2020	7	–	3	(3)	1	2	10
Cash flow hedges – gains / (losses) taken to equity	–	–	–	6	(10)	(8)	(12)
Cash flow hedges – transferred to revenue (income statement)	–	–	–	(1)	–	–	(1)
Cash flow hedges – transferred to foreign exchange (income statement)	–	–	–	–	9	–	9
Cash flow hedges – transferred to inventory (balance sheet)	–	–	–	3	–	(2)	1
Other movements	–	–	(3)	–	–	–	(3)
At 31st March 2021	7	–	–	5	–	(8)	4
Cash flow hedges – (losses) / gains taken to equity	–	–	–	(12)	3	(31)	(40)
Cash flow hedges – transferred to revenue (income statement)	–	–	–	2	–	–	2
Cash flow hedges – transferred to foreign exchange (income statement)	–	–	–	–	(3)	–	(3)
Cash flow hedges – transferred to inventory (balance sheet)	–	–	–	–	–	7	7
Cancelled ordinary shares from share buyback	3	–	–	–	–	–	3
Tax on items taken directly to or transferred from equity	–	–	–	–	–	8	8
At 31st March 2022	**10**	**–**	**–**	**(5)**	**–**	**(24)**	**(19)**

Capital

The group's policy for managing capital is to maintain an efficient balance sheet to ensure that the group always has sufficient resources to be able to invest in future growth. The group uses Return on Invested Capital to provide a measure of its efficiency in allocating the capital under its control to profitable investments (see note 36). Capital employed is defined as total equity, excluding post tax pension net assets, plus net debt. During the year, the group complied with all externally imposed capital requirements to which it is subject.

27 Discontinued operations and assets and liabilities classified as held for sale

The group strategically drives for efficiency and disciplined capital allocation to enhance returns, as such we continue to actively manage our portfolio. In line with this strategy, during the year the board decided to sell the Health segment.

On 17th December, the group announced the sale of its Health segment to Altaris Capital Partners. The assets and liabilities have been classified as 'held for sale' at fair value less costs to sell (£272 million). The amount is lower than book value as a result of the deterioration of trading performance through this financial year that ultimately impacted Altaris Capital Partners' valuation of the business, consequentially this has resulted in an impairment charge of £228 million and a restructuring charge of £14 million. The impairment charge comprises goodwill (£144 million), property, plant and equipment (£55 million), right-of-use assets (£1 million), other intangible assets (£23 million) and inventories (£5 million). The business is classified as a discontinued operation and presented separately in the income statement and presented within assets held for sale on the balance sheet.

The Health segment was not classified as held for sale or as a discontinued operation as at 31st March 2021. The comparative statement of profit or loss and other comprehensive income has been restated to show the discontinued operations separately from continuing operations.

Financial information relating to the Health discontinued operations for the year is set out below.

	2022 £ million	2021 £ million
Revenue	164	238
Expenses	(161)	(207)
Underlying operating profit from discontinued operations	**3**	**31**
Major impairment and restructuring costs from discontinued operations	(242)	(17)
(Loss) / profit before tax from discontinued operations	**(239)**	**14**
Tax credit / (expense)	22	(3)
(Loss) / profit after tax from discontinued operations	**(217)**	**11**
Exchange differences on translation of discontinued operations	5	(18)
Other comprehensive income / (expense) from discontinued operations	**5**	**(18)**
Total comprehensive expense from discontinued operations	**(212)**	**(7)**
Net cash inflow from operating activities	33	43
Net cash outflow from investing activities	(30)	(29)
Net cash outflow from financing activities	(6)	(12)
Net (decrease) / increase in cash generated by the discontinued operations	**(3)**	**2**

	pence	pence
(Loss) / earnings per ordinary share from discontinued operations		
Basic (loss) / earnings per ordinary share from discontinued operations	(113.5)	5.6
Diluted (loss) / earnings per ordinary share from discontinued operations	(113.5)	5.6

In the prior year, the Health segment incurred non-underlying major impairment and restructuring charges of £17 million. The charges were in relation to efficiency initiatives. There have been no further charges in relation to these initiatives in the current year.

During the year, the group decided to sell parts or all of its Battery Materials business. As at 31st March 2022, the proceeds less costs to sell for the Battery Materials business was estimated to be £50 million and so an impairment of £325 million has been recognised, see note 6. The business is classified as a disposal group held for sale.

The major classes of assets and liabilities comprising the businesses classified as held for sale as at 31st March 2022 are:

	Health £ million	**Battery Materials £ million**	**Total £ million**
Non-current assets			
Property, plant and equipment	107	39	146
Right-of-use assets	1	1	2
Other intangible assets	41	11	52
Current assets			
Inventories	137	1	138
Current tax assets	1	–	1
Trade and other receivables	59	4	63
Assets classified as held for sale	**346**	**56**	**402**
Current liabilities			
Trade and other payables	(60)	–	(60)
Lease liabilities	(1)	(1)	(2)
Cash and cash equivalents – bank overdrafts	(8)	–	(8)
Provisions	(2)	–	(2)
Non-current			
Lease liabilities	(2)	(5)	(7)
Provisions	(1)	–	(1)
Liabilities classified as held for sale	**(74)**	**(6)**	**(80)**
Net assets of disposal group	**272**	**50**	**322**

28 Disposals

Advanced Glass Technologies

On 31st January 2022, the group completed the sale of its Advanced Glass Technologies business for a cash consideration of £173 million. The business was disclosed as a disposal group held for sale as at 30th September 2021.

	Advanced Glass Technologies £ million
Proceeds	
Cash consideration	173
Cash and cash equivalents disposed	(3)
Net cash consideration	**170**
Disposal costs paid	(10)
Net cash inflow	**160**

Assets and liabilities disposed	
Non-current assets	
Property, plant and equipment	11
Right-of-use assets	2
Goodwill	2
Current assets	
Inventories	17
Trade and other receivables	14
Cash and cash equivalents – cash and deposits	3
Current liabilities	
Trade and other payables	(10)
Net assets disposed	**39**

The profit on disposal of businesses totalled £106 million.

	Advanced Glass Technologies £ million
Cash consideration	173
Less: carrying amount of net assets sold	(39)
Less: disposal costs	(10)
Cumulative currency translation gain recycled from other comprehensive income	(18)
Profit recognised in the income statement	**106**

29 Financial risk management

The group's activities expose it to a variety of financial risks, including credit risk, market risk and liquidity risk. Market risk includes foreign currency risk, interest rate risk and price risk. The financial risks are managed by the group, under policies approved by the board. The financial risk management is carried out by a centralised group treasury function. Group Treasury's role is to optimise the group's liquidity, mitigate financial risks and provide treasury services to the group's operating businesses. The group uses derivative financial instruments, including forward currency contracts, interest rate swaps and currency swaps, to manage the financial risks associated with its underlying business activities and the financing of those activities. Some derivative financial instruments used to manage financial risk are not designated as hedges and, therefore, are classified as at fair value through profit or loss. The group does not undertake any speculative trading activity in financial instruments.

Credit risk

Within certain businesses, the group derives a significant proportion of its revenue from sales to major customers. Sales to individual customers are large if the value of precious metals is included in the price. The failure of any such company to honour its debts could materially impact the group's results. The group derives significant benefit from trading with its customers and manages the risk at many levels. Each sector has a credit committee that regularly monitors its exposure. The Audit Committee receives a report every six months that details all significant credit limits, amounts due and overdue within the group, and the relevant actions being taken. At 31st March 2022, trade receivables for the group amounted to £1,393 million (2021: £1,571 million), excluding £29 million classified as held for sale, of which £1,167 million (2021: £1,317 million) are in Clean Air which mainly supplies car and truck manufacturers and component suppliers in the automotive industry. Although Clean Air has a wide range of customers, the concentrated nature of this industry means that amounts owed by individual customers can be large and, in the event that one of those customers experiences financial difficulty, there could be a material adverse impact on the group. Other parts of the group tend to sell to a larger number of customers and amounts owed tend to be lower. At 31st March 2022, no single outstanding balance exceeded 2% (2021: 2%) of revenue.

29 Financial risk management (continued)

Credit risk (continued)

The credit profiles of the group's customers are obtained from credit rating agencies where possible and are closely monitored. The scope of these reviews includes amounts overdue and credit limits. The group's exposure to credit risk is influenced mainly by the individual characteristics of each customer. However, risk associated with the industry and country in which customers operate may also influence the credit risk. The credit quality of customers is assessed against the appropriate credit ratings, trading experience and market position to define credit limits. Controls and risk mitigants include daily monitoring of exposures, investing in counterparties with investment grade ratings, restricting the amount that can be invested with one counterparty and credit-rating mitigation techniques. Generally, payments are made promptly in the automotive industry and in the other markets in which the group operates.

A provision matrix is used to calculate lifetime expected credit losses using historical loss rates based on days past due and a broad range of forward-looking information, including country and market growth forecasts. This year, expected credit losses on unimpaired trade and contract receivables have decreased to £16 million (2021: £23 million) reflecting the risk profile as at the year end.

Trade receivables are specifically impaired when the amount is in dispute, customers are in financial difficulty or for other reasons which imply there is doubt over the recoverability of the debt. They are written off when there is no reasonable expectation of recovery, based on an estimate of the financial position of the counterparty.

Movements in the allowance for credit losses on trade and contract receivables are as follows:

	Group	
	2022 £ million	2021 £ million
At beginning of year	30	37
Charge for year	18	7
Utilised	(1)	(5)
Released	(10)	(9)
At end of year	**37**	**30**

The group's maximum exposure to default on trade and contract receivables is £1,575 million (2021: £1,782 million), of which £57 million is classified as held for sale.

The group's financial assets included in other receivables are all current and not impaired.

The credit risk on cash and deposits and derivative financial instruments is limited because the counterparties with significant balances are banks with strong credit ratings. The exposure to individual banks is monitored frequently against internally-defined limits, together with each bank's credit rating and credit default swap prices. At 31st March 2022, the maximum net exposure with a single bank for cash and deposits was £105 million (2021: £26 million), whilst the largest mark to market exposure for derivative financial instruments to a single bank was £7 million (2021: £9 million). The group also uses money market funds to invest surplus cash thereby further diversifying credit risk and, at 31st March 2022, the group's exposure to these funds was £137 million (2021: £462 million). The amounts on deposit at the year end represent the group's maximum exposure to credit risk on cash and deposits. Expected credit losses on cash and cash equivalents are immaterial.

Foreign currency risk

The group operates globally with a significant amount of its profit earned outside the UK. The main impact of movements in exchange rates on the group's results arises on translation of overseas subsidiaries' profits into sterling. The largest exposure is to the US dollar and a 5% (6.8 cent (2021: 6.5 cent)) movement in the average exchange rate for the US dollar against sterling would have had a £10 million (2021: £7 million) impact on underlying operating profit. The group is also exposed to the euro and a 5% (5.9 cent (2021: 5.6 cent)) movement in the average exchange rate for the euro against sterling would have had a £9 million (2021: £9 million) impact on underlying operating profit. This exposure is part of the group's economic risk of operating globally which is essential to remain competitive in the markets in which it operates.

The group matches foreign currency assets and liabilities (where these differ to the functional currency of the relevant subsidiary) to avoid the risk of a material impact on the income statement resulting from movements in exchange rates. The group does, however, have foreign exchange exposure on movements through equity related to cash flow and net investment hedges. A 10% depreciation or appreciation in the US dollar and euro exchange rates against sterling would increase / (decrease) other reserves as follows:

	10% depreciation		10% appreciation	
	2022 £ million	2021 £ million	**2022 £ million**	2021 £ million
Cash flow hedges	5	12	(7)	(14)
Net investment hedges	20	12	(25)	(15)

For the net investment hedges, these movements would be fully offset in reserves by an opposite movement on the retranslation of the net assets of the overseas subsidiaries.

Investments in foreign operations

To protect the group's sterling balance sheet and reduce cash flow risk, the group has financed most of its investment in the US and Europe by borrowing US dollars and euros, respectively. Although much of this funding is obtained by directly borrowing the relevant currency, a part is achieved through currency swaps which can be more efficient and reduce costs.

The group has designated US dollar and euro loans and a cross currency swap as hedges of net investments in foreign operations as they hedge changes in the value of the subsidiaries' net assets against movements in exchange rates. The change in the value of the net investment hedges from movements in foreign currency exchange rates is recognised in equity and is offset by an equal and opposite movement in the carrying value of the net assets of the subsidiaries. All critical terms of the hedging instruments and hedged items matched during the year and, therefore, hedge ineffectiveness was immaterial. The hedge ratio is 1:1.

29 Financial risk management (continued)

Foreign currency risk (continued)

Year ended 31st March 2022

	US dollar and euro loans[1] £ million	Cross currency swap[2] £ million	Total £ million
Carrying value of hedging instruments at 31st March 2022	(156)	(2)	**(158)**
Change in carrying value of hedging instruments recognised in equity during the year	(3)	1	**(2)**
Change in fair value of hedged items during the year used to determine hedge effectiveness	3	(1)	**2**

Year ended 31st March 2021

	US dollar and euro loans[1] £ million	Cross currency swap[2] £ million	Total £ million
Carrying value of hedging instruments at 31st March 2021	(69)	(3)	**(72)**
Change in carrying value of hedging instruments recognised in equity during the year	9	3	**12**
Change in fair value of hedged items during the year used to determine hedge effectiveness	(9)	(3)	**(12)**

1. The designated hedging instruments are the $75 million of the 3.26% $150 million Bonds 2022, €17 million of the 2.44% €20 million Bonds 2023, €90 million of the 1.81% €90 million Bonds 2028 and €10 million of the 2.92% €25 million Bonds 2030.
2. The designated hedging instrument is a cross currency swap expiring in 2025 whereby the group pays 2.609% fixed on €77 million and receives 2.83% fixed on £65 million.

Forecast receipts and payments in foreign currencies

The group uses forward foreign exchange contracts to hedge foreign exchange exposures arising on forecast receipts and payments in foreign currencies. These are designated and accounted for as cash flow hedges. The group's policy is to hedge between 50% and 80% of forecast receipts and payments in foreign currencies over the next 12 months.

For hedges of forecast receipts and payments in foreign currencies, the critical terms of the hedging instruments match exactly with the terms of the hedged items and, therefore, the group performs a qualitative assessment of effectiveness. Ineffectiveness may arise if the timing of the forecast transaction changes from what was originally estimated or if there are changes in the credit risk of the group or the derivative counterparty. Hedge ineffectiveness was immaterial during the year. The hedge ratio is 1:1.

Year ended 31st March 2022

	Sterling / US dollar £ million	Sterling / euro £ million	Other £ million	Total £ million
Carrying value of hedging instruments at 31st March 2022				
• assets	–	–	5	**5**
• liabilities	(5)	–	(4)	**(9)**
Change in carrying value of hedging instruments recognised in equity during the year	(8)	16	(3)	**5**
Change in fair value of hedged items during the year used to determine hedge effectiveness	8	(16)	3	**(5)**
Notional amount[1]	209	53	11	**–**

Year ended 31st March 2021

	Sterling / US dollar £ million	Sterling / euro £ million	Other £ million	Total £ million
Carrying value of hedging instruments at 31st March 2021				
• assets	3	4	5	**12**
• liabilities	(1)	–	(3)	**(4)**
Change in carrying value of hedging instruments recognised in equity during the year	2	7	(2)	**7**
Change in fair value of hedged items during the year used to determine hedge effectiveness	(2)	(7)	2	**(7)**
Notional amount[1]	97	91	13	**–**

1. The notional amount is the sterling equivalent of the net currency amount purchased or sold.

The weighted average exchange rates on sterling / US dollar and sterling / euro forward foreign exchange contracts are 1.35 and 0.85 (2021: 1.34 and 0.89), respectively. The hedged, highly probable forecast transactions denominated in foreign currencies are expected to occur over the next 12 months.

29 Financial risk management (continued)

Foreign currency borrowings

The group has designated a US dollar fixed interest rate to sterling fixed interest rate cross currency swap as a cash flow hedge. This swap hedges the movement in the cash flows on $100 million of the 3.14% $130 million bonds 2025 attributable to changes in the US dollar / sterling exchange rate. The currency swap has similar critical terms as the hedged item, such as reference rate, reset dates, payment dates, maturity and notional amount. As all critical terms matched during the year, hedge ineffectiveness was immaterial. The hedge ratio is 1:1. The interest element of the swap is recognised in the income statement each year.

	Cross currency swap	
	2022 £ million	2021 £ million
Carrying value of hedging instruments at 31st March[1]	11	8
Change in carrying value of hedging instruments recognised in equity during the year	3	(11)
Change in fair value of hedged items during the year used to determine hedge effectiveness	(3)	11

1. The designated hedging instrument is a cross currency swap expiring in 2025 whereby the group pays 2.83% fixed on £65 million and receives 3.14% fixed on $100 million.

Interest rate risk

The group's interest rate risk arises from fixed rate borrowings (fair value risk) and floating rate borrowings (cash flow risk) as well as cash deposits and short term investments. Its policy is to optimise interest cost and reduce volatility in reported earnings and equity. The group manages its risk by reviewing the profile of debt regularly and by selectively using interest rate swaps to maintain borrowings at competitive rates. At 31st March 2022, 66% (2021: 60%) of the group's borrowings and related swaps was at fixed rates with an average interest rate of 3.5% (2021: 3.5%). The remaining debt is floating rate. Based on the group's borrowings and related swaps at floating rates, after taking into account the effect of the swaps, a 1% change in all interest rates during the current year would have a £4 million impact on the group's profit before tax (2021: £5 million).

The group has designated four (2021: four) fixed rate to floating interest rate swaps as fair value hedges as they hedge the changes in fair value of bonds attributable to changes in interest rates. All hedging instruments have maturities in line with the repayment dates of the hedged bonds and the cash flows of the instruments are consistent. All critical terms of the hedging instruments and hedged items matched during the year and, therefore, hedge ineffectiveness was immaterial.

	2022 £ million	2021 £ million
Carrying value of hedging instruments at 31st March[1]	**(1)**	**12**
Amortised cost	(256)	(251)
Fair value adjustment	3	(10)
Carrying value of hedged items at 31st March[1]	**(253)**	**(261)**
Change in carrying value of hedging instruments recognised in profit or loss during the year	(13)	(3)
Change in fair value of hedged items during the year used to determine hedge effectiveness	13	5

1. The hedged items are the 3.26% $150 million Bonds 2022, 1.40% €77 million Bonds 2025 and 1.81% €90 million Bonds 2028. Interest rate swaps have been contracted with aligned notional amounts and maturities to the bonds with the effect that the group pays an average floating rate of six-month LIBOR plus 0.64% on the US dollar bonds and six-month EURIBOR plus 0.94% on the euro bonds.

Price risk

Fluctuations in precious metal prices have an impact on the group's financial results. Our policy for all manufacturing businesses is to limit this exposure by hedging against future price changes where such hedging can be done at acceptable cost. The group enters into forward precious metal price contracts for the receipt or delivery of precious metal. The group does not take material price exposures on metal trading. A proportion of the group's precious metal inventories are unhedged due to the ongoing risk over security of supply.

Liquidity risk

The group's funding strategy includes maintaining appropriate levels of working capital, undrawn committed facilities and access to the capital markets. We regularly review liquidity levels and sources of cash, and we maintain access to committed credit facilities and debt capital markets. At 31st March 2022, the group had borrowings under committed bank facilities of £nil (2021: £nil). The group also has a number of uncommitted facilities and overdraft lines at its disposal.

During the year the group extended the maturity date of its sustainability-linked £1 billion revolving credit facility by one year to March 2027. This £1 billion revolving credit facility includes Environmental, Social and Governance KPIs which provides the group with a nominal interest saving or cost depending on our performance.

During the financial year the group signed a sustainable financing agreement through UK Export Finance's (UKEF) Export Development Guarantee scheme for £403 million using year end exchange rates. These facilities are all undrawn as at 31st March 2022 and have maturity dates in March 2027. In addition, the group also signed its first sustainability-linked private placements notes with a delayed drawdown to June 2022. These facilities are for €225 million, £35 million and $50 million.

29 Financial risk management (continued)

Liquidity risk (continued)

	2022 £ million	2021 £ million
Expiring in more than one year	1,403	1,000
Undrawn committed bank facilities	**1,403**	**1,000**

The maturity analyses for financial liabilities showing the remaining contractual undiscounted cash flows, including future interest payments, at current year exchange rates and assuming floating interest rates remain at the latest fixing rates, are:

At 31st March 2022	Within 1 year £ million	1 to 2 years £ million	2 to 5 years £ million	After 5 years £ million	Total £ million
Bank overdrafts	37	–	–	–	37
Bank overdrafts classified as held for sale	8	–	–	–	8
Bank and other loans – principal	264	142	412	348	1,166
Bank and other loans – interest payments	29	25	47	13	114
Lease liabilities – principal	10	8	13	19	50
Lease liabilities – principal – classified as held for sale	2	2	1	4	9
Lease liabilities – interest payments	2	2	3	9	16
Financial liabilities in trade and other payables	2,290	2	–	–	2,292
Financial liabilities in trade and other payables classified as held for sale	23	–	–	–	23
Total non-derivative financial liabilities	**2,665**	**181**	**476**	**393**	**3,715**
Forward foreign exchange contracts – payments	473	45	26	–	544
Forward foreign exchange contracts – receipts	(466)	(43)	(25)	–	(534)
Currency swaps – payments	2,050	–	–	–	2,050
Currency swaps – receipts	(2,053)	–	–	–	(2,053)
Cross currency interest rate swaps – payments	2	65	–	–	67
Cross currency interest rate swaps – receipts	(2)	(65)	–	–	(67)
Interest rate swaps – payments	1	1	67	77	146
Interest rate swaps – receipts	(2)	(2)	(71)	(79)	(154)
Total derivative financial liabilities	**3**	**1**	**(3)**	**(2)**	**(1)**

At 31st March 2021	Within 1 year £ million	1 to 2 years £ million	2 to 5 years £ million	After 5 years £ million	Total £ million
Bank overdrafts	36	–	–	–	36
Bank and other loans – principal	26	250	575	414	1,265
Bank and other loans – interest payments	32	29	61	24	146
Lease liabilities – principal	11	10	17	25	63
Lease liabilities – interest payments	3	2	5	8	18
Financial liabilities in trade and other payables	3,141	1	–	3	3,145
Total non-derivative financial liabilities	**3,249**	**292**	**658**	**474**	**4,673**
Forward foreign exchange contracts – payments	289	–	–	–	289
Forward foreign exchange contracts – receipts	(284)	–	–	–	(284)
Currency swaps – payments	821	–	–	–	821
Currency swaps – receipts	(816)	–	–	–	(816)
Cross currency interest rate swaps – payments	2	2	68	–	72
Cross currency interest rate swaps – receipts	(2)	(2)	(68)	–	(72)
Total derivative financial liabilities	**10**	**–**	**–**	**–**	**10**

Offsetting financial assets and liabilities

The group offsets financial assets and liabilities when it currently has a legally enforceable right to offset the recognised amounts and it intends to either settle on a net basis or realise the asset and settle the liability simultaneously. The following financial assets and liabilities are subject to offsetting or enforceable master netting arrangements:

At 31st March 2022	Gross financial assets / (liabilities) £ million	Amounts set off £ million	Net amounts in balance sheet £ million	Amounts not set off[1] £ million	Net £ million
Non-current interest rate swaps	11	–	11	(3)	8
Cash and cash equivalents	392	(1)	391	–	391
Other financial assets	27	–	27	(24)	3
Cash and cash equivalents – bank overdrafts	(38)	1	(37)	–	(37)
Other financial liabilities – current	(44)	–	(44)	24	(20)
Non-current borrowings and related swaps	(899)	–	(899)	3	(896)

FINANCIAL STATEMENTS

29 Financial risk management (continued)

Offsetting financial assets and liabilities (continued)

At 31st March 2021	Gross financial assets / (liabilities) £ million	Amounts set off £ million	Net amounts in balance sheet £ million	Amounts not set off[1] £ million	Net £ million
Non-current interest rate swaps	20	–	20	(3)	17
Cash and cash equivalents	582	(1)	581	–	581
Other financial assets	44	–	44	(9)	35
Cash and cash equivalents – bank overdrafts	(37)	1	(36)	–	(36)
Other financial liabilities	(18)	–	(18)	9	(9)
Non-current borrowings and related swaps	(1,252)	–	(1,252)	3	(1,249)

1. Agreements with derivative counterparties are based on an ISDA Master Agreement. Under these arrangements, whilst the group does not have a legally enforceable right of set off, where certain credit events occur, such as default, the net position receivable from or payable to a single counterparty in the same currency would be taken as owing and all the relevant arrangements terminated.

30 Fair values

Fair value hierarchy

Fair values are measured using a hierarchy where the inputs are:

- Level 1 – quoted prices in active markets for identical assets or liabilities.
- Level 2 – not level 1 but are observable for that asset or liability either directly or indirectly.
- Level 3 – not based on observable market data (unobservable).

Fair value of financial instruments

Certain of the group's financial instruments are held at fair value. The fair value of a financial instrument is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the balance sheet date.

The fair value of forward foreign exchange contracts, interest rate swaps, forward precious metal price contracts and currency swaps is estimated by discounting the future contractual cash flows using forward exchange rates, interest rates and prices at the balance sheet date.

The fair value of trade and other receivables measured at fair value is the face value of the receivable less the estimated costs of converting the receivable into cash.

The fair value of money market funds is calculated by multiplying the net asset value per share by the investment held at the balance sheet date.

There were no transfers of any financial instrument between the levels of the fair value hierarchy during the current or prior years.

	2022 £ million	2021 £ million	Fair value hierarchy Level	Note
Financial instruments measured at fair value				
Non-current				
Investments at fair value through other comprehensive income[1]	45	53	1	–
Interest rate swaps – assets	11	20	2	15
Interest rate swaps – liabilities	(2)	–	2	15
Borrowings and related swaps	(2)	(3)	2	20
Other financial liabilities[2]	(12)	–	2	18
Current				
Trade receivables[3]	492	423	2	17
Other receivables[4]	44	58	2	17
Cash and cash equivalents – money market funds	137	462	2	
Other financial assets[2]	27	44	2	18
Interest rate swaps	1	–	2	15
Other financial liabilities[2]	(44)	(18)	2	18
Financial instruments not measured at fair value				
Non-current				
Borrowings and related swaps	(897)	(1,249)	–	20
Lease liabilities	(40)	(51)	–	25
Current				
Amounts receivable under precious metal sale and repurchase agreements	114	308	–	17
Amounts payable under precious metal sale and repurchase agreements	(793)	(1,442)	–	19
Cash and cash equivalents – cash and deposits	254	119	–	
Cash and cash equivalents – bank overdrafts	(37)	(36)	–	
Borrowings and related swaps	(265)	(26)	–	20
Lease liabilities	(10)	(11)		25

1. Investments at fair value through other comprehensive income are quoted bonds purchased to fund pension deficit.
2. Includes forward foreign exchange contracts, forward precious metal price contracts and currency swaps.
3. Trade receivables held in a part of the group with a business model to hold trade receivables for collection or sale. The remainder of the group operates a hold to collect business model and receives the face value, plus relevant interest, of its trade receivables from the counterparty without otherwise exchanging or disposing of such instruments.
4. Other receivables with cash flows that do not represent solely the payment of principal and interest.

30 Fair values (continued)

The fair value of financial instruments, excluding accrued interest, is approximately equal to book value except for:

	2022		2021	
	Carrying amount £ million	**Fair value £ million**	Carrying amount £ million	Fair value £ million
US Dollar Bonds 2022, 2023, 2025, 2027, 2028 and 2030	(688)	(662)	(662)	(689)
Euro Bonds 2023, 2025, 2028 and 2030	(176)	(179)	(186)	(193)
Sterling Bonds 2024 and 2025	(110)	(107)	(110)	(116)
KfW US Dollar loan 2024	(38)	(36)	(36)	(39)

The fair values are calculated using level 2 inputs by discounting future cash flows to net present values using appropriate market interest rates prevailing at the year end.

31 Share-based payments

The total expense recognised during the year in respect of equity-settled share-based payments was £15 million (2021: £16 million). The expense recognised in respect of equity-settled share-based payments for continuing operations was £13 million (2021: £14 million), and £2 million (2021: £2 million) for discontinued operations.

The group currently operates various share-based payment schemes; a Performance share plan (PSP), a Restricted share plan (RSP), a Long-term incentive plan (LTIP), a Deferred bonus scheme and a Share Incentive Plan (SIP). Further details of the directors' remuneration under share-based payment plans are given in the Remuneration Report.

PSP

From 2017, shares are awarded to certain of the group's executive directors and senior managers under the PSP based on a percentage of salary and are subject to performance targets over a three-year period. The performance targets are based on underlying EPS growth, and Total Shareholder Return.

Awards to the executive directors are also subject to a deferred release whereby a third is released on the third anniversary of the award date and the remaining vested shares are released in equal instalments on the fourth and fifth anniversaries of the award date. The Remuneration Committee is entitled to claw back the awards to the executive directors in cases of misstatement or misconduct.

RSP

From 2017, shares are awarded to certain of the group's executive directors and senior managers under the RSP based on a percentage of salary. Awards under the RSP are not subject to performance targets. The shares are subject only to the condition that the employee remains employed by the group on the vesting date (three years after the award date).

LTIP

Prior to 2017, shares were awarded to approximately 1,300 of the group's executive directors, senior managers and middle managers under the LTIP based on a percentage of salary and were subject to performance targets over a three-year period.

Awards to the executive directors are subject to a deferred release whereby a third is released on the third anniversary of the award date and the remaining vested shares are released in equal instalments on the fourth and fifth anniversaries of the award date. The Remuneration Committee is entitled to claw back the awards to the executive directors in cases of misstatement or misconduct.

All outstanding awards on this scheme were released in August 2021.

Deferred bonus

A proportion of the bonus payable to executive directors and senior managers is awarded as shares and deferred for three years. The Remuneration Committee is entitled to claw back the deferred element in cases of misstatement or misconduct or other relevant reason as determined by it.

All employee share incentive plan (SIP) – UK and overseas

Under the SIP, all employees with at least one year of service with the group and who are employed by a participating group company are entitled to contribute up to 2.5% of base pay each month, subject to a £125 per month limit. The SIP trustees buy shares (partnership shares) at market value each month with the employees' contributions. For each partnership share purchased, the group purchases two shares (matching shares) which are awarded to the employee.

In the UK SIP, if the employee sells or transfers partnership shares within three years of the date of award, the linked matching shares are forfeited.

In the overseas SIP, partnership shares and matching shares are subject to a three-year holding period and cannot be sold or transferred during that time.

During the year, 287,320 (2021: 284,808) matching shares under the SIP were awarded to employees. These are nil cost awards on which performance conditions are substantially completed at the date of grant and, consequently, the fair value of these awards is based on the market value of the shares at that date.

31 Share-based payments (continued)

	Year ended 31st March 2022				Year ended 31st March 2021			
	PSP	RSP	LTIP	Deferred Bonus	PSP	RSP	LTIP	Deferred Bonus
Outstanding at the start of the year	1,267,198	680,364	23,808	113,084	1,037,536	247,021	71,277	105,530
Awarded during the year	588,027	761,954	–	75,964	723,758	534,516	553	34,264
Forfeited during the year	(420,314)	(95,172)	–	–	(494,096)	(29,587)	–	–
Released during the year	–	(88,448)	(23,808)	(39,912)	–	(65,782)	(24,357)	(26,710)
Expired during the year	–	–	–	–	–	(5,804)	(23,665)	–
Outstanding at the end of the year	**1,434,911**	**1,258,698**	**–**	**149,136**	**1,267,198**	**680,364**	**23,808**	**113,084**

	Year ended 31st March 2022					Year ended 31st March 2021		
	PSP	Exceptional PSP[1]	RSP	Exceptional RSP[1]	Deferred Bonus	PSP	RSP	Deferred Bonus
Fair value of shares awarded (pence)	2,767.7	1,652.5	2,767.7	1,839.7	2,703.4	2,078.9	2,078.9	2,028.2
Share price at the date of award (pence)	2,970.2	1,813.5	2,970.2	1,962.5	2,970.2	2,239.0	2,239.0	2,239.0
Dividend rate	2.36%	3.86%	2.36%	3.92%	2.36%	2.48%	2.48%	2.48%

1. The group awarded an exceptional RSP scheme on 17th December 2021, and an exceptional PSP scheme on 1st March 2022 all other schemes have grant dates on 1st August each year.

The fair value of shares awarded was calculated using a modified Black Scholes model based on the share price at the date of award adjusted for the present value of the expected dividends that will not be received at an expected dividend rate.

At 31st March 2022, the weighted average remaining contracted life of the awarded PSP shares is 1.2 years (2021: 1.3 years) and 1.4 years (2021: 1.7 years) for the awarded RSP shares.

32 Commitments

Capital commitments – future capital expenditure contracted but not provided

	Group		Parent company	
	2022 £ million	2021 £ million	**2022 £ million**	2021 £ million
Property, plant and equipment	68	167	23	23
Other intangible assets	21	29	11	21

At 31st March 2022, precious metal leases were £140 million (31st March 2021: £437 million) at year end prices.

33 Contingent liabilities

The group is involved in various disputes and claims which arise from time to time in the course of its business including, for example, in relation to commercial matters, product quality or liability, employee matters and tax audits. The group is also involved from time to time in the course of its business in legal proceedings and actions, engagement with regulatory authorities and in dispute resolution processes. These are reviewed on a regular basis and, where possible, an estimate is made of the potential financial impact on the group. In appropriate cases a provision is recognised based on advice, best estimates and management judgement. Where it is too early to determine the likely outcome of these matters, no provision is made. Whilst the group cannot predict the outcome of any current or future such matters with any certainty, it currently believes the likelihood of any material liabilities to be low, and that such liabilities, if any, will not have a material adverse effect on its consolidated income, financial position or cash flows.

As previously disclosed, the group has been informed by a customer of failures in certain engine systems for which the group supplied a particular coated substrate as a component for that customer's emissions after-treatment systems. The reported failures have not been demonstrated to be due to the coated substrate supplied by the group. The group has not been contacted by any regulatory authority about these engine system failures. Having reviewed its contractual obligations and the information currently available to it, the group believes it has defensible warranty positions in respect of this matter. If required, it will vigorously assert its available contractual protections and defences. The outcome of any discussions relating to this matter is not certain, nor is the group able to make a reliable estimate of the possible financial impact at this stage, if any.

The group works with all its customers to ensure appropriate product quality and we have not received claims in respect of our emissions after-treatment components from this or any other customer. Our vision is for a world that's cleaner and healthier; today and for future generations. We are committed to enabling improving air quality and we work constructively with our customers to achieve this.

34 Transactions with related parties

The group has a related party relationship with its joint venture and associate, its post-employment benefit plans (note 24) and its key management personnel (below). Transactions between the Company and its subsidiaries, which are related parties of the Company, have been eliminated on consolidation and are not disclosed in this note.

The key management of the group and parent company consist of the Board of Directors and the members of the Group Leadership Team (GLT). During the year ended 31st March 2022, the GLT had an average of 9 members (2021: 9 members). The only transactions with any key management personnel was compensation charged in the year which was:

	2022 £ million	2021 £ million
Short term employee benefits	7	7
Share-based payments	2	1
Termination benefits	1	–
Non-executive directors' fees and benefits	1	1
Total compensation of key management personnel	**11**	**9**

There were no balances outstanding as at 31st March 2022 (2021: £nil). Information on directors' remuneration is given in the Remuneration Report.

Guarantees of subsidiaries' liabilities are disclosed in note 22.

35 Related undertakings

A full list of related undertakings at 31st March 2022 (comprising subsidiaries, joint ventures and associates) is set out below. Those held directly by the parent company are marked with an asterisk (*) and those held jointly by the parent company and a subsidiary are marked with a cross (+). All the companies are wholly owned unless otherwise stated. All the related undertakings are involved in the principal activities of the group. Unless otherwise stated, the share class of each related undertaking comprises ordinary shares only.

Entity	Registered address
+ Johnson Matthey Argentina S.A.	Tucumán 1, Piso 4, C1049AAA, Buenos Aires, Argentina
Johnson Matthey (Aust.) Ltd	64 Lillee Crescent, Tullamarine VIC 3043, Australia
+ Johnson Matthey Holdings Limited	64 Lillee Crescent, Tullamarine VIC 3043, Australia
+ Johnson Matthey Belgium BVBA	Pegasuslaan 5, 1831 Diegem, Belgium
+ Tracerco Europe BVBA	Zone 3, Doorneveld 115, 1731 Zellik, Brussels, Belgium
The Argent Insurance Co. Limited	Power House, 7 Par-la-Ville Road, Hamilton HM11, Bermuda
Johnson Matthey Brasil Ltda	Avenida Macuco, 726, 12th Floor, Edifício International Office, CEP04523-001, Brazil
Tracerco do Brasil – Diagnosticos de Processos Industriais Ltda	Estrada dos Bandeirantes, 1793, Curicica, Jacarepagua, Rio de Janeiro, Brazil
Johnson Matthey Battery Materials Ltd.	McCarthy Tetrault LLP, Le Complexe St-Amable, 1150, rue de Claire- Fontaine, 7e étage, Quebec G1R 5G4, Canada
Tracerco Radioactive Diagnostic Services Canada Inc.	8908 60 Avenue NW, Edmonton AB, T6E 6A6, Canada
Johnson Matthey Argillon (Shanghai) Emission Control Technologies Ltd.	Ground Floor, Building 2, No. 298, Rongle East Road, Songjiang Industrial Zone, Shanghai 201613, China
Johnson Matthey Battery Materials (Changzhou) Co., Ltd.	1 Xin Wei Liu Road, Changzhou Export Processing Zone, Changzhou, Jiangsu Province, China
Johnson Matthey Chemical Process Technologies (Shanghai) Company Limited	Room 1066, Building 1, No 215 Lian He Bei Lu, Fengxian District, Shanghai, China
Johnson Matthey (China) Trade Co., Ltd	1st, 2nd and 3rd Floor, Building 2, No. 598 Dongxing Road, Songjiang Industrial Zone, Shanghai, China
Johnson Matthey Clean Energy Technologies (Beijing) Co., Ltd	20th Floor, Tower F, Phoenix Place, No.21 Building, Shuguangxi Lane A5, Chaoyang District, Beijing 100028, China
Johnson Matthey Process Technologies (Beijing) Co., Ltd.	20th Floor, Tower F, Phoenix Place, No.21 Building, Shuguangxi Lane A5, Chaoyang District, Beijing 100028, China
Johnson Matthey Pharmaceutical Services (Yantai) Co., Ltd.	No. 9 Wuxi Road, Yantai Economic and Technology Development Zone, Yantai, Shandong Province, China
Johnson Matthey (Shanghai) Catalyst Co., Ltd.	586 Dongxing Road, Songjiang Industry Zone, Shanghai, 201613, China
Johnson Matthey (Shanghai) Chemicals Limited	588 and 599 Dongxing Road, Songjiang Industry Zone, Shanghai, 201613, China
Johnson Matthey (Shanghai) Trading Limited	Room 1615B, No. 118 Xinling Road, Shanghai Pilot Free Trade Zone, China
Johnson Matthey (Tianjin) Chemical Co., Ltd.	Room 1-1201, Borun Commercial Plaza, Tianjin Development Zone, China
Johnson Matthey (Zhangjiagang) Environmental Protection Technology Co., Ltd	No. 9 Dongxin Road, Jiangsu Yangtze River International Chemical Industrial Park, Jiangsu Province, China
Johnson Matthey (Zhangjiagang) Precious Metal Technology Co., Ltd.	No. 48, the west of Beijing Road, Jingang Town, Yangtze River International Chemical Industrial Park, Jiangsu, China
Qingdao Johnson Matthey Hero Catalyst Company Limited (51.0%)	Shiyuan Road, Jihongtan Street, Chengyang District, Qingdao, 200331, China
Shanghai Bi Ke Clean Energy Technology Co Ltd (11.1%)	Room 8708, No. 315 Emei Road, Hongkou District, Shanghai, China
Shanghai Johnson Matthey Applied Materials Technologies Co., Ltd[5]	Area A, 1st Floor, Building 7, 298 East Rongle Road, Songjiang District, Shanghai, China
Tracerco China Process Diagnostics & Instrumentation (Shanghai) Co., Ltd.	Area G, 2nd Floor, Building 7, 298 East Rongle Road, Songjiang District, Shanghai, China
Johnson Matthey A/S	c/o Lundgrens Advokatpartnerselskab, Tuborg Boulevard 12, 4., 2900 Hellerup, Denmark
* AG Holding Ltd	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Cascade Biochem Limited[1]	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Ilumink Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* JMEPS Trustees Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England

35 Related undertakings (continued)

Entity	Registered address
Johnson Matthey Battery Systems Engineering Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Johnson Matthey Battery Materials Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Johnson Matthey Davy Technologies International Limited (in Liquidation)	30 Finsbury Square, London, EC2A 1AG
* Johnson Matthey Davy Technologies Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Johnson Matthey Fuel Cells Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Johnson Matthey Investments Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Johnson Matthey (Nominees) Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Johnson Matthey Precious Metals Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Johnson Matthey South Africa Holdings Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Johnson Matthey Tianjin Holdings Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Matthey Finance Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Matthey Holdings Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
* Tracerco Limited	5th Floor, 25 Farringdon Street, London, EC4A 4AB, England
Johnson Matthey Finland Oy (in liquidation)	Autokatu 6, 20380 Turku, Finland
Johnson Matthey SAS	Les Diamants – Immeuble B, 41 rue Delizy, 93500 Pantin, France
Johnson Matthey Battery Materials GmbH	Ostenriederstrasse 15, 85368 Moosburg a.d. Isar, Germany
Johnson Matthey Catalysts (Germany) GmbH	Bahnhofstrasse 43, 96257 Redwitz an der Rodach, Germany
Johnson Matthey Chemicals GmbH	Wardstrasse 17, D-46446 Emmerich am Rhein, Germany
Johnson Matthey GmbH & Co. KG[2,7]	Otto-Volger-Strasse 9b, 65843 Sulzbach, Germany
Johnson Matthey Holding GmbH[7]	Bahnhofstrasse 43, 96257 Redwitz an der Rodach, Germany
Johnson Matthey Management GmbH	Otto-Volger-Strasse 9b, 65843 Sulzbach, Germany
Johnson Matthey Piezo Products GmbH	Bahnhofstrasse 43, 96257 Redwitz an der Rodach, Germany
Johnson Matthey Redwitz Real Estate (Germany) B.V. & Co. KG[2,8]	Bahnhofstrasse 43, 96257 Redwitz an der Rodach, Germany
Johnson Matthey Hong Kong Limited (dissolved)	Room 802-6 , 909 Cheung Sha Wan Road, Kowloon , Hong Kong
Johnson Matthey Pacific Limited[3]	Room 802-6 , 909 Cheung Sha Wan Road, Kowloon , Hong Kong
Johnson Matthey Process Technologies Holdings Hong Kong Limited	Room 802-6 , 909 Cheung Sha Wan Road, Kowloon , Hong Kong
Johnson Matthey Tracerco Holdings Hong Kong Limited	Room 802-6 , 909 Cheung Sha Wan Road, Kowloon , Hong Kong
Macfarlan Smith (Hong Kong) Limited	Room 802-6 , 909 Cheung Sha Wan Road, Kowloon , Hong Kong
Johnson Matthey Chemicals India Private Limited	Plot No 6A, MIDC Industrial Estate, Taloja, District Raigad, Maharashtra 410208, India
Johnson Matthey India Private Limited	5th Floor, Regus Business Centre, 1st Floor, M-4, South Extension-II, New Dehli, 110049, India
Johnson Matthey Limited	13-18 City Quay, Dublin 2, D02 ED70, Ireland
Johnson Matthey Italia S.r.l.	Corso Trapani 16, 10139, Torino, Italy
Johnson Matthey Fuel Cells Japan Limited	5123-3 Kitsuregawa, Sakura-shi, Tochigi, 329-1412, Japan
Johnson Matthey Japan Godo Kaisha	5123-3 Kitsuregawa, Sakura-shi, Tochigi, 329-1412, Japan
Johnson Matthey DOOEL Skopje	TIDZ Skopje 1, 1041 Ilinden, Macedonia

35 Related undertakings (continued)

Entity	Registered address
*Johnson Matthey Sdn. Bhd.	Suite 16-03, Level 16, Wisma UOA II, 21 Jalan Pinang, 50450 Kuala Lumpur, Malaysia
Johnson Matthey Services Sdn. Bhd.	Suite 16-03, Level 16, Wisma UOA II, 21 Jalan Pinang, 50450 Kuala Lumpur, Malaysia
Tracerco Asia Sdn. Bhd.	Suite 16-03, Level 16, Wisma UOA II, 21 Jalan Pinang, 50450 Kuala Lumpur, Malaysia
Tracerco Asia Services Sdn. Bhd.	Suite 16-03, Level 16, Wisma UOA II, 21 Jalan Pinang, 50450 Kuala Lumpur, Malaysia
Johnson Matthey de Mexico, S. de R.L. de C.V.	c/o Cacheaux, Cavazos and Newton, No. 437 Col. Colinas del Cimatario, CP 76090 Queretaro, Mexico
Johnson Matthey Servicios, S. de R.L. de C.V.	c/o Cacheaux, Cavazos and Newton, No. 437 Col. Colinas del Cimatario, CP 76090 Queretaro, Mexico
Macfarlan Smith B.V.[6]	Javastraat 12, 3016 CE Rotterdam, The Netherlands
Intercat Europe B.V.	Offices KB103, Gelissendomein 8-10/93, 6229 GJ Maastricht, Netherlands
Johnson Matthey Advanced Glass Technologies B.V.[5]	Fregatweg 38, 6222 NZ Maastricht, Netherlands
Johnson Matthey B.V.	Otto-Volger-Strasse 9b, 65843 Sulzbach/Ts. Germany
Johnson Matthey Holdings B.V.	Offices KB103, Gelissendomein 8-10/93, 6229 GJ Maastricht, Netherlands
Johnson Matthey Netherlands 2 B.V.	Offices KB103, Gelissendomein 8-10/93, 6229 GJ Maastricht, Netherlands
Matthey Finance B.V.[1]	Offices KB103, Gelissendomein 8-10/93, 6229 GJ Maastricht, Netherlands
Tracerco Norge AS	Kokstadflaten 35, 5257 Kokstad, Norway
Johnson Matthey Battery Systems Spólka z ograniczoną odpowiedzialnocścią	Ul. Alberta Einsteina 6, 44-109, Gliwice, Poland
Johnson Matthey Poland Spólka z ograniczoną odpowiedzialnocścią	Ul. Alberta Einsteina 6, 44-109, Gliwice, Poland
Johnson Matthey Battery Materials Poland spółka z ograniczona odpowiedzialnosci	Ul. Hutnicza 1, 62-510 Konin, Poland
Macfarlan Smith Portugal, Lda	Largo de São Carlos 3, 1200-410 Lisboa, Portugal
Johnson Matthey Catalysts LLC	1 Transportny Proezd, 660027 Krasnoyarsk, Russia
International Diol Company (4.3%)	PO Box 251, Riyadh 11411, Saudi Arabia
*Johnson Matthey General Partner (Scotland) Limited	10 Wheatfield Road, Edinburgh, Midlothian, EH11 2QA, Scotland
*Johnson Matthey (Scotland) Limited Partnership[2]	10 Wheatfield Road, Edinburgh, Midlothian, EH11 2QA, Scotland
*Macfarlan Smith Limited	10 Wheatfield Road, Edinburgh, Midlothian, EH11 2QA, Scotland
*Meconic Limited (in Liquidation)	7 Exchange Crescent, Conference Square, Edinburgh, EH3 8AN
Johnson Matthey Singapore Private Limited	50 Raffles Place, #19-00, Singapore Lane Tower, Singapore 048623
Johnson Matthey Arabia for Business Services[6]	PO Box 26090, Riyadh 11486, Saudi Arabia
Johnson Matthey (Proprietary) Limited	Corner Henderson and Premier Roads, Germiston South Ext 7, Gauteng, South Africa
Johnson Matthey Research South Africa (Proprietary) Limited	Corner Henderson and Premier Roads, Germiston South Ext 7, Gauteng, South Africa
Johnson Matthey Salts (Proprietary) Limited	Corner Henderson and Premier Roads, Germiston South Ext 7, Gauteng, South Africa
Johnson Matthey Catalysts Korea Limited	A-dong 2906-ho, 13 Heungdeok 1-ro, Giheung-gu, Yongin-si, Gyeonggi-do, South Korea
Johnson Matthey Korea Limited	101-2803, Lotte Castle, 109, Mapo-daero, Mapo-gu Seoul, South Korea
Johnson Matthey AB	Viktor Hasselblads gata 8, 421 31 Västra Frölunda, Göteborg, Sweden
Johnson Matthey Formox AB	SE-284 80, Perstorp, Sweden
Johnson Matthey & Brandenberger AG	Glatttalstrasse 18, 8052 Zurich, Switzerland
Johnson Matthey Finance GmbH	Hertensteinstrasse 51, 6004 Lucerne, Switzerland
Johnson Matthey Finance Zurich GmbH	Glatttalstrasse 18, 8052 Zurich, Switzerland
LiFePO4+C Licensing AG	Hertensteinstrasse 51, 6004 Lucerne, Switzerland

35 Related undertakings (continued)

Entity	Registered address
Johnson Matthey (Thailand) Limited[5]	1858/12 Interlink Tower, 5th Floor, Debaratna Road, Kwang Bangna Tai, Khet Bangna, Bangkok 10260, Thailand
Johnson Matthey Holdings (Thailand) Limited[5]	1858/12 Interlink Tower, 5th Floor, Debaratna Road, Kwang Bangna Tai, Khet Bangna, Bangkok 10260, Thailand
Johnson Matthey Services (Trinidad and Tobago) Limited	Queen's Park Place, 17-20 Queens Park West, Port of Spain, Trinidad and Tobago
Stepac Ambalaj Malzemeleri Sanayi Ve Ticaret Anonim Sirketi (in liquidation)	Güzeloba Mah. Rauf Denktaş Cad., No.56/101, Muratpaşa/Antalya, Turkey
Johnson Matthey Fuel Cells, Inc.	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Holdings, Inc.	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Inc.[4]	Corporation Service Company, 2595 Interstate Drive, Suite 103 PA 17110, USA
Johnson Matthey Materials, Inc.[7]	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Medical Device Components LLC[6]	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey North America, Inc.[7]	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Pharmaceutical Materials, Inc.	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Process Technologies, Inc.	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Johnson Matthey Stationary Emissions Control LLC	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA
Red Maple LLC (50.0%)	Corporation Service Company, 251 Little Falls Drive, Wilmington DE 19808, USA

In some jurisdictions in which the group operates, share classes are not defined and in these instances, for the purpose of disclosure, these holdings have been classified as ordinary shares.

1. Ordinary and preference shares.
2. Limited partnership, no share capital.
3. Ordinary and non-cumulative redeemable preference shares.
4. Ordinary and series A preferred stock.
5. Sold during current financial year.
6. Incorporated during current financial year.
7. Merged with another Johnson Matthey subsidiary in the year.
8. Name change in the year.

36 Non-GAAP measures

The group uses various measures to manage its business which are not defined by generally accepted accounting principles (GAAP). The group's management believes these measures provide valuable additional information to users of the accounts in understanding the group's performance. Certain of these measures are financial Key Performance Indicators which measure progress against our strategy. All non-GAAP measures are on a continuing operations basis.

Definitions

Measure	Definition	Purpose
Sales[1]	Revenue excluding sales of precious metals to customers and the precious metal content of products sold to customers.	Provides a better measure of the growth of the group as revenue can be heavily distorted by year on year fluctuations in the market prices of precious metals and, in many cases, the value of precious metals is passed directly on to customers.
Underlying operating profit[2]	Operating profit excluding non-underlying items.	Provides a measure of operating profitability that is comparable over time.
Underlying operating profit margin[1, 2]	Underlying operating profit divided by sales.	Provides a measure of how we convert our sales into underlying operating profit and the efficiency of our business.
Underlying profit before tax[2]	Profit before tax excluding non-underlying items.	Provides a measure of profitability that is comparable over time.
Underlying profit for the year[2]	Profit for the year excluding non-underlying items and related tax effects.	Provides a measure of profitability that is comparable over time.
Underlying earnings per share[1, 2]	Underlying profit for the year divided by the weighted average number of shares in issue.	Our principal measure used to assess the overall profitability of the group.
Return on invested capital (ROIC)[1]	Annualised underlying operating profit divided by the 12 month average equity, excluding post tax pension net assets, plus average net debt for the same period.	Provides a measure of the group's efficiency in allocating the capital under its control to profitable investments.
Average working capital days (excluding precious metals)[1]	Monthly average of non-precious metal related inventories, trade and other receivables and trade and other payables (including any classified as held for sale) divided by sales for the last three months multiplied by 90 days.	Provides a measure of efficiency in the business with lower days driving higher returns and a healthier liquidity position for the group.
Free cash flow	Net cash flow from operating activities after net interest paid, net purchases of non-current assets and investments, dividends received from joint ventures and associates and the principal element of lease payments.	Provides a measure of the cash the group generates through its operations, less capital expenditure.
Net debt (including post tax pension deficits) to underlying EBITDA	Net debt, including post tax pension deficits and quoted bonds purchased to fund the UK pension (excluded when the UK pension plan is in surplus) divided by underlying EBITDA for the same period.	Provides a measure of the group's ability to repay its debt. The group has a long-term target of net debt (including post tax pension deficits) to underlying EBITDA of between 1.5 and 2.0 times, although in any given year it may fall outside this range depending on future plans.

1. Key Performance Indicator.
2. Underlying profit measures are before profit or loss on disposal of businesses, gain or loss on significant legal proceedings, together with associated legal costs, amortisation of acquired intangibles, major impairment and restructuring charges and, where relevant, related tax effects. These items have been excluded by management as they are not deemed to be relevant to an understanding of the underlying performance of the business.

Underlying profit measures exclude the following non-underlying items which are shown separately on the face of the income statement:

- **Amortisation of acquired intangibles,** Amortisation and impairment of intangible assets which arose on the acquisition of businesses totalled £6 million (2021: £10 million).
- **Major impairment and restructuring charges,** The group recognised £440 million in major impairment and restructuring charges (2021: £154 million), see note 6.
- **Profit on disposal of businesses,** The group recognised £106 million profit on the disposal of businesses (2021: £nil), see note 28.
- **Gains and losses on significant legal proceedings,** The group recognised a £42 million net gain on the settlement of significant legal proceedings, see note 4.

36 Non-GAAP measures (continued)

Reconciliations to GAAP measures

Sales

See note 2.

Underlying profit measures

Year ended 31st March 2022

	Operating profit £ million	Profit before tax £ million	Tax expense £ million	Profit for the year £ million
Underlying	553	493	(86)	407
Profit on disposal of businesses	106	106	(4)	102
Gains and losses on significant legal proceedings	42	42	(6)	36
Amortisation of acquired intangibles	(6)	(6)	1	(5)
Major impairment and restructuring charges	(440)	(440)	16	(424)
Reported	**255**	**195**	**(79)**	**116**

The major impairments and restructuring charges result in a tax credit in the UK and US but not in other territories. The tax credit on these impairments have been offset by a provision for potential tax risks relating to historic transactions in South Africa. The tax provision has been booked in non-underlying due to its size and because it relates to historic transactions which do not reflect the underlying performance of the current or prior year.

Year ended 31st March 2021*

	Operating profit £ million	Profit before tax £ million	Tax expense £ million	Profit for the year £ million
Underlying	473	388	(62)	326
Amortisation of acquired intangibles	(10)	(10)	2	(8)
Major impairment and restructuring charges	(154)	(154)	30	(124)
Reported	**309**	**224**	**(30)**	**194**

Underlying earnings per share

	2022	2021*
Underlying profit for the year (£ million)	407	326
Weighted average number of shares in issue (number)	191,568,756	192,711,413
Underlying earnings per share (pence)	213.2	168.9

Return on invested capital (ROIC) – unaudited

	2022 £ million	2021 £ million*
Underlying operating profit	**553**	**473**
Average net debt	877	1,291
Average equity	2,467	2,481
Average capital employed	**3,344**	**3,772**
Less: Average pension net assets	(221)	(261)
Less: Average related deferred taxation	48	47
Average capital employed (excluding post tax pension net assets)	**3,171**	**3,558**
ROIC (excluding post tax pension net assets)	**17.4%**	**13.3%**
ROIC	16.5%	12.5%

Average working capital days (excluding precious metals) – unaudited

	2022 £ million	2021 £ million*
Inventories	1,549	1,814
Trade and other receivables	1,796	2,422
Trade and other payables	(2,563)	(3,325)
	782	**911**
Working capital balances relating to discontinued operations	–	(152)
Total working capital	**782**	**759**
Less: Precious metal working capital	(562)	(552)
Add: Precious metal working capital relating to discontinued operations	–	21
Working capital (excluding precious metals)	**220**	**228**
Average working capital days (excluding precious metals)	**36**	**45**

* Restated to reflect classification of the Health segment as discontinued operations (see note 27).

36 Non-GAAP measures (continued)

Free cash flow from continuing operations

	2022 £ million	2021 £ million*
Net cash inflow from operating activities	605	769
Interest received	32	66
Interest paid	(111)	(159)
Purchases of property, plant and equipment	(358)	(304)
Purchases of intangible assets	(95)	(77)
Net proceeds from sale of businesses	160	19
Proceeds from sale of non-current assets	1	5
Principal element of lease payments	(14)	(14)
Less: Free cash outflow / (inflow) from discontinued operations	1	(10)
Free cash flow	**221**	**295**

Net debt (including post tax pension deficits) to underlying EBITDA

	2022 £ million	2021 £ million*
Cash and deposits	254	119
Money market funds	137	462
Bank overdrafts	(37)	(36)
Bank overdrafts transferred to liabilities classified as held for sale	(8)	–
Cash and cash equivalents	**346**	**545**
Less: Cash and cash equivalents – bank overdrafts from discontinued operations	8	4
Cash and cash equivalents from continuing operations	**354**	**549**
Interest rate swaps – current assets	1	–
Interest rate swaps – non-current assets	11	20
Interest rate swaps – non-current liabilities	(2)	–
Borrowings and related swaps – current	(265)	(26)
Borrowings and related swaps – non-current	(899)	(1,252)
Lease liabilities – current	(10)	(11)
Lease liabilities – non-current	(40)	(51)
Lease liabilities – current – transferred to liabilities classified as held for sale	(2)	–
Lease liabilities – non-current transferred to liabilities classified as held for sale	(7)	–
Less: Lease liabilities relating to discontinued operations	3	1
Net debt	**(856)**	**(770)**

	2022 £ million	2021 £ million*
(Decrease) / increase in cash and cash equivalents	(205)	276
Less: Decrease / (increase) in cash and cash equivalents from discontinued operations	3	(2)
Less: Decrease / (increase) in borrowings	131	(70)
Less: Principal element of lease payments	14	14
Less: Principal element of lease payments from discontinued operations	(1)	(1)
(Increase) / decrease in net debt resulting from cash flows	**(58)**	**217**
New leases, remeasurements and modifications	(9)	(3)
Less: New leases, remeasurements and modifications from discontinued operations	3	–
Other lease movements	–	1
Exchange differences on net debt	(24)	107
Other non-cash movements	2	(6)
Movement in net debt	**(86)**	**316**
Net debt at beginning of year	(770)	(1,086)
Net debt at end of year	**(856)**	**(770)**
Net debt	(856)	(770)
Add: Pension deficits	(29)	(49)
Add: Related deferred tax	4	9
Net debt (including post tax pension deficits)	**(881)**	**(810)**
Underlying operating profit	553	473
Add back: Depreciation and amortisation excluding amortisation of acquired intangibles	171	160
Underlying EBITDA	**724**	**633**
Net debt (including post tax pension deficits) to underlying EBITDA	**1.2**	**1.3**

* Restated to reflect classification of the Health segment as discontinued operations (see note 27).

36 Non-GAAP measures (continued)

	2022 £ million	2021 £ million*
Underlying EBITDA	**724**	**633**
Depreciation and amortisation	(177)	(170)
Gains and losses on significant legal proceedings	42	–
Major impairment and restructuring charges	(440)	(154)
Profit on disposal of businesses	106	–
Finance costs	(101)	(158)
Finance income	41	73
Income tax expense	(79)	(30)
Profit for the year from continuing operations	**116**	**194**

* Restated to reflect classification of the Health segment as discontinued operations (see note 27).

37 Events after the balance sheet date

On 25th May 2022, the group announced an agreement to enter into a €20 million minority investment in Enapter AG.

On 25th May 2022, the group agreed to sell parts of the Battery Materials business to EV Metals Group plc and Nano One Materials Corp.