2022 ANNUAL REPORT

TRAFIGURA GROUP PTE. LTD.

2022 financial and business highlights[1]

Group revenue

$318.5bn

$231.3bn in 2021
$147.0bn in 2020

Underlying EBITDA

$12.1bn

$7.0bn in 2021
$6.1bn in 2020

Underlying EBITDA margin

3.8%

3.0% in 2021
4.1% in 2020

Net profit

$7.0bn

$3.1bn in 2021
$1.6bn in 2020

Total Group equity

$15.1bn

$10.5bn in 2021
$7.8bn in 2020

Total assets

$98.6bn

$90.2bn in 2021
$57.0bn in 2020

Total non-current assets

$19.4bn

$15.1bn in 2021
$11.1bn in 2020

Average number of employees over the year[2]

12,347

9,031 in 2021
8,619 in 2020

Oil and Petroleum Products total volume traded[3]

312.5mmt

330.3mmt in 2021
269.8mmt in 2020

Non-ferrous concentrates and refined metals total volume traded

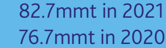
23.3mmt

22.8mmt in 2021
20.9mmt in 2020

Bulk minerals total volume traded

91.3mmt

82.7mmt in 2021
76.7mmt in 2020



Trafigura Group Pte. Ltd. and the companies which it directly or indirectly owns investments in are separate and distinct entities. In this publication, the collective expressions 'Trafigura', 'Trafigura Group', 'the Company' and 'the Group' may be used for convenience where reference is made in general to those companies. Likewise, the words 'we', 'us', 'our' and 'ourselves' are used in some places to refer to the companies of the Trafigura Group in general. These expressions are also used where no useful purpose is served by identifying any particular company or companies.

1. Trafigura's financial year 2022 covers the period 1 October 2021 to 30 September 2022.
2. Total employee numbers are calculated as an average over the financial year and comprise employees of consolidated Trafigura Group businesses, operations and offices. Porto Sudeste and Impala joint venture employees are excluded as these assets are not consolidated in the Trafigura Group financial accounts. Puma Energy was consolidated in Trafigura's balance sheet from 30 September 2021. As from financial year 2022, its employees are included in the above number.
3. Million metric tonnes.

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Who we are

Trafigura is a market leader in the global commodities industry. At the heart of global supply, we responsibly connect vital resources to power and build the world. Across our global network, we deploy infrastructure, logistics and financing to connect producers and consumers, bringing greater transparency and trust to manage complex supply chains.

12,347
Employees

61
Offices globally[1]

156
Countries of activity

Calgary
Houston
Geneva
Athens
Dubai
Mumbai
Shanghai
Singapore
Johannesburg
Montevideo

● Key regional hubs

www.trafigura.com/locations

Oil and Petroleum Products
32
Product types supplied

Metals and Minerals
31
Product types supplied

Renewable energy portfolio[2]
2.8GW
Generation capacity

Group companies and joint ventures

A multimodal logistics provider focused on export-driven emerging markets. It owns and operates ports, port terminals, warehouses and transport assets.[3]

An international producer of critical metals and minerals essential for a low carbon future.

A global energy supplier with a leading fuel retail and convenience store network. Primary downstream business segments include: retail and commercial fuels; aviation fuels; lubricants; LPG and bitumen.

A joint venture owned by Trafigura, Frontline and Golden Ocean, TFG Marine provides competitively priced, premium marine fuels at key hubs along the world's major shipping routes.

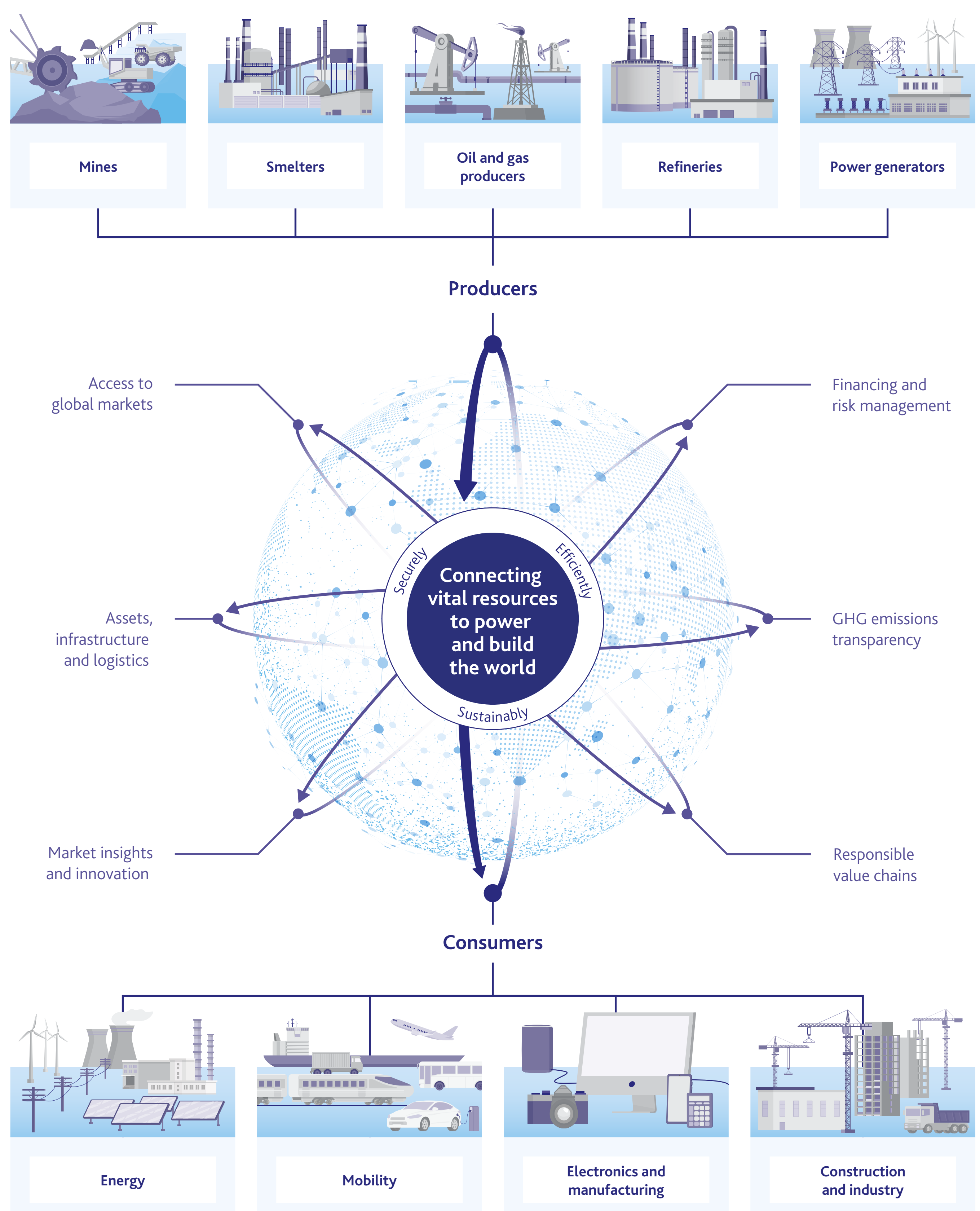
A 50:50 joint venture between Trafigura and IFM Investors that invests in on-shore wind, solar and power storage projects.

Providing investors with specialised alternative investment solutions through its investments in real assets and private equity funds.

[1] Trafigura offices only, number excludes other Group companies and joint venture offices and facilities.

[2] Nala Renewables (50% owned by Trafigura)

[3] Following the FY2022 year end, Impala Terminals completed the acquisition of a number of Puma Energy's oil storage assets and now has two business units: Impala Terminals Energy Infrastructure and Impala Terminals Dry Bulk and Logistics.


Mines
Smelters
Oil and gas producers
Refineries
Power generators
Producers
Access to global markets
Financing and risk management
Securely
Efficiently
Connecting vital resources to power and build the world
Sustainably
Assets, infrastructure and logistics
GHG emissions transparency
Market insights and innovation
Responsible value chains
Consumers
Energy
Mobility
Electronics and manufacturing
Construction and industry

Statement from the Executive Chairman and Chief Executive Officer

Resilience and reliability in turbulent markets

Jeremy Weir
Executive Chairman and Chief Executive Officer

The past year saw our people work hard to solve the disruptions created by unprecedented market volatility and the big structural shifts that are shaping our industry.

Europe's energy crisis and the war in Ukraine underscored the fragility of global supply chains and why security of supply is vital in a world of increasing geopolitical uncertainty.

The impact of climate change and the importance of decarbonisation was again evident with extreme events placing further strain on the production and movement of key raw materials.

We also responded to new rules and regulations that came into force across multiple jurisdictions following Russia's invasion of Ukraine.

Trafigura unconditionally condemned the war and the ensuing humanitarian crisis, and moved quickly to terminate long-term contracts with Russian state-owned entities ahead of sanctions taking effect in May. The company also exited its sole investment in Russia, namely a 10 percent minority stake in Vostok Oil, in a transaction that completed in July.

Against a complex and fast-changing backdrop, we had to deliver exceptional levels of service to our customers, who were also forced to adapt to changing trade flows, the impact of rising raw material prices and broader inflationary pressures.

This has shown that what we do – connecting vital resources to help power and build the world – has not only become more complex but also more critical and in demand than ever before.

I am pleased to say that we were able to successfully tackle these challenges and deliver another strong set of results, drawing on the global network, experience and capabilities we have worked steadily to build up over the past three decades.

Our performance allowed us to further strengthen our balance sheet. Group equity has almost doubled over the past two years and now stands at USD15 billion. We continue to have credit lines with around 140 banks globally.

This is a source of competitive advantage as producers and customers look to do business with strong and reliable partners that have access to readily available liquidity.

It is only by having global reach backed up by powerful analysis that we were also able to understand the interplay between different regions and commodities, and use our logistics network to provide valuable services to our customers.

To do this effectively in the current environment requires access to capital, excellent risk management capabilities and a dynamic organisation that quickly adapts to changing circumstances.

In particular, the ability to hedge commodity price risk in futures markets has become significantly more difficult given the withdrawal of market participants and resultant lack of depth in derivative markets. It is also much more cash-intensive due to the vastly increased margin requirements of clearing banks and exchanges. While larger, well-funded companies such as Trafigura are able to withstand these pressures, it is vital that measures are in place to ensure an orderly market even at times of high volatility, so that the real world movement of goods is not impacted.

At a divisional level, our Oil and Petroleum Products teams performed exceptionally well, adapting quickly to changing trade flows and identifying supply bottlenecks where our operations could add value in markets including crude oil, distillates and in particular in liquefied natural gas (LNG), where we navigated policy, price volatility, market liquidity and increasingly complex logistics to deliver a larger number of cargoes to Europe to help offset the decline in Russian gas flows.

The Metals and Minerals and Bulk Commodities teams also delivered a robust performance, although strict COVID-19 lockdowns in China curbed activity in the metals and minerals sector. However, the supply and demand fundamentals remain strong in many of the metals crucial to the energy transition. Low stocks and a lack of investment in new supply characterise many of the raw materials needed to build renewable energy or the batteries that power electric vehicles.

Our power trading business continued to grow, expanding in Europe and the US and we made further progress in extending our footprint in renewable energy.

But just as our customers were challenged by difficult market conditions and rising costs, so were some of the Group's operational assets.

Nyrstar recorded a loss due to operational issues in Australia and soaring power prices which forced the company to curtail production at its European smelters.

Regrettably, our safety performance was negatively impacted by two fatalities at our mining operations. This is unacceptable and we will continue to focus on improving the safety of workplaces across the Group. Our lost time injury rate fell over the year due to enhanced health and safety awareness programmes and training at all levels across the Group.

In its first full year following consolidation, Puma Energy's management team disposed of a significant part of its infrastructure and storage assets, as part of a wider plan to refocus the business on downstream operations and reduce debt. The business also benefited from closer integration with Trafigura's trading teams.

We made good progress on our commitments to reduce greenhouse gas emissions from our operations by 30 percent compared to a 2020 baseline, and our teams have developed longer-term targets that will be announced in our 2022 Sustainability Report, to be published in January.

While the security of supply has been the dominant theme in energy markets over the past year, the energy transition remains a key focus for Trafigura.

Policies such as the Inflation Reduction Act and an ambitious plan to 'repower' the EU with a focus on renewable energy and clean fuels such as green hydrogen, show the determination of policymakers to hit the goals of the Paris Agreement on climate change.

To that end, we are looking to help car companies and battery manufacturers to develop their supply chains to support a ramp up in electric vehicle production and adapt to the changing geopolitical environment. During the year, we announced deals to help support the development of lithium and cobalt refineries in the UK and the US respectively.

On carbon emissions, we joined forces with US data company, Palantir, to build and launch the Agora platform, a GHG emissions tracking and reporting tool. This will initially focus on metals and minerals but will be rolled out to other commodities, helping companies understand, manage and share their supply chain emissions. Alongside this initiative, we continued to invest in building our capabilities and investments in carbon markets, to provide customers with a range of solutions to offset emissions. We are proud of our involvement in Delta Blue Carbon, the largest mangrove restoration project in the world where we are the anchor buyer of its carbon credits.

Nala Renewables, a 50:50 joint venture between Trafigura and fund management group IFM Investors, pressed ahead with investments in solar power, onshore wind and battery storage to progress towards its 4GW renewable energy target. We have also made a string of early stage investments in companies involved in new energy technologies and continue to see hydrogen-derived fuels as one of the key commodities of the future.

Looking ahead, we were delighted to be part of a consortium awarded the concession to refurbish and operate a near 1,300 km railway running from the Lobito port on the Atlantic coast of Angola to the border with the Democratic Republic of Congo. The Lobito Atlantic railway line will offer a western route to market for crucial energy transition metals that is safer and less congested or prone to delay than existing eastern and southern routes. Shifting freight from truck to rail will also significantly reduce greenhouse gas emissions. The project is expected to require a total investment of USD450 million over a 30-year concession agreement, including a USD170 million investment in new rolling stock.

We are also working towards a final investment decision on a project to build a one gigawatt renewable hydrogen production plant in Denmark, to provide zero-carbon fuel for trucks and other heavy transport vehicles.

From a personal perspective, I visited many of our operations over the past year, from Montevideo to Singapore, and saw first-hand the hard work and dedication of our employees. It was especially exciting to see so many younger people developing their skills and progressing through the organisation, including through our graduate and apprenticeship programmes.

I would also like to thank our customers and suppliers for their ongoing support and our financial stakeholders for enabling our continued growth.

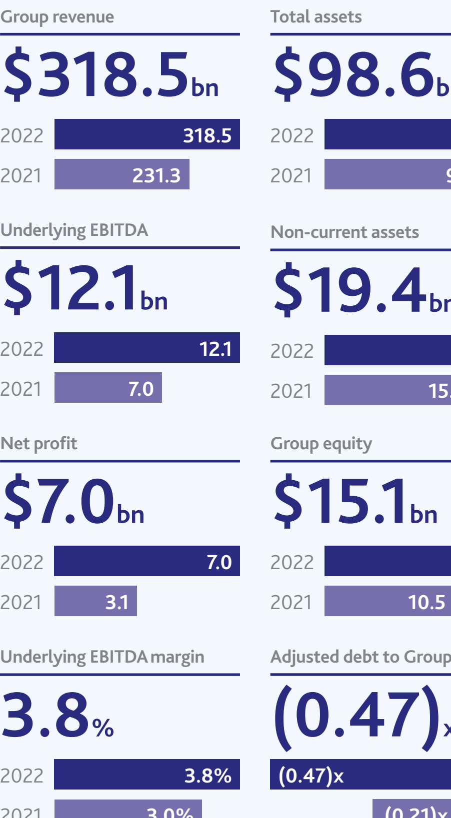
Whilst the new financial year has started well, we need to remain focused and vigilant in a period that is likely to be at least as challenging as 2022, with further market turbulence as the war in Ukraine continues and central banks lift interest rates to try and quell inflation. Trafigura is well positioned to continue to manage the challenges and supply the vital resources our customers need in the year ahead.

Financial review

Strong demand for our services and a solid risk management framework deliver record results

In the 2022 financial year, Trafigura Group further improved its market position and continued its record-breaking financial performance.

Christophe Salmon
Group Chief Financial Officer



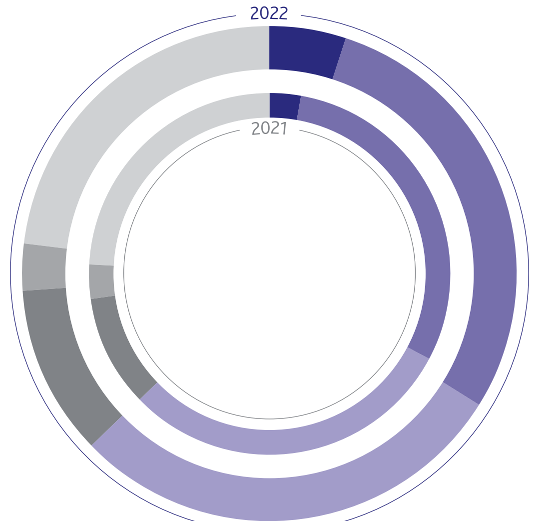
Revenues, net profit and underlying EBITDA all hit records as customers turned to Trafigura to help them navigate turbulent markets and disrupted global supply chains. Profit for the year of USD7,026 million was more than double the previous year's level of USD3,075 million, itself a company record. Revenues increased by 38 percent to USD318,476 million from USD231,308 million in 2021, driven by elevated commodity prices.

The company's robust performance was driven by its global network and resilient business model, which enabled us to supply our customers in a market upended by geopolitical tensions. Volatile prices, mismatches between supply and demand and a disconnect between derivatives and physical markets made supply chain management significantly more challenging in the past year. This played to the strengths of companies with strong balance sheets, a global footprint and ready access to financial liquidity, such as Trafigura.

The Group's underlying earnings before interest, tax depreciation and amortisation (EBITDA) margin for the year was 3.8 percent, compared to 3.0 percent in 2021. The supply chain and logistics services Trafigura provides remain by global standards a low-margin business, where profit is generated from efficient management of logistics and market risk for a substantial volume of physical commodities.

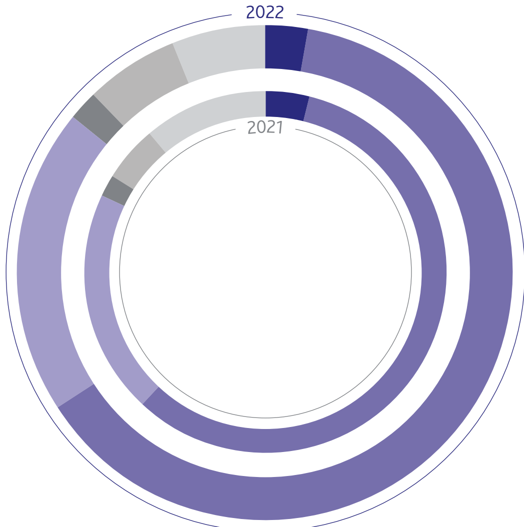
The total volume of commodities traded in 2022 was lower year-on-year. This was due to a reduction in oil and petroleum products volumes in the second half of the financial year which was driven by the termination of long-term contracts for Russian crude oil and petroleum products in light of international sanctions, reduced availability of hedging in derivatives markets, which we use to manage price risk, and a decision to focus on higher-margin opportunities.

Trafigura traded an average of 6.6 million barrels of oil and petroleum products per day in the financial year, compared to a daily average of 7.0 million barrels in 2021. Non-ferrous metals traded volumes were flat at 23.3 million metric tonnes, while bulk minerals volumes, driven by increased iron ore volumes, rose by 10 percent to 91.3 million metric tonnes.



	2022	2021
Africa	5%	3%
Asia & Australia	29%	30%
Europe	29%	30%
Latin America	11%	10%
Middle East	3%	3%
North America	23%	24%

Metals and Minerals Revenue by geography (%)



	2022	2021
Africa	3%	4%
Asia & Australia	63%	58%
Europe	20%	20%
Latin America	2%	2%
Middle East	6%	5%
North America	6%	11%

* The Energy segment includes Oil and Petroleum Products and Power and Renewables divisions.

In terms of divisional performance, our Energy operating segment, which includes our Oil and Petroleum Products and Power and Renewables divisions, had an exceptionally strong year, generating revenue of USD214,178 million equal to 67 percent of total revenue, and an operating profit of USD10,126 million.

Performance in Metals and Minerals was robust although the division's operating profit fell year-on-year, largely reflecting the impact on non-ferrous markets of strict COVID-19-related restrictions in China, which still accounts for well over 50 percent of the global demand. Metals and Minerals revenue rose to USD104,299 million, while the division's contribution to operating profit fell to USD1,877 million from USD2,473 million the previous year.

Our industrial assets continued to face challenging market conditions as well as in some cases, operational challenges – especially the Nyrstar business which faced soaring energy costs, most severely in Europe.

Our balance sheet grew by nine percent during the year to USD98,634 million as at 30 September 2022, but total assets were actually smaller at year-end than in March, reflecting the reduction in trading volumes in the second half of FY2022.

Thanks to our strong profitability, Group equity rose by 43 percent to USD15,079 million as at 30 September 2022, compared to USD10,546 million a year earlier. Group equity has almost doubled over the past two years, and we consider the current level more than adequate to support a USD100 billion balance sheet.

Income

Profit for the year was USD7,026 million, an increase of 128 percent over the 2021 figure of USD3,075 million. Underlying EBITDA rose 73 percent to USD12,089 million from USD6,996 million in 2021, while operating profit before depreciation and amortisation rose by a similar percentage to USD11,982 million from USD6,890 million.

Costs of materials, transportation and storage were 36 percent higher than in 2021 at USD302,899 million, reflecting the rise in commodity prices and also the increase in freight costs as a result of the war in Ukraine. Net financing costs rose by 82 percent to USD1,541 million from USD846 million. This largely reflected the rise in interest rates throughout the year, with USD interest rates moving from 0.15 percent in September 2021 to 3.5 percent a year later. The income tax charge for the year was USD933 million compared to USD368 million in 2021.

Depreciation of right-of-use assets – mainly relating to shipping leases – resulted in a charge of USD1,216 million, compared to USD1,095 million last year. Puma Energy's inclusion in the Group's balance sheet for the first full year made a USD207 million attribution to the USD584 million depreciation and amortisation of property, plant and equipment and intangible assets. Impairments of fixed and financial assets totalled USD639 million, compared to USD683 million in 2021. These included a write down of the value of Nyrstar's Australian smelter assets, and goodwill and various assets within Puma Energy. Net assets held for sale decreased due to strategic disposals by Puma Energy (Angola and Infrastructure division).

▲ New-build dual-fuelled LPG- and ammonia-powered tanker at Hyundai Mipo dockyard, South Korea.

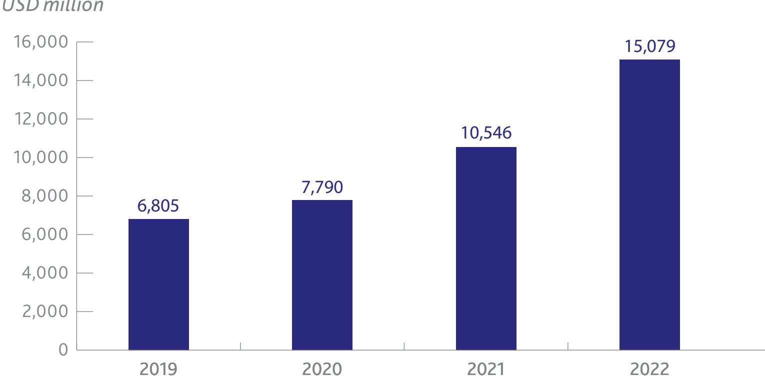
Balance sheet

Of total assets amounting to USD98,634 million as at 30 September 2022, non-current assets rose to USD19,433 million from USD15,078 a year earlier, largely reflecting the increasing number and value of shipping leases on our books and long-term LNG contracts. Current assets rose eight percent to USD78,767 million from USD72,674 million. Inventories, which are a key component of our balance sheet, fell from USD29,654 million to USD22,584 million due to improved working capital management. Trade and other receivables however, rose to USD27,631 million from USD24,907 million, reflecting an increase in margin payments to clearing brokers and futures exchanges.

Our increased balance sheet strength is illustrated by the current ratio – that of short-term assets to short-term liabilities. As at 30 September 2022, this stood at 1.27x compared to 1.19x a year earlier, while the Group's cash position at year-end stood at USD14,881 million, up from USD10,678 million in 2021.

Group equity

USD million



Cash flow

Due to our robust trading performance, we generated strong cash flows, with operating cash flow before working capital changes of USD12,125 million, a 74 percent increase on the previous year's figure of USD6,988 million. We believe operating cash flow is the most reliable measure of its financial performance, because the level of working capital is predominantly driven by prevailing commodity prices and is financed under the Group's self-liquidating financing lines. Net cash flows from operating activities turned positive to a sum of USD13,745 million compared to a negative USD234 million in 2021, reflecting the company's unprecedentedly strong organic cash flow generation and the reduction in inventories. Investing activities resulted in a net cash use of USD536 million, compared to an outflow of USD2,728 million in the previous financial year. Net cash flows used in financing activities was a net outflow of USD9,005 million, compared to an inflow of USD7,882 million in 2021. We were able to decrease our use of financing lines even though our balance sheet grew thanks to exceptional cash generation and an improved working capital cycle.

Liquidity and financing

The Group increased its access to liquidity during the 2022 financial year to manage the impact of higher levels of volatility in global markets and elevated commodity prices. We successfully secured an additional USD7 billion of financing in FY2022, bringing total credit lines to USD73 billion, provided by a network of around 140 banks globally, excluding Puma Energy.

Even under conditions of heightened volatility, we continued to maintain an ample liquidity buffer. As at 30 September 2022, the Group had immediate (same day) access to available liquidity balances from liquidity funds and unutilised committed unsecured corporate facilities of USD14.1 billion, excluding Puma Energy.

The majority of our day-to-day trading activity is financed through uncommitted, self-liquidating trade finance facilities, while we use corporate credit facilities to finance other short-term liquidity requirements, such as margin calls or bridge financing. This funding model gives us the necessary flexibility to cope with periods of enhanced price volatility as utilisation of the trade finance facilities increases or decreases to reflect the volumes traded and underlying prices. We also maintain an active debt capital markets presence to secure longer-term finance in support of our investments.

During the 12 months ended 30 September 2022, the Group completed a number of important transactions, demonstrating once again our strong access to committed and uncommitted sources of funding from banks and other sources, despite unprecedented market conditions and extreme volatility in the global economy.

In October 2021, we announced the refinancing of our Asian syndicated revolving credit facility (RCF) at USD2.4 billion equivalent. The facility was oversubscribed and upsized from the initial launch amount of USD1.5 billion equivalent, with 36 banks participating in the transaction, including eight new lenders. In line with its European RCF from March 2021, we implemented a sustainability-linked loan structure in the facility.

In March 2022, the Group refinanced two of its core syndicated credit facilities. First, we closed our flagship European multi-currency syndicated revolving credit facilities (ERCF) totaling USD5,295 million, comprised a USD2,025 million 365-day RCF and a USD3,270 million three-year RCF. The ERCF was initially launched at USD4.5 billion and closed substantially oversubscribed, with 55 banks joining the transaction. Similar to the previous year, the facilities include a sustainability-linked loan structure, with an updated set of key perfomance indicators. The targets are related to the reduction of greenhouse gas emissions, the further alignment of our responsible sourcing programme with international standards for sustainable procurement, the development of a renewable power portfolio, and the alignment of our operations with the Voluntary Principles on Security and Human Rights.

We also returned to the Japanese domestic syndicated bank loan market for the sixth time and refinanced the Japanese yen term loan credit facility (Samurai loan) with a total value of JPY93.75 billion (USD790 million-equivalent at closing exchange rate). The Samurai loan comprises a JPY84.75 billion three-year credit facility (refinanced this year) and a JPY9 billion five-year credit facility (amended but not refinanced this year, maturing March 2025). In line with the Group's European and Asian RCFs, and a first for its Samurai loan, the company structured the three-year tranche as a sustainability-linked loan.

In addition to these renewals, we closed the syndication of a nine-month liquidity facility of USD2.3 billion-equivalent in March 2022. The transaction was set up following the renewal of the Group's ERCF at a time of major uncertainties in global markets due to the invasion of Ukraine. It provided an additional funding buffer for the Group in order to proactively anticipate and mitigate liquidity requirements as a result of the substantial ongoing volatility in global commodity markets.

We are continuously working to secure new sources of liquidity that help the Group to diversify its access to funding. In September 2022, Trafigura entered into a USD800 million five-year loan agreement, which was guaranteed by the government of Germany acting through the German Export Credit Agency (ECA) Euler Hermes Aktiengesellschaft. The guarantee is provided to support the commitment by Trafigura to deliver, under a five-year supply agreement, non-ferrous metals to Germany.

After the financial year-end, in October 2022, we refinanced our Asian revolving credit facility (RCF) and term loan facilities (TLF) at USD2.4 billion equivalent, with 28 banks participating in the transaction, including three new lenders. The new facilities comprised of a 365-day USD RCF (USD685 million), a one-year CNH TLF (c. USD1,217 million equivalent) and a three-year USD TLF (USD469 million). In line with the ERCF from March 2022, Trafigura implemented a sustainability-linked loan structure in those new facilities.

Also in October 2022, we entered into a new USD3.0 billion four-year loan agreement guaranteed by the government of Germany acting through the German ECA. This loan will support a new commitment by Trafigura to deliver substantial volumes of gas to Securing Energy for Europe (SEFE), which was recently recapitalised by the German government, over the next four years.

Key financing milestones in FY2022:

Date	Milestone	Amount
Oct. 21	Asian RCF refinancing	USD2.4 billion
Mar. 22	European RCF refinancing	USD5.3 billion
Mar. 22	Japanese Samurai loan refinancing	JPY93.75 billion
Mar. 22	Liquidity facility	USD2.3 billion
Sep. 22	Euler Hermes (ECA) guaranteed loan	USD800 million

▲ Zinc concentrate arriving at Nyrstar, Budel, the Netherlands.

Public ratings

Trafigura does not hold a corporate public credit rating and does not seek to obtain one. There are a number of reasons for this, including the fact that our strategy has always been to obtain funding from stakeholders that understand our business model, rather than making investment decisions on the basis of a credit rating.

In addition, holding a credit rating could cause Trafigura to take more short-term focused decisions in order to maintain a particular credit rating level. This would conflict with the Group's focus on long-term value creation and maintenance of a strong balance sheet. We have been highly successful in securing funding without a public credit rating. Financial discipline is inherent to the company's business and finance model because of its reliance on debt markets for capital and liquidity.

The significant expansion of our sources of financing over the years has been achieved on the basis of the Group maintaining an acceptable and sustainable credit standing, consistent with an investment grade profile. The Group's financial discipline is reinforced by the financial covenants provided to unsecured lenders in the bank market and is underlined by the strong support we receive from our banking group and investors.

Value at risk

The value at risk (VaR) metric is one of the various risk management tools that we use to monitor and limit our market risk exposure. We use an integrated VaR model which captures risk, including commodity prices, interest rates, equity prices and currency rates (see further details in Note 39).

Average market risk VaR (one-day 95%) during the 2022 financial year was USD199.8 million (1.33% of Group equity) compared to USD47.9 million (0.45% of Group equity) in FY2021. Our Management Committee has established guidance to maintain VaR (one-day 95%) below one percent of Group equity. This guidance was exceeded in FY2022 due to the extreme and exceptional volatility experienced following the start of the war in Ukraine. Actions were swiftly taken to bring back the VaR within acceptable risk limits, including but not limited to reducing stocks and traded volumes. Thanks to these efforts, the average VaR decreased during the second half of the 2022 financial year to USD142.9 million (0.95% of Group equity), with latest quarter average VaR standing at USD115.8 million (0.77% of Group equity).

Leverage and adjusted debt

As a specialist in management of physical commodity supply chains, Trafigura relies on a specific funding model. As a result, it is not appropriate to apply the same financial analysis framework to it as is used for typical industrial companies. When analysing our credit metrics, banks and investors have historically considered financial leverage after excluding some specific balance sheet items (e.g. inventories and non-recourse debt such as our securitisation programmes), resulting in the use of adjusted debt as an overall leverage metric.

Adjusted debt corresponds to the company's total non-current and current debt less cash, fully-hedged readily marketable inventories (including purchased and pre-paid inventories which are being released), debt related to the Group's receivables securitisation programmes and the non-recourse portion of loans from third parties. This metric is a better measure of the Group's financial leverage than a simple gross debt metric.

In particular, the following adjustments are made:

- The receivables securitisation programmes are taken out on the basis that they are entirely distinct legal entities from Trafigura with no recourse to the Group and are only consolidated into the financial statements in accordance with the Group's accounting rules.
- Cash and short-term deposits are deducted from debt.
- Pre-sold or hedged stock, including purchased and pre-paid inventories which are being released, are deducted from debt. This reflects the great liquidity of the stock and the ease at which it could be converted to cash. As noted above, our policy is to have 100 percent of stock hedged or pre-sold at all times.
- Non-recourse invoice discounting or specific portion of loans (for example, non-recourse portions of bank lines used to extend prepayments to counterparties) are deducted from debt.

As at 30 September 2022, the ratio of adjusted debt to Group equity stood at minus 0.47x, down from minus 0.21x at 30 September 2021. This reduction principally reflected the exceptionally strong retained earnings during the year, as well as cash generation and improvement of working capital. Whilst the ratio of adjusted debt to Group equity was particularly strong in 2021, our intention is to maintain this ratio up to a maximum level of 1x. Any upwards fluctuation of this ratio to 1x in the future should not be considered as a sign of any relaxation of our disciplined efforts to maintain a solid credit standing.

The Group's adjusted debt to equity ratio at the end of the reporting period is calculated as follows:

	2022 USD'M	2021 USD'M
Non-current loans and borrowings	**9,614.5**	10,911.6
Current loans and borrowings	**29,663.6**	34,269.5
Total debt	**39,278.1**	45,181.1
Adjustments		
Cash and cash equivalents	**14,881.3**	10,677.5
Deposits	**642.0**	460.0
Inventories (including purchased and pre-paid inventories)	**23,873.6**	30,508.8
Receivables securitisation debt	**5,390.7**	5,150.6
Non-recourse debt	**1,607.1**	555.4
Adjusted total debt	**(7,116.6)**	(2,171.2)
Group equity	**15,078.6**	10,545.6
Adjusted debt to Group equity ratio at the end of the year	**(0.47)x**	(0.21)x

Taxation

Trafigura operates in a multitude of jurisdictions and adheres to applicable local and international tax law, including legislation on transfer pricing, in the countries in which it operates. The Group's tax policy is to pay appropriate tax according to work carried out in each jurisdiction, as determined by a functional analysis of operations using standard measures wherever possible, underpinned by reports prepared to fulfill local transfer pricing requirements.

The Group's effective tax rate – the average rate at which consolidated pre-tax profits are taxed – varies from year to year according to circumstances, and in FY2022 it was 12 percent (or USD933 million) compared to 11 percent (or USD368 million) in FY2021. The change to the effective tax rate is a consequence of a change in the mix of taxable profits and losses generated in the various countries within which the Group operates.

Outlook

The supply chain disruptions and the volatility in commodity markets that underpinned our record financial performance in FY2022 are continuing. This creates an ongoing, growing need for commodity supply chain management services that we are well positioned to provide.

It has become increasingly clear in the past two years that providing these services requires a global footprint, superior market intelligence and an extremely solid balance sheet. With Group equity of USD15 billion and an unparalleled network of customer relationships around the world, we are more robust than ever. Although our industrial assets, such as Nyrstar, remain challenged, market conditions remain constructive overall and we have made a strong start to trading in our new financial year. This gives us confidence that we will deliver another solid year of performance in 2023.

Operational review

Managing complexity

Agility, teamwork and IT provide the platform for growth.

Mike Wainwright
Executive Director and Chief Operating Officer

To manage complex supply chains and move commodities around the world requires many things including infrastructure, risk management, sophisticated IT systems, and a skilled workforce, with a clear governance framework. These pillars and other important elements – such as our employee ownership model – have been the foundations of our company's success since its inception in 1993.

Over the past three years, our systems, people and processes have been tested as never before in a persistently and increasingly volatile business environment; first by the global pandemic and more recently Russia's invasion of Ukraine.

Risk management process

Trafigura is an active participant in commodity derivative markets. We use futures contracts to manage price risk and lock in profit margins when we are moving commodities from where they are produced to where they are consumed. The reason we do this is because supply chain management is fundamentally a low-margin business, operating in markets where prices are often subject to very significant changes outside our control.

In the exceptionally volatile market conditions of February, March and April this year, access to these markets became more difficult and expensive. This was because exchanges and clearing brokers significantly increased margins – or cash deposits – required for each transaction. This sometimes happened at very short notice.

As a result of these margin calls and fearful of a cash drain, some users backed away from the market and liquidity dried up.

For a company the size and scale of Trafigura, this lack of depth in financial markets presented a number of challenges, which we were swift to address.

First, we moved quickly to secure USD2.3 billion of additional liquidity from a number of our core lenders to provide a cash buffer. In addition, we also reduced our trading volumes, focusing on higher margin business.

In some particularly volatile or illiquid parts of the markets, as part of a prudent approach to risk management, derivative positions on future exchanges were supplemented with alternative risk mitigation measures. Assessing and managing the liquidity risks and costs associated with hedging on futures markets has become a core part of a trader's job.

As a company, we are focusing on how we use and access futures markets in a more volatile and uncertain world, assessing the alternatives and not simply defaulting to past practices. And that perhaps is the biggest learning of the past year – a greater awareness of what can happen in financial markets and the impact that can have on our day-to-day business.

Although liquidity on exchanges has improved, it has not returned to its pre-pandemic levels. Certain parts of the market remain difficult to access and that means that some hedges will not continue to perfectly offset the price risk associated with an underlying physical cargo. In these instances that leaves us with a choice: we can either turn away business or charge a higher margin to compensate.

Overall, our risk exposure – as measured by average Value at Risk (one-day 95 percent) – increased during the year because of the extreme market volatility that followed the start of the war in Ukraine. However, in the final quarter of our financial year, average VaR decreased and was less than one percent of Group equity, due partly to the actions previously outlined.

Compliance

Clear communication and teamwork were also vital in addressing government and regulatory interventions following the invasion of Ukraine.

While sanctions have been a feature of commodity markets for many decades, an unprecedented number of transactions were affected by the sanctions imposed on Russia. Since March, there have been eight iterations of EU sanctions with the prospect of more to come, plus the associated introduction of the G7 price cap on Russian oil.

Keeping pace with the introduction of new rules across a number of jurisdictions was the job of our strong Global Compliance team which worked closely with senior management and our commercial teams to understand what was prohibited by sanctions.

Commercial teams' access to compliance and vice versa was exceptional during the year, underscoring the importance of Trafigura's open-door policy and team ethos where all parts of the business pull together to support each other.

Our Compliance team had access to the right people internally and externally to dissect the information as it came in and to disseminate it very quickly. As one of the world's biggest supply chain managers, we must be compliant with sanctions and regulations.

Costs and inflation

Although 2022 has been an exceptional year for our company, we have not been immune from the inflationary pressures affecting other industries and the major economies of the world. As such, it is important that we do not become complacent with regards to our cost base.

To that end, we maintained a laser-like focus on our overheads. Puma Energy provides one example of how we approach this challenge. Since the consolidation of the company into the Trafigura Group a year ago, its management team has worked hard to rationalise its cost base and reduce unnecessary wastage. This has injected a lot of positive momentum into the business.

In the year ahead, we will seek to become even more efficient in our processes, utilising technology and Titan, the proprietary software platform that we use to manage and plan our business activities.

Data science and engineering

In total, Trafigura spends around USD200 million per year on information technology across a number of platforms including Titan. One focus of activity has been data science – the systematic analysis of data within a scientific framework.

Due to advances in digital technology, there is now a vast amount of publicly available data that can at times be overwhelming. But if it can be analysed and structured correctly this data can be highly valuable and provide the company with a competitive edge.

This applies not only to our traditional markets where traffic and aviation data, for example, can help predict peaks and troughs in oil demand, but also to new ones such as gas and power trading, where prices move in response to a complex number of factors that only a computer can process and understand.

Bringing together a huge number of databases and feeds and writing software to integrate the data into machine learning models is no easy task however, and it requires continued investment in our Data Science and Engineering team. We are working to make our data science platform more accessible so that it is easy for employees to access around the world.

Employee shareholder model

Finally, a comment on Trafigura's corporate employee ownership model. Since the company's foundation almost 30 years ago, it has been owned by a growing number of its employees, for whom equity is an important element of remuneration. 2022 saw a further increase in the number of shareholders, which now stands at more than 1,100.

We continue to see significant benefits from our employee shareholder model. Not only does it set the company apart from our peer group, it also offers a powerful retention and recruitment tool. This is important as the company expands into markets such as green hydrogen and power trading that require a different set of skills to those typically associated with our industry.

Our shareholder model encourages our senior employees to take the long view and think hard about risk, business continuity, and the future performance of the company.

Above all, our shareholder structure drives a close alignment between management and senior employees, leading to a highly transparent and collaborative culture that we believe is unique in our industry.

Marketplace review

A year of disruption and dislocation in commodity markets

Saad Rahim
Chief Economist

As the global economy emerged from COVID-19 and picked up speed, initial expectations were for 2022 to be a less volatile year. By any measure, this turned out not to be the case.

Indeed, at the start of our financial year in October 2021, it seemed the lack of investment in new supply, combined with post-pandemic demand recovery, would result in significant tightness in numerous commodity markets.

The fact that markets were in a fragile state to begin with magnified the shock from Russia's invasion of Ukraine in February 2022 and led to unprecedented price volatility.

The war has upended historic commodity trade flows, led to record low inventories in many commodities and created uncertainty about supply. Sanctions added multiple layers of complexity and disruption.

Throughout the tumult, commodity prices have consistently struggled to reflect underlying supply and demand.

This is due primarily to three major macroeconomic headwinds that overwhelmed the fundamentals: Central Banks, led by the US Federal Reserve, raising interest rates rapidly to combat the highest inflation in decades; Europe's energy crisis; and China's zero-COVID-19 policies and property sector weakness.

Taking the first point, supply chain disruptions, a surge in demand as lockdown restrictions eased, record low inventories of housing and vehicles, and a lack of workers all contributed to inflationary pressures.

This was especially true in the US, as the population shifted from consuming goods to services, which in turn drove wages higher, resulting in yet more inflationary pressures. Europe, meanwhile, had to contend not just with these factors, but also with soaring energy costs resulting from Russian curtailment of gas supplies.

Central banks responded by sharply lifting benchmark policy rates in a very short period of time. Rising US yields and concerns about the impact of tighter financial conditions on the global economy saw the US dollar strengthen substantially, to the highest level in over 20 years against major currencies, and the highest ever in the case of many others. This was another challenge for commodity prices, which are denominated in US dollars.

While rising energy costs have contributed to inflation across the world, they have been particularly pronounced in Europe, due to the curtailment of Russian exports of gas. This was the second headwind.

Although Russian flows to Europe had already started to decline in 2021, it is only in the months following the invasion of Ukraine that the full weight of Moscow's cuts came to bear.

Over the course of the second and third quarters of 2022, flows dropped by 80 percent versus pre-invasion levels and sent power and gas prices in Europe soaring to record levels. European's benchmark gas price (TTF) rose from a long-term average of close to €20 per megawatt hour to well over €300/MWh, while power prices spiked to a record of over €700/MWh in some of the major, western European countries.

As a result, many big industrial consumers in Europe were forced to curtail output. The prospect of further cuts raised the spectre of a major industrial recession, dampening sentiment and the outlook for demand.

The third major macro-economic headwind was China's growth, which was weaker than expected for two main reasons.

The first of these was the impacts of China's zero-COVID-19 policies, which led to restrictions being imposed on large parts of the country in the second quarter of 2022.

Shanghai in particular saw an extended period of lockdown, and given its status as a main financial and manufacturing hub, the impacts on activity and sentiment were widespread.

More broadly, the unpredictable nature of outbreaks and the stringency of lockdown restrictions meant consumer and investor confidence remained subdued for most of the year. The impact was magnified by the second factor: ongoing weakness in the property sector, brought about in part by the government's attempts to manage the indebtedness of key players in that sector.

Although growth outside the property sector rebounded materially in the third quarter of 2022, as shown by dwindling stockpiles of base metals and other production and investment indicators, the weakness in property has soured investor sentiment.

In this "macro versus micro" environment, commodity prices struggled to perform, and in many cases seemed to have completely disconnected from physical market realities.

Oil markets

Oil markets were buffeted on one side by constrained supply, due to under-investment and sanctions, and on the other side by potential demand weakness, caused by China's zero-COVID-19 lockdowns and higher prices.

By the middle of the year, prices seemed set to move higher thanks to stresses on the supply side, which looked difficult if not impossible to solve in the near term.

However, the underlying tightness in markets was masked as Organisation for Economic Cooperation and Development (OECD) governments chose to try and cushion the impact of higher prices on consumers by authorising unprecedented releases from their respective strategic reserves.

The impact was most acutely felt in the US, due to the release of 180 million barrels of crude into the market. This oil flowed into commercial inventories, allowing them to hold at levels that by end of the year were well within historical ranges, giving the appearance of a well-supplied market.

As a result, however, the US Strategic Petroleum Reserve (SPR) fell to under 400 million barrels for the first time since 1984, as demand remained relatively robust despite high prices, leading to inventory draws.

A major reason why SPR releases were needed is because supply has continued to be constrained. Consensus projections coming into this year were for US oil production to grow by close to one million barrels per day (December-to-December), but instead, production has grown only approximately 0.3 million barrels per day.

The lack of growth reflects lower investment rates in the sector, as companies have prioritised shareholder returns and capital discipline over increasing capital expenditures and production.

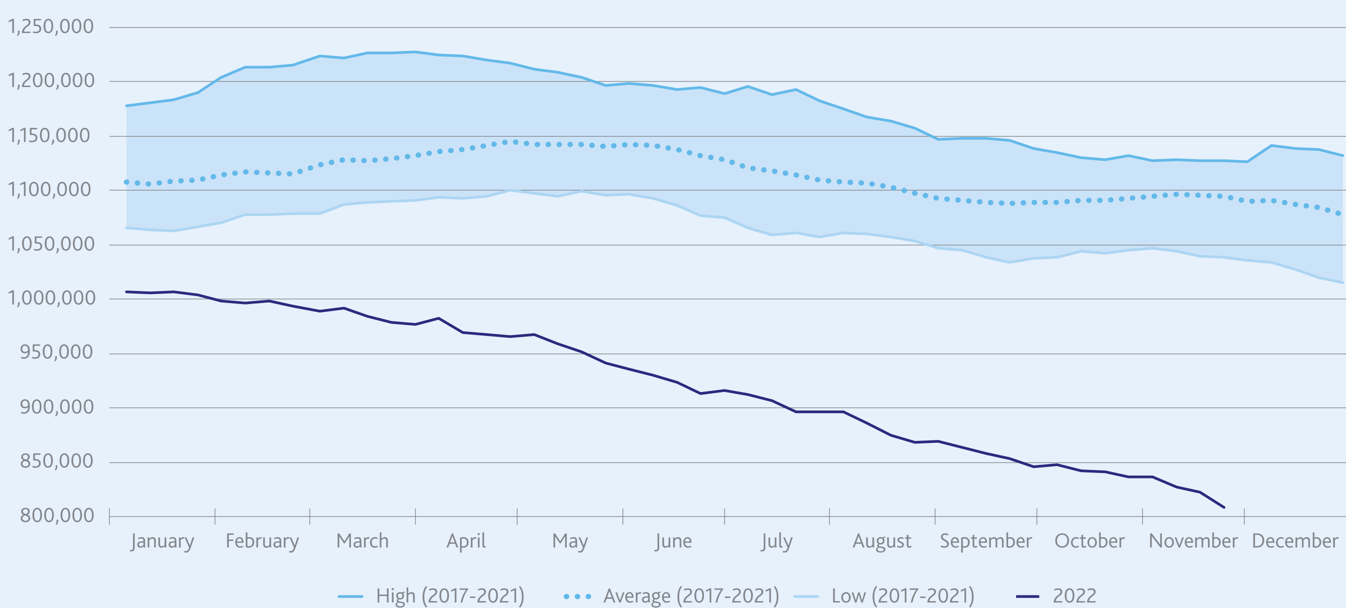
As such, while the rig count (as a proxy for overall investment) continued its post-pandemic rebound in the earlier part of the year, it has effectively flat-lined since June 2022, limiting the scope for further production gains.

The other notional source of additional supply has traditionally been OPEC and its allies. Not only did they recently agree to a two million barrel per day output cut, but their production capacity is falling short of expectations due to years of under-investment.

Even prior to the Russian invasion of Ukraine, OPEC+ producers were collectively under-performing their production quotas by over 1.5 million barrels per day, as the output of members outside the "core OPEC" countries of Saudi Arabia, Iraq, UAE and Kuwait hit multi-decade lows. New capacity is being brought on in the core group, but outside of the UAE it will take some years yet to reach the market.

US crude inventories including Strategic Petroleum Reserve

Stated in thousand barrels



Source: Energy Intelligence Agency (EIA)

And this is all before the extent of the impact of sanctions and the G7 price cap on Russian oil flows is known. While the overall intent of the EU and US is to redirect flows, not reduce them, the uncertainty involved in dealing with such an extensive and inter-connected market means that in reality there is likely to be at least some impact.

If nothing else, the redirection of Russian barrels from Europe to other markets such as India and China – and from Arabian Gulf and US barrels to Europe to compensate – has turned the shipping market on its head.

Increased transit times have effectively taken vessels out of the supply pool, pushing daily freight rates significantly higher than they were previously, with rates for some classes of clean product tankers reaching new records.

Oil demand overall has struggled to regain its pre-pandemic highs, but this is in large part due to the impact of China's zero-COVID-19 policies, which have restricted travel both domestically and internationally. Even when these policies were relaxed, the risk of further lockdowns impacted domestic travel plans and dampened demand.

But while growth might have been softer than anticipated, it was certainly not contractionary. Indeed, the International Energy Agency's latest report estimated 2022 oil demand growth at 2.1 million barrels per day – a strong increase relative to history.

Metals markets

The dominant theme in metals this year has been Chinese demand, overwhelming all other factors, including record low inventories for key metals such as copper.

The dual headwinds of China's zero-COVID-19 policy and weak property sector drove investor sentiment to the degree that even though demand was robust in the second half of the year and stocks dwindled, prices declined.

How metal prices perform from here will depend on China's exit from COVID-19 lockdowns, in terms of timing and sustainability, and also on the property sector not getting worse.

Perhaps no other metal has shown the 'macro versus micro' conflict better than copper. By the end of our fiscal year in September, copper stocks had fallen to the lowest level in modern history in terms of days of use, and the lowest absolute levels since 2007. And yet the price was USD3,000 per tonne below the record levels reached in March.

Still, the price has started to pick up since the start of October, helped by a strong rebound in Chinese copper demand. Contrary to what media reporting and sentiment might indicate, China's copper demand in the second half of 2022 should grow by close to seven percent year-on-year.

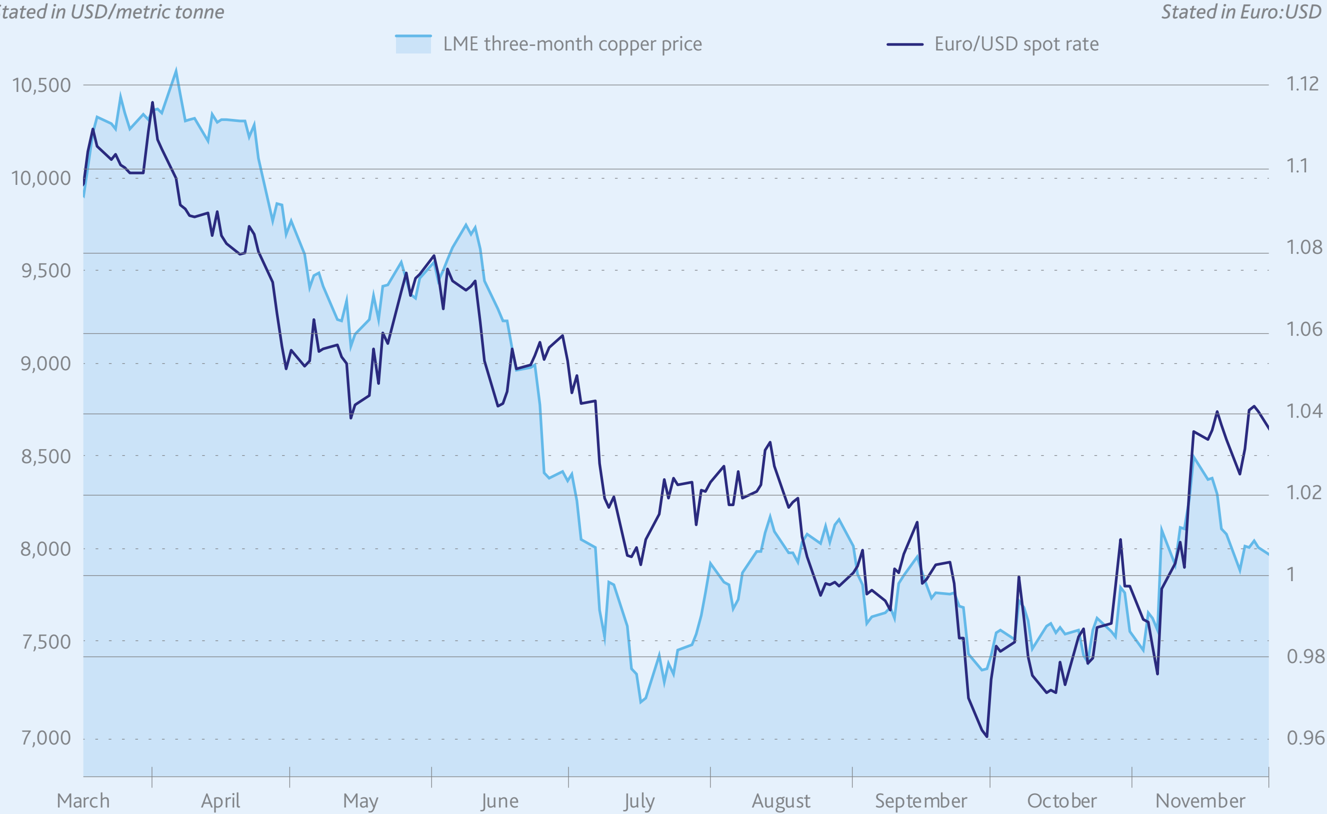
The pick-up has been led by many of the same sectors that drove ex-China growth in the first half of the year, but with particular emphasis on the expansion of the grid and electric vehicle production. Overall, global demand for refined copper is set to grow by a healthy 2.8 percent over 2022.

Global refined copper stocks in days of use

Stated in days of use

Source: Trafigura Research, Bloomberg, LME, SHFE

US dollar strength headwind for commodities



Source: Bloomberg Finance L.P., Trafigura Research

The year ahead

Looking forward, the world appears poised for more volatility and uncertainty. The war in Ukraine continues and could cause further disruption to global trade if the conflict escalates. Inflation may be coming off its peak, thanks in no small part to declining energy prices, but it remains too high for comfort.

As such, central banks are still in the mode of tightening financial conditions, and the full impacts have yet to be felt, especially as we are still not at the end of the rate-hiking cycle.

China may be looking towards a gradual re-opening, but a massive resurgence in COVID-19 cases could see Beijing revert to previous lockdown measures. A colder-than-normal winter plus any further disruptions to gas supplies could trigger a fresh spike in European energy prices.

And yet, as of now, global economic growth may be slower, but is far from contracting. Labour markets remain very healthy, consumer spending remains robust, and credit markets show no signs of stress. A continuing reversal in the US dollar, rates and inflation will all be tailwinds for global growth. Governments have embarked on major renewable and infrastructure investment programmes that should provide a source of sustained future demand, in particular for key metals.

However, renewed demand growth will run up against the realities of structural under-investment across commodities. Given how low inventories are for key raw materials already, together with a lack of readily available spare capacity, any sustained rebound in consumption could lead to significant tightness and a supply crunch.

Indeed, we appear to be running the risk of moving away from a world of commodity cycles to one of commodity spikes, where a lack of production capacity results in prices rising to levels that cause demand destruction, before falling. But even then, prices will remain elevated, given how long it takes to bring online new projects and the unyielding focus on capital discipline and shareholder returns of the major mining houses and big oil companies.

Performance review

Oil and Petroleum Products

A record performance for Trafigura's Oil and Petroleum Products Trading division for a third consecutive year.

Jose Maria Larocca
Ben Luckock
Hadi Hallouche
Co-Heads of Oil Trading

312.5mmt
Total volume traded
(2021: 330.3mmt)

6.6m
Average barrels traded per day
(2021: 7.0m)

Oil and Petroleum Products volumes traded (mmt)	2022	2021
Biofuel	0.7	0.6
Bitumen	0.2	0.3
Condensates	2.0	1.7
Crude oil	149.0	156.0
Fuel oil	36.7	38.4
Gasoline	24.3	24.8
Liquefied petroleum gas (LPG)	7.8	8.3
Liquefied natural gas (LNG)[1]	13.0	14.0
Middle distillates	41.4	46.7
Naphtha	13.6	16.2
Natural gas[1]	23.7	23.2
Total	**312.5**	**330.3**

[1] Million metric tonnes of oil equivalent.

Performance overview

The impact of the COVID-19 pandemic and the subsequent rebound in demand in most key economies placed further pressure on previously efficient global supply chains in the first half of our financial year. But these disruptions were eclipsed by the impact of Russia's invasion of Ukraine in February, which required a fundamental reworking of energy supply routes – in addition to the significant humanitarian impact of the war in Ukraine.

With an increased focus on security of supply, against a backdrop of heightened market volatility, our Oil and Petroleum Products division delivered a record result in 2022.

Key to this performance was a determination to help our customers adjust to changing trade flows, as well as close coordination between each of our trading teams. This allowed the division to identify supply bottlenecks, ensure we could manage significant risk and get oil and petroleum products to our customers as efficiently as possible.

A lack of liquidity in futures markets, which pushed up the cost of hedging, meant higher premiums were demanded by physical suppliers to move products and a period of market imbalance persisted as governments introduced new sanctions and rules.

Total volumes traded were slightly lower year-on-year following the termination of our long-term Russian crude oil and products contracts in advance of EU and Swiss sanctions being introduced.

Over the year, a combination of rising prices and a strengthening US dollar placed a greater emphasis on energy affordability. Utilising our size and scale, we were able to work with customers around the world to offer more flexible payment terms to ensure continued supply.

At the same time, we added a number of new commodities to our product offering including aviation gas, biofuels, base oil, petrochemicals and ammonia, a precursor to low carbon ammonia becoming a globally traded fuel source, in particular for the shipping industry and to transport hydrogen. These more specialised commodities are high value products that allow us to offer a wider service to customers and exploit synergies with other trading activities across the business.

Looking ahead, we expect the crude oil market to remain unsettled in 2023, as low global inventories and geopolitical instability run up against concerns of slowing global growth as central banks raise interest rates to fight inflationary pressures. Managing the repercussions from these changes will be the main priority for the division in 2023.

Crude oil

The global crude oil market was volatile in 2022, as demand remained strong but supply was pressured by the war in Ukraine and active market management by OPEC and its allies. This included a period of near record prices and backwardation[1].

The sanctions levied on Russia following the full invasion of Ukraine changed long-established trade flows and forced consumers in Europe and a number of other countries to look further afield for supplies.

Our global footprint and experienced teams enabled us to adapt to these fast-changing market dynamics. Clear communication and decisive action were key in understanding disrupted markets and providing security of supply for our customers.

Volumes were slightly lower, in part due to the decision to terminate long-term contracts to offtake Russian origin crude oil.

During the year, we struck supply deals with a number of refiners and secured new offtake arrangements with producers in Canada and West Africa. The Crude oil team also continued to build on Trafigura's long-established position in US shale oil, expanding its customer base and introducing Midland West Texas Intermediate to several end users that have not used the grade before. The decision to add US Midland West Texas Intermediate to the benchmark assessment for Brent should boost demand and customer acceptance.

Gasoline

Demand for gasoline remained below its pre-COVID-19 levels in 2022, with the shift to homeworking, particularly in the US, continuing to affect commuter traffic levels.

Following the invasion of Ukraine, there were concerns that sanctions placed on Russian exports of vacuum gas oil would affect US refinery runs and a reduction in Russian naphtha supply would shrink global gasoline supply. Consequently, we witnessed a large increase in refinery margins.

Against this backdrop, our Gasoline team performed strongly and volumes remained consistent with the same period in 2021. The highlight of the year was the expansion of our European business, which will continue to be an important driver for the Gasoline team over the next 12 months.

In the year ahead, several themes will shape the gasoline market, including the trend towards working from home and a policy change in China to increase refinery runs. At the same time, supply chain disruptions caused by the Russia-Ukraine conflict will continue to create regional imbalances and periodic distortions.

Naphtha and Condensates

Faltering demand and ample supply were the main drivers of the naphtha market in 2022, as the conditions that prevailed in the previous financial year were almost reversed.

In Asia, the petrochemicals industry struggled as strict COVID-19 policies took their toll on economic activity in China, while European producers were hit with rising costs and slowing growth, impacting their margins. On the supply side, refinery runs picked up. The result was an oversupplied market and naphtha was forced to reprice at a level where a lot more of it could be used in gasoline blending. In condensates, it was a year where heavier grades did significantly better as a result of their higher middle distillates yield.

Our Naphtha and Condensates team seized on these changing market dynamics to deliver a strong performance over the year, using its global reach and diversified portfolio to help balance supply and demand. However, volumes were down on 2021 as a result of reduced activity in Russia following the invasion of Ukraine.

Given our global footprint and access to storage and shipping, the Naphtha and Condensates team is in a strong position to help its customers adapt to changing trade flows and market dynamics and to keep sourcing products at competitive prices. We expect the disparity in condensate premia to persist, with heavier grades supported by strong gasoil refining margins, but lighter grades likely to lag as naphtha displaces condensate in splitters.

We expect the market to remain volatile in 2023 as the European Union embargo on Russian oil exports comes into force and the region's petrochemical industry seeks new sources of supply.

www.trafigura.com/oil

[1] A market structure where prompt contracts trade above later-dated ones in a sign of tightening supplies.

▲ Marine fuel bunkering, Algoa Bay, South Africa.

Fuel oil

High prices, low stocks and volatility were the key features of bunker and fuel oil markets in 2022. On the supply side, traditional trade flows were disrupted by the war in Ukraine and the subsequent sanctioning of Russian oil. At the same time, fuel consumption continued its post-pandemic recovery as reflected by increased bunker demand. There was also greater use of fuel oil in power plants as a result of soaring gas prices. Together, this led to heavily backwardated markets and record-high premia.

Our Fuel oil team performed exceptionally well in this challenging environment, stepping up as a stable and reliable supplier as many rivals struggled to access the finance or hedging tools needed to handle unprecedented market volatility. Although our traded volumes fell in Europe, we increased our presence in Asia and expanded our footprint in the Americas.

In addition to our strong performance in physical trading, we continued to expand our operations with TFG Marine, the bunkering joint venture between Trafigura Marine Logistics, Frontline and Golden Ocean, building our volumes and customer base year on year. We also established a new base oil trading book, a product used by refineries to make lubricating oil and greases, quickly finding synergies with our current customer base.

Looking forward, the key challenge for the Fuel oil team will be understanding and handling the impact on supply and demand of heightened geopolitical tensions, tighter monetary policy and a changing competitive landscape.

Distillates

The distillates market in 2022, was a story of strongly rising demand as the post-pandemic economic recovery continued. Gas-to-oil switching provided a further demand kicker. The global refining system struggled to increase production fast enough, while supply chains had to be consistently rearranged amid complex web of sanctions on Russian oil and diesel flows. In addition to those factors, extreme weather events and significantly higher gas prices in Europe resulted in a large volume of diesel being used.

Against this backdrop, it was a highly successful year for the Distillates team. Lower volumes meant we were able to focus on core markets and help key clients make sense of an increasing complex supply picture.

The team was able to extend its reach into industries that had previously relied on gas but were looking for cheaper options to power their operations. This highlighted the ability of Trafigura to draw on a deep pool of expertise to help create new supply chains.

We made sure storage positions did not become over troublesome in a heavily backwardated market and we were alert to inflationary pressures in shipping and liquidity requirements to enable us to hedge price exposure.

The outlook for 2023 will depend on the balance between slowing global growth and the extent of gas-to-oil switching. The availability of cargoes as Europe's embargo on Russian diesel comes into force will be another factor in determining the direction of the distillates market.

Bitumen

Commodity prices and high energy costs were the main influences on the bitumen market in 2022. The year started slowly, in terms of paving activity, especially in developing countries, which struggled with the rising cost of bitumen. COVID-19 lockdowns in China weighed on demand in the Far East for the third year in a row. As we progressed through the year and the roadwork season started in the US and northwestern Europe, consumption started to pick up, creating business opportunities mainly in the Atlantic basin.

On the supply side, production was ample because of a strong pickup in transport fuel demand, which triggered higher refinery runs globally.

Our Bitumen team was able to react quickly to these regional trends and deliver a stronger performance on a year-on-year basis, using storage capacity and our large fleet of bitumen carriers to win tenders and supply customers. Volumes were broadly stable across the financial year.

The outlook for the year ahead is highly uncertain and dependent on the impact of tighter financial conditions as central banks raise interest rates and uncertainty over the rate of crude and fuel oil production next year.

Biofuels

Biofuel markets were rocked by extreme turbulence in 2022, with prices swinging from levels high enough to spark demand destruction to lows that made it a cheaper blending component than fossil fuels in some regions of the world.

Adding to the volatility, some countries in Europe also slashed their blending mandates to reduce prices at the pump for consumers and because of concerns about supplies of grain, vegetable oils and gas following events in Ukraine. As the war continues, other countries could do the same, placing a question mark over biofuel demand in the year ahead.

Notwithstanding these developments, we remain committed to continuing to find ways to grow and expand our customer base. The Biofuels team performed exceptionally well during the year, weathering a multitude of storms, while at the same time expanding our business in Europe, Latin America and Asia.

As we head into 2023, a strong focus will remain on any further changes to government policies and blending mandates. We will continue to look for synergies between our biofuels and the rest of our refined products business.

Liquefied petroleum gas

Unlike other parts of the oil industry, liquefied petroleum gas (LPG) experienced little impact from the war in Ukraine. The main driver of the market in 2022 was sluggish economic growth in Asia, and China in particular, as a result of strict COVID-19 policies and weakness in the property and petrochemicals sectors. This dented demand for LPG from the Chinese petrochemicals industry, which also had to contend with weak export markets in Europe.

On the supply side, we continued to see an increase in LPG exports, with strong flows out of the US and the Arabian Gulf. We expect production growth to continue in 2023, although infrastructure bottlenecks could crimp supplies from the US.

Over the financial year, our LPG business continued to expand its geographical reach and the scope of its operations. Our portfolio now includes ammonia, a fuel we expect to play a meaningful role in the energy transition.

While we expect more challenging conditions in 2023, large flows of LPG will still need to be moved between regions to balance the market. We expect to play a meaningful role in this process and also in helping Europe seek alternative sources of supply as trading flows of other products are further affected as a consequence of the war in Ukraine.

Liquefied natural gas and Natural gas

In 2022, natural gas made headline news as prices rocketed to unprecedented levels deepening the energy crisis in Europe.

Over the past two years, Russia has been steadily reducing its sales to the bloc so that today they are now at a fraction of pre-pandemic levels.

To compensate, Europe has been forced to restart its fleet of coal-fired power stations, extend the life of ageing nuclear power plants and bid aggressively for every available cargo of liquified natural gas (LNG) on the market.

In this environment, our integrated LNG and Natural gas team performed well. However, our immediate priority following Russia's invasion of Ukraine in February 2022 was ensuring the safety of colleagues in Kyiv, who had built a successful domestic trading business.

Our LNG and Natural gas team also got to work helping customers adapt to the new market realities caused by the war and the reordering of global energy flows.

Using our network of leased pipelines, we were able to carry gas from the Permian Basin, which straddles West Texas and southeastern New Mexico, to liquefaction plants on the coast, then across the Atlantic to deliver it to our regasification slots in Europe.

From here, our LNG and Natural gas team was able to trade and deliver the molecules to where they were needed. In many instances, the gas went into leased storage ahead of the winter.

This cohesive approach allows us to increase efficiencies, reduce costs and meet demand wherever it appears in the supply chain.

Of course, the year was not without its challenges. The sharp increase in margining requirements by futures exchanges and clearing brokers substantially increased the cost of moving physical cargoes, which reduced liquidity in both physical and financial markets and exacerbated volatility. The explosion at the Freeport LNG terminal, where we have an offtake agreement, removed LNG and significant flexibility from our portfolio at a time when the market needed them most.

However the size and scale of our operations meant that we were able to substantially mitigate any issues for our end buyers relating to the lost Freeport volumes and we continued to ensure safe and reliable LNG supply.

Looking forward, we expect gas and LNG markets to remain volatile. While Europe should avoid a blackout this winter by drawing on inventories and cutting demand, it will need to import huge volumes of LNG in 2023 given the massive reduction in flows from Russia. For LNG to continue to flow to Europe as opposed to other demand centres, the price will need to remain elevated and we expect security of supply to remain paramount for customers in Europe through next winter and beyond.

Performance review

Metals and Minerals

Despite market volatility due to numerous geopolitical events, the Metals and Minerals division recorded a robust performance in 2022.

23.3mmt

Total volume non-ferrous concentrates and refined metals traded (2021: 22.8mmt)

91.3mmt

Total volume bulk minerals traded (2021: 82.7mmt)

Gonzalo de Olazaval, Kostas Bintas
Co-Heads of Metals

Non-ferrous concentrates and refined metals traded (mmt)	2022	2021
Concentrates total	14.4	13.3
Refined metals total	8.9	9.5
Total	**23.3**	22.8

Ken Loughnan
Head of Bulk Minerals

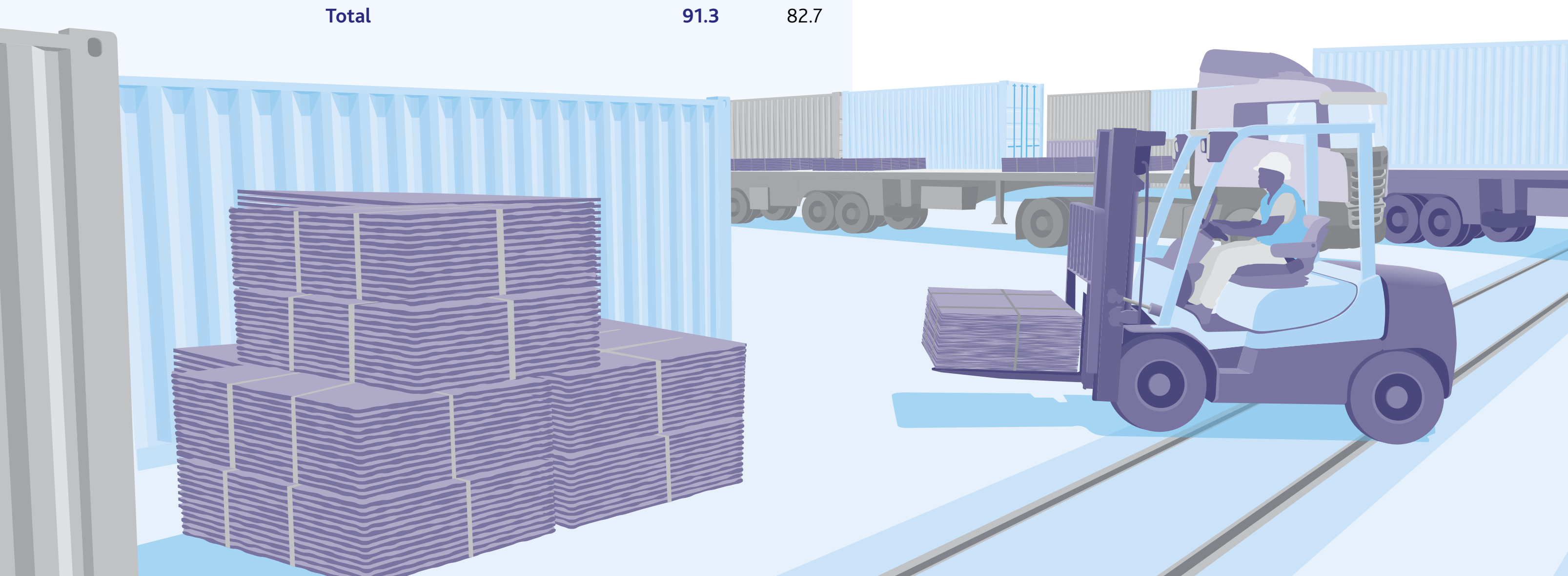
Bulk minerals volumes traded (mmt)	2022	2021
Iron ore	31.0	23.1
Coal	60.3	59.6
Total	**91.3**	82.7

Performance overview

Demand from China was subdued for a number of metals compared to prior years due to successive and prolonged shutdowns as the government sought to contain rising cases of COVID-19. This was, however, partially offset by strong demand from western economies driven by the acceleration of the energy transition, namely investment in renewable energy and electric vehicles.

Despite the broadly positive fundamentals of underlying supply and demand for metals and minerals, London Metal Exchange (LME) prices were weighed down, in particular in the second half of our financial year. The key drivers for weaker prices include a strong US dollar and macroeconomic concerns as central banks increased interest rates to combat inflation and fears grew of recession in major economies.

Volumes remained broadly consistent with the prior year, with concentrates up eight percent and refined metals down by six percent. During the year we were alert for opportunities to expand our business and started to explore investment in lithium, a key battery metal.



For some of our metals, inventories were and remain at record lows, while the power crisis in Europe has forced many smelters to curtail production, further tightening markets. Amid rising geopolitical tensions, there is also a sharper focus on security of supply, particularly around key energy transition metals such as copper, nickel and cobalt.

This was highlighted by the US Inflation Reduction Act, a USD369 billion flagship package to spur investment in green technologies. It was also evident in the EU's decision to increase its renewable energy production target to 45 percent by 2030 as the region seeks to wean itself off Russian fossil fuels. Ultimately, these policies and others are highly metals intensive. However, a lack of investment in new supply means large deficits could emerge in a number of the products we trade between now and the end of the decade.

Looking forward, we expect macro economic factors to continue to influence metals prices into 2023, albeit with the potential for greater supply disruptions as consumers become more selective about the origin and carbon footprint of the metal they consume.

www.trafigura.com/metals

Non-ferrous concentrates and refined metals

Copper

For the copper market, 2022 started brightly with prices pushing steadily higher in a tight stock environment. Copper went on to hit a record high, at above USD10,600 per metric tonne, amid fears that Russia's invasion of Ukraine could curtail supplies.

The concerns proved to be misplaced but sentiment remained positive, with copper viewed by many investors as a beneficiary of the accelerating decarbonisation agenda in the US and Europe.

However, as attention shifted to aggressive monetary tightening, China's property market and increasing COVID-19 cases in the country's major cities, prices plunged, falling briefly below USD7,000. A strong US dollar also weighed on copper, which continued to trade at a narrow range to the year-end although it has since rallied to around USD8,500 per metric tonne at financial year end.

For most of the year, copper demand remained robust. Investment in energy infrastructure in Europe continued. The same was true in China after a third year of summer power shortages. Combined with another year of spectacular growth in electric vehicle output, that provided enough demand to more than offset the loss of activity in the property sector.

On the supply side, we have seen a year of heightened disruptions, with many mines forced to lower production forecasts as a result of operational problems related to COVID-19 and local community issues.

These factors, combined with a drought in Chile, the world's largest copper producer, left the copper market running close to the disruption levels seen during the height of the pandemic in 2020. As we head into 2023, we expect to see a change in the traditional physical flows on the back of further self-sanctioning of Russian metal.

Despite this turbulence, the Copper team delivered a solid performance as we continued to reap the benefits of an integrated approach across refined copper and concentrates. Volumes were broadly stable and we continued to actively engage with our customers, helping them to determine the carbon footprint of the cargoes they are buying through cutting edge digital technology.

As financial conditions continue to tighten, we expect the market to further consolidate as clients recognise the value in dealing with counterparties that have the scale and financial strength to cope with increasingly volatile markets while delivering first-class customer service.

Even after several new projects come online in 2023, we expect to see increasingly large supply deficits and for a tight market to become the new normal for copper.

Alumina and Aluminium

The aluminium market experienced unprecedented volatility in 2022, reflected by extreme price movements on the London Metal Exchange. In the space of three months between December 2021 and the start of March 2022 – the benchmark aluminium price rose 60 percent to a record high above USD4,000 per tonne as a result of strong demand and concerns over disruptions to Russian supply.

However, prices quickly reversed course as a deteriorating macroeconomic outlook and rising inflationary pressures weighed on the market. While demand fears persist, Europe's energy crisis and the war in Ukraine have exposed serious fault lines in the supply chain both for aluminium and its key ingredient alumina.

These risks were particularly noticeable in Europe in 2022, with soaring gas prices increasing aluminium production costs to more than USD15,000 a tonne at certain points of the year. This is because of the large amounts of electricity needed to transform alumina into refined metal. We estimate that a third of European aluminium production is now curtailed, and that further closure risks remain.

In China, which is the world's biggest producer of aluminium, lower-than-expected rainfall in the south-west forced further capacity cuts. The war in Ukraine also caused production disruptions, with one of the largest alumina refineries in the world curtailed because of its proximity to the conflict.

Our Alumina and Aluminium team was able to successfully meet these challenges in 2022, drawing on our long-established position in the physical market to serve our customers and expand our trading book. As the largest independent global alumina and aluminium trader by volume, our focus going forward will be on helping our customers manage these volatile and unpredictable market conditions. For 2023, the outlook hinges how producers and consumers adapt to less stability and more complicated logistics.

▼ Trafigura Group's equity investment: Prony Resources cobalt-nickel mine in new Caledonia.

Nickel and Cobalt

The nickel market was challenging in 2022, caused by the technical squeeze on the London Metal Exchange in March, which saw prices hit USD100,000 per metric tonne. This further exaggerated the disconnect between prices in the physical and futures markets.

Fundamentally, the market remained well supplied during the year thanks in large part to increased production capacity in Indonesia and new facilities capable of converting nickel pig iron into battery grade metal. If plans for further expansions are realised, it could see Indonesia's share of global nickel supply rise to more than 50 percent next year.

On the demand side, there was healthy demand for battery grade nickel as global electric vehicle sales continued to grow rapidly, led by China but weaker for lower purity metal used by the stainless steel industry.

The outlook for the nickel market in 2023 is one of oversupply, driven by production growth in Indonesia and the ongoing weakness of the Chinese property sector, which is affecting stainless steel demand. Set against this, demand for battery-grade nickel is likely to remain robust although consumers are becoming more selective about the volumes they are prepared to buy, seeking assurance on sustainability, origin and carbon intensity.

Despite these volatile market conditions, the nickel team supplied record volumes to our customers, boosted by increased supply from Terrafame and Prony Resources. As a result, we are able to meet the needs of our growing customer base in both stainless steel and battery metals while also developing new products, such as lithium and other key battery metals, to meet the future needs of the market.

For cobalt, COVID-19 outbreaks and flooding in Durban, South Africa, created huge logistical challenges exporting material from the Democratic Republic of the Congo (DRC), in the first half of the financial year. This boosted prices that in turn incentivised higher output from small scale or individual mines, also in the DRC. This artisanal production doubled year-on-year to account for 20 percent of primary supply.

Despite a mild recovery in demand from the aerospace industry, sales of portable electronics dropped, while car manufacturers continued efforts to reduce cobalt in the batteries that power electric vehicles. Together, these factors lead to a significant market surplus that started to materialise by the end of our financial year in September and weighed on prices.

The highlight of the year was completing the largest pre-financing on record for a mine in the DRC. The USD600 million facility will allow our long-standing partner Shalina Resources to complete the Mutoshi mine in Kolwezi. This is expected to come online in 2023 and has the potential to provide a new source of supply of cobalt hydroxide for refiners around the world.

Overall, the demand profile for cobalt remains attractive due to the rising popularity of electric vehicles. However, as with nickel, the provenance of material is becoming increasingly important. While supply is sufficient to meet demand over the coming years, certain volumes may not be accepted by consumers. As a result, prices could diverge between responsibly sourced metal and metal that fails to meet industry standards.

Zinc and Lead

Throughout the 2022 financial year, the zinc market experienced periods of extreme tightness in the physical market and declines in London Metal Exchange stocks to historically low levels.

A key driver of these trends was surging gas and power prices. A number of zinc smelters in Western Europe were placed on care and maintenance, including Nyrstar's Budel plant in the Netherlands. These closures and rising freight costs drove up premiums outside China for refined zinc.

In China, rolling lockdowns hit demand and the market was weaker. In zinc concentrates, mine supply was stable year on year and treatment charges trended higher.

The lead market was more subdued in 2022. There was continued strong demand for the metal outside China but inside the country demand and production dynamics were greatly affected by reduced mobility from the COVID-19 lockdowns. The concentrates market has seen strong continued demand from Chinese smelters and mine supply remained stable. The refined and concentrates markets are both expected to be balanced this year with low stocks of both globally.

The Zinc and Lead team responded well to these market conditions, drawing on its global reach to meet the evolving needs of its client base. In terms of volumes, we maintained our market position over the year.

We expect similar conditions in 2023 financial year with European power prices, demand growth in China and recession fears the key factors that will influence zinc and lead markets. Against that backdrop, our strategy will be to remain agile and respond to the changing needs of our customers.

▼ Finished zinc blocks at Nyrstar' smelting facility Budel, the Netherlands.

Bulk minerals

Coal

Coal prices scaled new heights during the 2022 financial year as record gas prices and sanctions against Russia boosted demand. Thermal coal, which is burned in power stations to generate electricity, rose as high as over USD400 per metric tonne for some brands as buyers in Asia and Europe scrambled for material in a market where there has been an almost total absence of investment in new mines outside of China.

Metallurgical coal, used to produce steel, had a more turbulent year, with prices pulling back from record levels of USD660 per metric tonne in early 2022 as mills in Europe cut production in response to slowing demand.

Against this backdrop, our global Coal Trading team performed strongly with volumes steady year on year and robust financial results.

There was strong demand for the team's services throughout the year, both from customers looking to replace expensive gas with cheaper coal and from those seeking an alternative to sanctioned Russian output.

The Coal team was able to respond rapidly to these changing requirements drawing on its strong relationships with producers around the world. On the demand side, we saw increased volumes being delivered to Europe as utility companies restarted mothballed power stations in response to an unprecedented energy crisis in the region.

Over the next 12 months, we expect thermal coal prices to remain at elevated levels because of the lack of new supply and the ongoing energy gas crisis in Europe, while metallurgical coal will be more subdued as recession fears mount. We will continue to meet the fuel requirements of our customers globally, whilst providing support for their energy transition goals.

Iron ore

The iron ore market traded in a wide range in the 2022 financial year, between USD87 and USD163 per tonne as optimism about the outlook for the global economy and Chinese policy stimulus gave way to pessimism as central banks rapidly raised interest rates and China persisted with its zero-COVID-19 policy.

Prices briefly rose above USD160 per metric tonne in March based on anticipation of easing lock-down restrictions in China and the likelihood of even more stimulus to fight the slump of the property market. As these expectations fell short in July, the steel making commodity moved steadily lower and ended September at below USD100 per metric tonne – roughly where it had been a year earlier.

The 2022 financial year saw bleaker demand in Europe, where soaring energy prices have forced steel mills to curtail production, weighed on the market in the latter months of the financial year although it displayed less volatility than other commodities.

On the supply side, output from Australia and Brazil was weaker than expected amid logistics-related challenges, but not enough to impact prices, while China continued to buy iron ore at roughly the rate predicted by forecasters despite weakness in the property market, as infrastructure and manufacturing activities expanded.

For our Iron ore team, it was another year of expanding trading volumes. We saw increased shipments from Porto Sudeste, our Brazilian iron ore terminal, a trend that will continue next year with the commissioning of the Tico-Tico mine in the south-eastern state of Minas Gerais. We also increased other export volumes through deals with the industry's major producers.

Looking forward, we expect iron ore to remain in a tight range until there is more certainty around the outlook for the global economy.

Performance review

Power and Renewables

Trafigura continued to build its presence in the fast-evolving power and carbon markets and to invest in new clean energy technologies.

Julien Rolland
Head of Power and Renewables Trading

$70.9m

Underlying EBITDA
(2021: $80m)

$170.6m

Investments in renewable projects[1]

2.8GW

Renewable energy portfolio[2]
(2021: 1.7GW)

[1] Includes investments in Nala Renewables and clean energy projects and technologies, including hydrogen, to date.

[2] Nala Renewables (50% owned by Trafigura).

Performance overview

In 2022, we made further progress in building our power and carbon trading capabilities and activities, and continued to invest in renewable energy generation and technologies. In carbon trading, we rapidly established a leading position in the voluntary carbon market, investing in high quality, nature-based carbon removal projects.

Nala Renewables, our 50:50 joint venture with international fund management group IFM Investors, pressed ahead with a range of projects in solar power, onshore wind and battery storage and is on track to reach its target of building a portfolio of projects with a cumulative generation capacity of four gigawatts by the end of 2025. Our investments in clean energy ventures also continued apace.

Overall profitability for the division was down 11 percent compared to the same period in 2021, as we continued to grow our activities and investments, and managed some temporary operational issues in Asia Pacific.

At the end of the 2022 financial year, we announced plans to combine our gas, power and carbon trading activities into a new Gas and Power division. We also created a new business line focused on renewable energy and strategic investments to provide greater management focus and impetus to this growing and important area of our business.

The events of the past year have further highlighted the need to invest in renewable energy to provide security of energy supply and improve self-sufficiency, in addition to meeting urgent decarbonisation needs, in an increasingly complex world.

Looking forward, the key focus for 2023 is working toward a final investment decision for the one gigawatt hydrogen production plant we are planning to build in Denmark through H2 Energy. We see hydrogen and hydrogen-derived fuels playing a big role in the energy transition, particularly in mobility.

▲ Delta Blue Carbon, the world's largest mangrove restoration project, south-east Pakistan.

Power trading

2022 was one of the most extraordinary years in the energy markets in general and in power in particular, with geopolitical events changing trade flows and impacting supply and demand. These shifts have the potential to permanently change the structure of the power market.

European markets experienced extreme volatility with prices rising from EUR200 per megawatt hour (MWh) at the turn of the year to levels over EUR1,000 MWh by the summer of 2022. These movements placed significant strains on the liquidity and risk appetite of market participants. As a result, the ability to hedge physical price risk in the futures market became much more challenging.

The Power Trading team managed the turbulent conditions, growing our business in Europe and the US and entering into several new types of transitions, including agreements to purchase battery capacity.

Overall, trading volumes increased in FY2022, while profitability was slightly down on the previous year. However, the team has made a strong start to FY2023.

The decision to combine our Gas, Power and Carbon teams into a new division will allow for closer cooperation across the energy generation spectrum from fuel to power, including carbon permits and renewable certificates, and help facilitate business development.

Looking ahead, higher capital requirements and greater regulatory intervention may lead to structural changes in the power market and also the competitive landscape. In particular, long-term hedging of energy offtake agreements may become challenging for some market participants.

Our focus for the next 12 months will be to expand our physical footprint in the power market globally and continue to build our customer base.

Carbon trading

In our first full year of operation, the Carbon Trading team was active across global voluntary and regulatory markets and also invested in carbon removal projects as well as investment in technology to provide greater transparency of supply chain greenhouse gas (GHG) emissions.

Net zero pledges now cover over 80 percent of global emissions across both the public and the private sector. In the public sector, a growing number of countries have plans for regulated markets that will put a price on carbon emissions. At the same time, the private sector continues to increase its ambition and level of corporate disclosure with the voluntary market growing to USD2 billion.

Among this year's highlights was the first issuance of credits from Delta Blue Carbon, a mangroves restoration project in Pakistan. Covering 350,000 hectares of tidal wetlands on the South-east coast of Pakistan, it is the largest project of its kind in the world. We are an anchor buyer of the nature-based carbon removals credits generated by the project.

We also launched Agora, our emissions tracking joint venture with US technology company Palantir, during LME Week in October. Initially focused on providing greater transparency in the reporting and verification of mining and metals value chain GHG emissions, the scope of the platform will extend to energy, helping our customers calculate and manage their GHG emissions across oil, gas and power value chains.

Looking forward, a key focus for the Carbon Trading team will be the ongoing developments related to carbon in Article 6 of the Paris Agreement on climate change. This part of the accord allows countries to trade and facilitate capital into emission removal and emission reduction activities, underpinning a global carbon market for the first time. We are working closely with governments and the private sector to develop robust commercial trading frameworks for new decarbonisation and carbon removal projects.

Nala Renewables

Nala Renewables is a 50:50 joint venture between Trafigura Group and IFM Investors established in September 2020 with the aim of investing in onshore wind, solar and power storage projects.

Since its inception, Nala Renewables has been transformed from a concept to an early stage business with some of its first assets operational or in construction. Nala Renewables now owns and is developing renewable energy generation and storage assets in Belgium, Chile, France, Greece, Netherlands, Poland and the US. To date, the company has grown its renewable energy asset portfolio to 2.8GW and is well on track to meet its 4GW target by the end of 2025.

A key focus for the last twelve months has been to build and strengthen the team, acquire late stage assets and secure new development partnerships for greenfield development opportunities in several different countries.

In the last financial year, Nala Renewables has focused on building its presence in Chile where it initially acquired a portfolio of 110MWp of ready-to-build solar assets.

This acquisition set the foundation for Nala Renewables' regional cluster approach for expanding its pipeline. More recently, it has acquired a further 60MWp in Chile, and it plans to increase its presence in the country further over the coming year. Nala Renewables has set up a regional office in Santiago to oversee its activities in Latin America and provide local expertise as its portfolio begins construction and operation.

www.nalarenewables.com

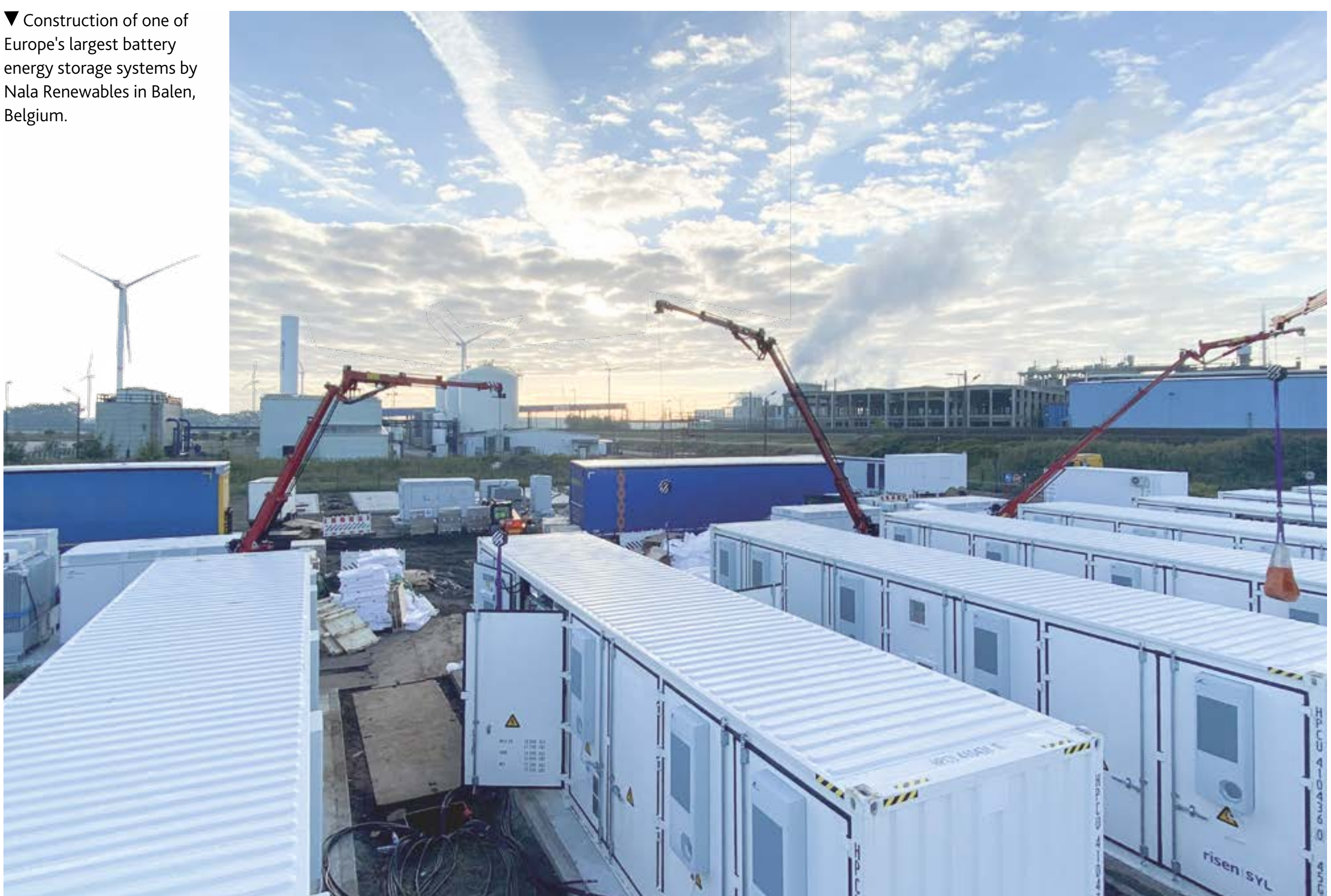
The company also expanded into the Greek market with the acquisition of a 106MWp ready-to-build portfolio of solar assets and entered into development agreements in Spain to build an early stage project pipeline.

In each of these countries, Nala Renewable's plan is to continue its expansion to complement its existing portfolios to create scale and a deeper presence.

Assets that have entered construction in the last financial year include a 198MWp wind project being developed by North American clean energy development and investment platform Swift Current Energy, which Nala Renewables acquired together with Buckeye Partners. This asset is targeting commercial operations in the first quarter of 2024.

The Balen Battery project, which involves investment of up to EUR30 million to develop one of Belgium's largest battery energy storage systems at Nyrstar's zinc smelting facility, is also in construction with commercial operations targeted to begin in the first quarter of 2023. Utilising lithium-ion battery technology, the 100MWh battery project will be able to store 25MW for over four hours. The battery energy storage system will provide stability and balancing services for the Belgium grid, as well as help shift renewable energy production into high-energy demand periods.

▼ Construction of one of Europe's largest battery energy storage systems by Nala Renewables in Balen, Belgium.



Investments in clean energy ventures

In 2019, Trafigura established an internal venture capital-style fund to invest in start-up companies and projects developing alternative and renewable energy technologies.

The focus for investment is three-fold: to gain access to experienced teams and intellectual property in early-stage companies working in sustainable energy; to support the conversion of their intellectual property into viable development projects; and ultimately to help develop new markets and business opportunities for Trafigura.

Investment decisions are guided by an investment committee comprising four members of Trafigura's Management Committee, thus ensuring all decisions are fully aligned with Group strategy.

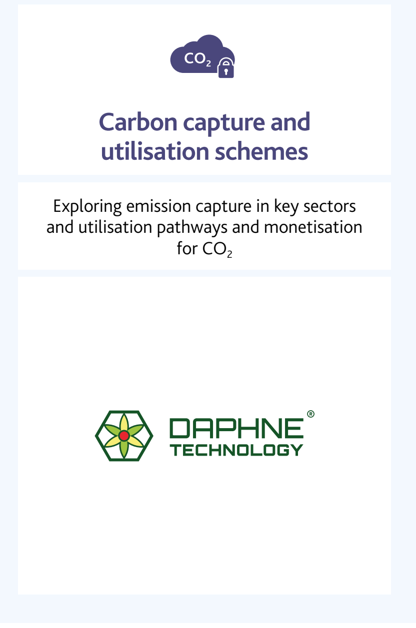
To date, we have close to USD60 million of investments in priority hard-to-abate or tough to decarbonise sectors, including hydrogen-based fuels for mobility, electricity storage and emissions capture and utilisation. These investments are already providing us with unique insights into sectors that will be extremely important to our future strategy as well as project opportunities in which we are also investing. Our investments allow us to generate valuable insights into markets that have yet to be formed. We envisage that hydrogen and hydrogen-based fuels will play a large role in the shift to a low-carbon economy and that carbon capture will be required by a number of industries for years to come.

Similarly to its core activities, Trafigura works with leaders and peers in these respective sectors, such as SK Gas, Shell, Chevron and Saudi Aramco, but also with newer market entrants, such as Breakthrough Energy Ventures sponsored by Bill Gates.

In 2022, we invested in two companies: C-Zero, a technology developer of low-carbon hydrogen production; and Malta Energy, a technology developer of thermal long-duration energy storage. Both of these investments represent new accomplishments for Trafigura in their respective spaces. C-Zero can leverage access to competitive natural gas to produce hydrogen without CO_2 – this will be especially well tailored to production projects in the US, the Middle East and even Asia where there are no CO_2 storage sites today. Malta Energy provides a way of storing very large volumes of electricity as heat in salt – similarly to how the sand on a beach stays warm after the sun has set. This type of technology will be essential to provide baseload-type renewable power, buffering the variability of wind and solar and eventually provide cheap, low-carbon electricity for the production of fuels and the decarbonisation of industry.

Going forward, the Clean Energy Ventures team will continue to support its current portfolio of investments and expand into the carbon capture and utilisation schemes (CCUS) space.

Areas of focus



Performance review

Shipping and Chartering

Trafigura Maritime Logistics provides shipping and freight services for our in-house oil and petroleum and metals and minerals commercial teams and for third-party clients.

Andrea Olivi
Head of Wet Freight Shipping

Alan Cumming
Head of Dry Freight Shipping

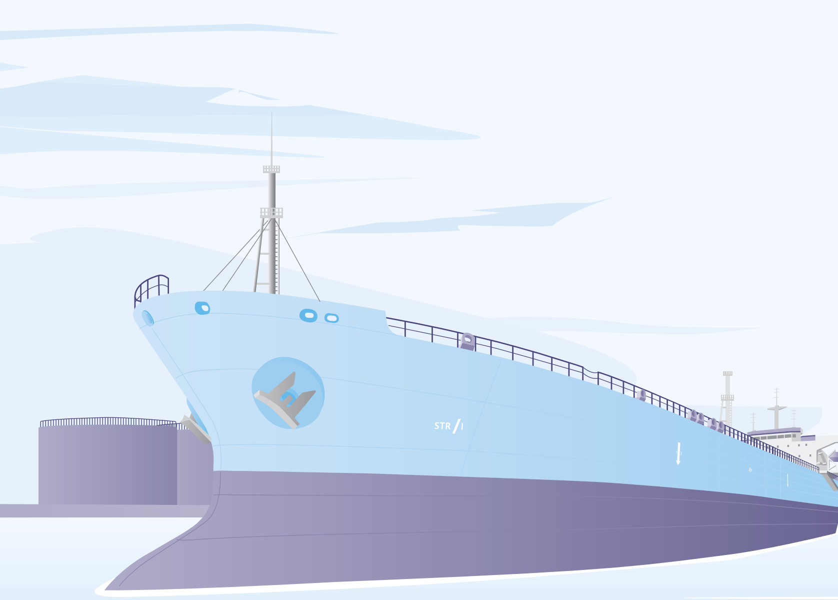
5,124

Shipping and Chartering voyages
(2021: 4,834)

2022 Wet and Dry Freight activity

	Wet	Dry
Number of voyages[1]	**3,780** (2021: 3,608)	**1,344** (2021: 1,226)
Average number of vessels under time-charter[2]	**210 - 230** (2021: 175-190)	**60-65** (2021: 50-55)

1. Approximately 65% of our wet cargo programme is on third-party owned ships.
2. A vessel on hire for more than three months (excludes LNG carriers).



Wet freight

During a challenging year, the global wet freight market regained momentum, with shipping in higher demand as the war in Ukraine rapidly reshaped traditional global trade flows. The Trafigura Wet Freight team was able to adapt quickly to the new landscape to enable Trafigura and third-party clients to continue to provide reliable supply of commodities to customers and delivered a robust performance in the year to 30 September.

As trade flows evolved and altered as a result of the sanctions imposed on Russia, we were well positioned to adapt thanks to our decision to charter more vessels when the market was weak in 2021. We were able to leverage this capacity for both internal and external customers globally as they reacted to significant disruptions.

The new additions to our fleet, with up to 230 vessels under our management, were on average just over seven years old. This modern fleet provided significant efficiency gains in terms of fuel consumption and greenhouse gas emissions per tonne/mile. This planning, in combination with our work with owners to manage efficient tonnage and to retrofit energy-saving devices, complemented our decarbonisation drive ahead of up-coming regulatory developments including the addition of shipping into the EU Emissions Trading System (EU ETS), and the introduction of new carbon-intensity targets from the International Maritime Organisation (IMO).

In a year in which we notably increased our shipping activity, we also concluded more than 14 sale-and-purchase and long-term leasing transactions. Going forward, our focus will be on further improving efficiencies within our current fleet.

For LNG carriers, volatility was the main theme of 2022, following the invasion of Ukraine. We expect rates in this market segment to remain elevated in 2023 as a result of strong demand in Europe for natural gas because of lower flows from Russia.

The LPG tanker market was more subdued than other segments as a result of weakness in China's petrochemical industry, but still offered plenty of opportunities. The next 12 months may see some challenges for owners of Very Large Gas Carriers as a heavy orderbook increases vessel supply, but healthy US export growth should remain a supportive factor for freight rates in 2023.

In the coming year, the oil tanker market will be supported by the longer distances that vessels will have to travel because of G7 sanctions on Russian oil, which take effect in December 2022 and February 2023. The possibility of a global recession and further geopolitical disruptions are the key downside risks we see. On a more positive note, there is real sense of discipline with regard to new-build orders, even though current markets are some of the strongest in recent memory.

Significant consolidation among owners and fragmentation among charterers are other key dynamics. All of this is translating into more volatility, which we are well positioned to capitalise on.

Trafigura's work to decarbonise shipping

Despite volatile market conditions, Trafigura has continued to decarbonise its operations, with significant investments in staff, software, data management and energy savings technology. We are targeting a 25 percent reduction in carbon intensity by 2030 against a 2019 IMO baseline across our owned, long- and short-term leased shipping operations.

We continue to advocate for a global carbon levy on marine fuels and have implemented several measures on our owned fleet to capture immediate efficiency gains. These include wake-equalising ducts, carbon measuring devices and modern silicone hull paints. Together, these measures have already resulted in a meaningful reduction in our emissions. We will also continue to leverage our size, scale and resources to collaborate with leading technology and engineering companies to help pave the way forward for the rest of the industry.

Trafigura is a founding member of the Sea Cargo Charter, an industry coalition established to collect, assess and report shipping emissions. In 2022, the Sea Cargo Charter published climate alignment scores for 25 charterers and operators including Trafigura and an update on progress toward the IMO goal of reducing shipping emissions by at least 50 percent by 2050. We are proud to have contributed to this report and wider efforts to increase the transparency and measurement of carbon emissions in shipping.

Finally, we are trialling several new fuels on our owned and chartered vessels, including methanol, LPG and biofuels, to increase our understanding of the viability of various low-carbon fuels. Other initiatives include the co-sponsoring of a two-stroke engine that can run on green ammonia, which is under development at MAN Energy Solutions, and investment in on-board carbon-capture technology developed by Swiss maritime technology start-up Daphne Technologies.

Read more about our efforts and initiatives to decarbonise shipping: www.trafigura.com/shipping

▶ Bulk carrier, the Woodgate, at the Port of Antwerp, bound for Nystar Port Pirie.

Dry freight

As in wet freight, turbulence characterised the year for dry freight, although the impact was uneven across vessel size classes.

The market for Capesize vessels, the largest class of bulk carriers, was remarkably dynamic, with average daily timecharter rates over the year ranging from a high of almost USD87,000 a day to as little as USD2,500 a day, making profitable positioning around such extreme market volatility a challenge.

This was caused, in part, by the war in Ukraine, with the country's iron ore producers forced to divert shipments to the national rail network following the closure of its Black Sea ports.

In contrast, exposed to less volatility, smaller-size vessel classes enjoyed a historically strong year, although we did see a marked swing in the relative strength of different markets and geographies.

One of the main features of the year was changing trade flows in coal, as utility companies in Europe were forced to look for alternative sources of supply before a ban on Russian imports came into force. One of the largest swings involved South African coal flow into Europe to replace Russian coal, at an annualised rate of 28 million tonnes compared to two million tonnes in 2021.

These changing dynamics helped the Dry Freight team deliver a strong performance. Voyages rose to 1,344 from 1,226 a year earlier, while volumes were little changed at 41.0 million tonnes versus 41.6 million tonnes in 2021. We were fortunate to avoid any major weather, strike, COVID-19 or force majeure-related events during the year.

Our Supramax book was a standout performer as the decision to expand the team paid off, giving the team a greater global presence. Mineral concentrates shipments from Mexico and Peru continued to form the backbone of our business.

Looking ahead, we expect a balanced market in 2023 and time-charter equivalents rates to be ahead of the 10-year average. The big wildcards for the market are the possibility of a global recession and the number of new-build container ships that hit the water, which could affect the flow of container traffic into bulk vessels.

The Dry Freight team will stay focused on delivering cost-effective and competitive freight for our customers, while anticipating the impact of and ensuring compliance with new environmental regulations, which will see shipping included in the European Union emission trading scheme.

Performance review

Assets and Investments

In 2022, closer cooperation brought benefits and synergies to our strategic assets and investments.

To complement our core activities, we seek investment opportunities in assets and entities that can help facilitate the supply, processing and movement of physical commodities around the world.

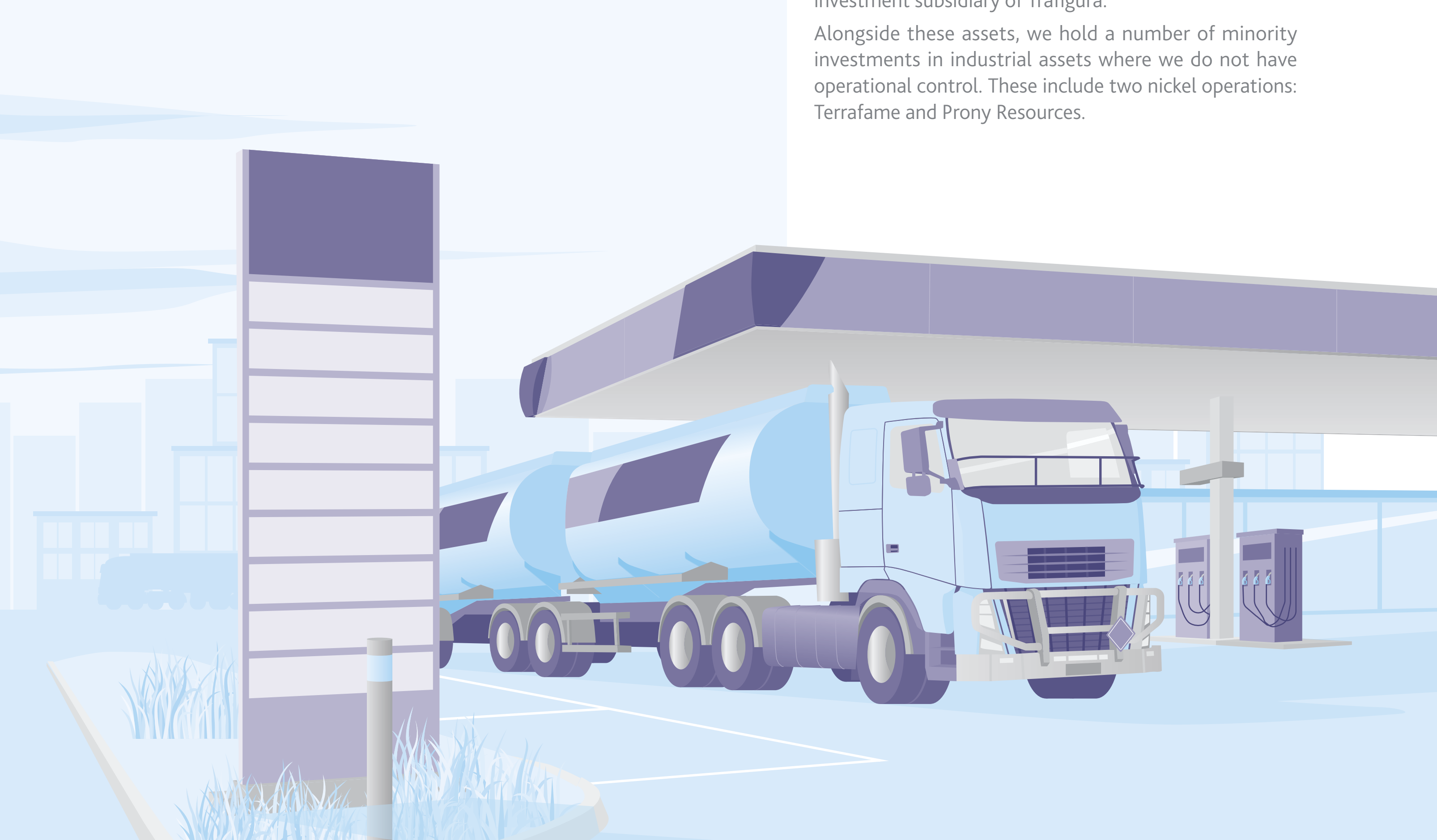
Our assets and investments include: Puma Energy, a downstream fuel supplier, and Impala Terminals, a commodity warehousing and logistics joint venture with IFM Investors.

A third industrial business was added in 2019 with the consolidation of Nyrstar, an international producer of critical metals and minerals essential for a low carbon future. These assets are structured as independent companies with their own dedicated management teams and resources.

In addition, Trafigura is the majority owner of TFG Marine, a bunkering services provider. We also have an investment in H2 Energy, a leader in green hydrogen for heavy duty transport, and a 50 percent share in the joint venture H2 Energy Europe.

Galena Asset Management is a wholly owned and regulated investment subsidiary of Trafigura.

Alongside these assets, we hold a number of minority investments in industrial assets where we do not have operational control. These include two nickel operations: Terrafame and Prony Resources.



Puma Energy

Puma Energy is a downstream energy company operating in 34 markets around the world, supplying and distributing refined oil products, such as fuels, lubricants and bitumen. It operates 1,900 retail sites, owns a number of bitumen terminals and offers refuelling services at over 100 airports.

In September 2021, Puma Energy was fully consolidated into the Trafigura Group. A new management team was appointed and tasked with developing a fresh strategy and strengthening the company's finances.

In FY2022, Puma Energy focused on turning around the business following the challenges of COVID-19 and the resulting economic downturn. It did this by bolstering its balance sheet, streamlining its portfolio of assets and reinvigorating its core downstream operations. It also started to diversify its activities by supplying lower-carbon fuels and offering solar energy solutions to customers.

This consolidation enabled Puma Energy to realise the full benefits of synergies with Trafigura including market expertise and supply chain optimisation.

During the year, Puma Energy updated its approach to environmental, social and governance risks, setting out a new strategy in its 2022 Sustainability Report. This was underpinned by a series of commitments reducing greenhouse gas emissions and supporting access to energy.

A key element of the strategy is to grow Puma Energy's portfolio of clean cooking fuels, such as liquefied petroleum gas for clean cooking, and introduce renewable power solutions, such as solar, to help industrial and commercial customers achieve their energy and climate change ambitions.

While the divestment of businesses in Angola and Pakistan reduced the overall size of Puma Energy's retail network, the company is now focused on markets with greater growth potential and on growing the profitability of our retail business by investing in new and upgraded sites.

In September 2022, Puma Energy took a major step forward in its strategy of focusing on its core downstream business when it completed the first phase of the sale of a significant part of its infrastructure business to the Impala Terminals joint venture between Trafigura and IFM Investors.

These initiatives are already starting to produce improved results, driven by a combination of stronger business performance, a reduction in operating costs and a recovery in demand. As part of the turnaround, Puma Energy incurred impairments during the year against the value of various assets within its portfolio.

Puma Energy also strengthened its balance sheet, with its ratio of net debt to earnings before interest, tax, depreciation and amortisation below 1.5 at the end of September. After the sale proceeds from the infrastructure sale were accounted for in October, the company had a gross debt net of cash of USD856 million, reduced from USD1,708 million on a pro-forma basis.

In 2022, Puma Energy secured a USD700 million revolving credit facility, the most it has raised in three years. This demonstrates the new confidence lenders have in the company.

Looking ahead to 2023, Puma Energy will focus on strengthening its position in key markets. The company remains cautiously optimistic as it continues to navigate the market volatility which characterised 2022.

Mining

Trafigura's Mining team manages a portfolio of assets and works closely with the company's metals and minerals trading business and its mergers and acquisitions team. Our operations include wholly owned subsidiaries and stakes in privately held entities.

The Mining team's key objectives for the year were to improve safety, consolidate management teams and stabilise production.

Regrettably, two fatalities were recorded at our operations during the financial year: one internal and one external. Safety improvement plans are in place at each site and we are determined to eliminate fatalities across our business.

For many of our assets, FY2022 proved to be a demanding year, with challenges including rising costs and volatile commodity prices.

Electricity and diesel prices increased as did the cost of processing reagents. In addition, the war in Ukraine led to a significant rise in the price of ammonium nitrate, the main component of explosives used at our mines.

At the same time, metals prices fell sharply in the second half of the financial year, dragged down by the strong US dollar, concerns about slowing global growth and weak demand in China.

Production volumes were satisfactory at Catalina Huanca, a zinc and lead mine in Peru, and at Castellanos, our zinc and lead joint venture in Cuba.

However, output fell short of expectations at Myra Falls, our zinc and lead mine in British Colombia, Canada, where a new management team has now started work.

At Kapulo, in the Democratic Republic of the Congo, production was affected following a geotechnical event.

The highlight of the year was in Brazil, where we started building a new processing plant at our MMI iron ore project. Once construction is complete next year, the new facility will produce a high-quality product that can be used to make pellet feed for steelmakers.

The primary focus for the Mining team in the year ahead will be completing construction works in Brazil. We are also considering reconfiguring our supply chain so that we can source raw materials close to our mines which would improve competitiveness and reduce our carbon footprint.

Nyrstar

Nyrstar is an international producer of critical metals and minerals essential for a low carbon future. With a market leading position in zinc and lead, Nyrstar has mining, smelting and other operations located in Europe, the US and Australia and employs close to 4,000 people.

Since the acquisition by Trafigura Group in 2019 and the subsequent completion of its financial restructuring, Nyrstar has been in turnaround mode. Significant investments to modernise and improve the company's assets and operations continued over the past 12 months despite tough market conditions.

During FY2022, Nyrstar's sites in Europe were impacted by a range of factors, including elevated energy prices. This resulted in periods of care and maintenance for some and/or reduced production at all of the sites. The operation level of these sites in the short to medium term will be dependent upon market conditions, which remain extremely challenging.

In mining, production volumes at Middle Tennessee, a US zinc mining complex owned by Nyrstar, were satisfactory. At the East Tennessee site these were lower than expected. Management teams at both mines have now been consolidated and we expect an improved performance over the next financial year.

In Australia, Nyrstar faced a further year of operational challenges, which had a significant impact on the company's overall performance. A USD177.1 million impairment charge was recognised against the value of its Australian assets. Shortly after the end of the financial year, the Port Pirie site in South Australia was closed for a planned major maintenance intended to improve the performance of the plant and reduce emissions.

In spite of these challenges, Nyrstar continued to improve the sustainability of its operations. Highlights from FY2022 included the commissioning of an innovative wind park at the Balen site and, in collaboration with Nala Renewables, the construction of the largest lithium-ion battery energy storage system in Belgium at the same location. At Budel in the Netherlands, Nyrstar has applied for permission to increase the capacity of its solar park to 96 megawatt peak (MWp) from 44 MWp.

In addition, Nyrstar became the first company in Australia to receive accreditation to recycle and export raw materials from alkaline batteries. Household batteries from across Australia can now be processed at Port Pirie and become commodities such as copper or zinc or go into green cement.

In the US, Nyrstar is studying the potential to build a state-of-the-art germanium and gallium recovery and processing facility at its primary zinc smelter in Clarksville, Tennessee. The company is engaging with federal and state government to secure support for the project, which would enable these critical minerals to be produced domestically in the US, boosting security of supply.

These activities underpin Nyrstar's role as a responsible and reliable producer of strategic and critical minerals and metals to further advance the energy transition.

Looking ahead to 2023, Nyrstar will seek to stabilise production across its operations. Challenges are however expected to remain significant, in particular in the form of ongoing very high energy prices and general cost inflationary impacts.

▼ Nyrstar smelter at Balen, Belgium.

▲ Impala Terminals' newly built container yard in Manzanillo, Mexico.

Impala Terminals

Impala Terminals is a 50:50 joint venture between Trafigura and Australian pension fund management group IFM Investors.

Impala Terminals has two pillars of activity: owner and operator of key infrastructure in 14 countries and asset manager of third party assets in 7 countries.

In the former, Impala Terminals designs, develops and operates key infrastructure and logistics assets across multiple modes of transport. This includes the safe, reliable handling of dry and liquid cargoes to and from inland sites of production and consumption, through deep sea ports. In total, the joint venture has 27 operations trading under the Impala Terminals brand across 14 countries.

In the latter, the joint venture also manages a number of Trafigura-owned port logistics, storage and transportation assets. In this way, it plays a key supporting role in Trafigura's activities and third-party trade flows in the Americas, Europe, the Middle East and Africa.

The highlight of the 2022 financial year was the acquisition of 19 energy infrastructure and storage assets in 10 countries from Puma Energy.

The deal gives Impala Terminals' business a new dimension, adding oil and petroleum products, and builds on the Group's existing growth and diversification strategy.

After the financial year ended, Impala Terminals strengthened its management to help manage the expanded business and oversee the integration process. Kevin Nichols, the former CEO of Shell Midstream Partners, joined as Executive Chairman, while Sjoerd Bazen, the former Head of Vopak in Singapore, was appointed Head of the new Energy Infrastructure division. Nicolas Konialidis will continue to run the Dry Bulk and Logistics division.

All Impala Terminals operations performed at or above expectations in FY2022. Volumes increased year-on-year as the existing operations of Impala Terminals continued to diversify their product and services offering. This now includes a new empty container yard in Mexico that provides its customers with a prime location to store, maintain and repair their containers close to the highly congested port of Manzanillo, saving time and transportation costs.

Impala Terminals non joint venture assets

In Colombia, Impala Terminals operates an inland port at Barrancabermeja and a barging operation from two ports on the Atlantic Ocean. The company handled a number of new commodities during the year at the Barrancabermeja port terminal, including non-ferrous concentrates helping to grow its container transportation business unit.

Impala Terminals is continuing to work with a broader customer base, providing greater flexibility to import and export different products to and from Colombia by barge instead of truck, generating an important reduction in CO_2 emissions.

In Bolivia and Chile, Impala Terminals delivered a robust performance with its assets handling increased volumes of copper, lead and zinc concentrates, benefiting from strong demand and increased mining production. In both locations the group looks to expand its offering and services.

At the Impala Terminals' Burnside facility, in the US state of Louisiana, the focus was also on diversification, including a deal to sell a portion of land at this site to a major gas and chemicals group, which is weighing up plans to build a plant producing low-carbon ammonia. This initiative shows how Burnside, which is better known for its handling of coal, can also play a role in the shift to cleaner fuels.

Impala Terminals' assets in the Democratic Republic of the Congo and Zambia had another good year, growing their services and cargo-handling volumes in particular for imports destined for the mines around the terminals. There was strong demand for imported chemicals, mining reagents and project cargoes for use in the Copperbelt. Impala Terminals' freight-forwarding business, which oversees the movement of goods on behalf of importers and exporters, grew meaningfully by increasing its third-party volumes. For the year ahead, the main focus will be on the integration of the energy infrastructure assets and a further diversification and expansion of products and services to help offset the impact of rising costs and broader inflationary pressures.

TFG Marine

Founded in 2020, TFG Marine is a bunker fuel supply and procurement joint venture between Trafigura and two of the world's largest shipowners, Frontline and Golden Ocean.

The partnership brings together three companies that are market leaders in their respective fields, each with complementary strengths.

The combined demand from Trafigura Marine Logistics, Frontline and Golden Ocean, which collectively boast a fleet of more than 700 owned and chartered vessels, has laid the foundation for TFG Marine to become a top-three supplier of bunker fuel in just two years. We are now operational in 35 key hubs along the world's major shipping routes.

Benefitting from Trafigura's financial backing and risk management expertise, TFG Marine was able to successfully navigate highly volatile market conditions in 2022 and meet the needs of its growing customer base as many of its rivals struggled in a market defined by unprecedented volatility. As a result, the joint venture recorded stronger-than-expected profit over the financial year to September.

Decarbonisation and digitisation will be two key areas of focus for the business going forward. TFG Marine will continue to promote the need for mass flow meters, a digital technology that accurately measures marine fuel deliveries, to shift the industry away from outdated operational practices and to bring greater transparency. To this end, over a third of our barges are already equipped with this technology, with more to be added over the next two years, against an industry average of just one percent.

We also see the ability to manage the supply chain through our alignment with Trafigura as a key competitive advantage for the joint venture given to provide greater certainty.

TFG Marine is also continuing to work on the development of a digital portal that can provide customers with information including quotes and certificates of quality. Combined with the data gathered by our mass flow meters, this has the potential to provide a live view of the entire bunkering process and further differentiate TFG Marine from its competitors.

As the shipping industry transitions from carbon intensive fuels to low-carbon alternatives such as green ammonia and methanol, TFG Marine plans to work with its shareholders and customers to ensure that they can reach their decarbonisation goals and access the fuels of the future.

Looking forward, we expect further turbulence in the year ahead as the bunker market is affected by geopolitical events and fears of recession.

▲ TFG Marine's chartered supply barge equipped with mass flow meter technology at the Port of Rotterdam, the Netherlands.

Galena Asset Management

Galena Asset Management is a wholly owned and regulated investment subsidiary of Trafigura. It manages internal capital in several funds that are also available to third-party investors. The investment strategies run by Galena Asset Management leverage Trafigura's insight into metals, mining, energy and renewables.

The highlight of 2022 was the launch of the Galena Structured Credit Resources Fund, which specialises in trade finance. It started deploying capital in March 2022 and has currently lent a total of USD50 million to three upstream oil players – two in Canada and one in West Africa.

The fund enables Trafigura and external investors to access an attractive investment strategy that provides stable returns and indirect exposure to commodity prices.

In the coming years, we expect strong growth in alternative capital sources that will allow the funding of efficient new projects that are needed in the energy and metals space.

The Galena Multistrategy Fund, which invests in liquid commodity-related strategies across a number of asset classes, made gains for a second consecutive year.

Overall, 2022 was a complex year, with extreme volatility in commodity prices and financial markets in general. Several strong contrasting themes influenced the markets we followed. Energy prices strengthened, while industrial metals ended the year on the back foot after a strong start.

On the private equity side of the business, nickel and cobalt producer Terrafame continued to make progress with its new battery chemicals plant, gradually ramping up production. Once at full capacity, the plant will be capable of producing 170,000 tonnes of low-carbon nickel sulphate a year, which is enough metal for around one million electric vehicles.

For the year ahead, the high level of volatility is expected to continue as microeconomic fundamentals such as the lack of investment in new production capacity and low inventories bump up against macroeconomic and geopolitical headwinds.

Minority investments

Guangxi Jinchuan

Guangxi Jinchuan is one of China's largest standalone copper smelters. Located in Fangchenggang, Guangxi province, on the country's southern coast, it has a capacity of 400,000 tonnes a year and utilises power-efficient and environmentally friendly 'double flash' technology.

Trafigura has held a 30 percent stake in the Guangxi Jinchuan smelter since 2015, with the remaining 70 percent stake and operational control held by Jinchuan Group, one of China's largest copper producers.

Linked to our equity stake is a multi-year commercial agreement that gives Trafigura the right to supply around 30 percent of Guangxi Jinchuan's copper concentrate and to purchase around 30 percent of its cathodes. In 2022, the smelter expects to achieve record production and profits.

Looking forward to 2023, the copper concentrates market is expected to be in surplus, which should boost treatment and refining margins and underpin the profitability of Guangxi Jinchuan. Additionally, production is expected to reach 500,000 tonnes.

H2 Energy

Founded in 2014, H2 Energy is a Zurich-based company that develops, engineers and invests in clean hydrogen eco-systems for heavy duty transportation. In December 2020, Trafigura announced that it would invest more than USD60 million in the company and form a joint venture, H2 Energy Europe.

H2 Energy was the first company worldwide to deliver hydrogen fuel cell trucks to commercial users through a pay-per-use business model. Working in partnership with Hyundai, Linde and electricity producer Alpiq, its trucks are being used by retailers and logistics companies across Switzerland.

The company continues to make good progress and is building on its solid market first-mover position. In November 2022, the first Hyundai XCIENT Fuel Cell truck received road approval in Germany.

H2 Energy Europe has established a joint venture with Phillips 66. Over the next five years, the joint venture will roll out a hydrogen filling station network under the JET brand with over 250 sites along major transport routes across Germany, Denmark and Austria.

It is also making good progress on its main project – a one gigawatt scale green hydrogen project in Denmark where we are working toward a final investment decision in 2023.

To enable green hydrogen to become one of the energy commodities of the future, it will require massive production capacities to drive down costs and ensure availability for end users.

Once fully commissioned in 2025, the site at the port of Esbjerg would convert wind power – generated off the west coast of Denmark – into as much as 100,000 tonnes a year of green hydrogen.

In addition to mobility, the green hydrogen produced at Esbjerg would also be used for the production of electro-fuels for use in ships, trains, ancillary and grid stabilisation services and other areas.

Prony Resources

In March 2021, Trafigura acquired a 19 percent interest in Goro Resources via its shareholding in Prony Resources New Caledonia. Goro Resources is a significant nickel mining operation on the Pacific island and Prony Resources New Caledonia is a joint venture that includes investors, Prony management, employees and local government and community organisations. Prony Resources has secured direct employment for more than 1,500 people and indirect employment for more than 2,000 contractors in New Caledonia.

Following the takeover, the facility was successfully restarted with a focus on producing mixed hydroxide precipitate (MHP), a chemical form of nickel and cobalt that can be used in the batteries that power electric vehicles (EVs).

Strong demand for this type of product, as a result of growing demand for EVs, has supported the decision to shift the facility from producing nickel for use in stainless steel production.

Priorities for 2023 include progressing the tailings dry-stacking project, known as Project Lucy, which is aimed at reducing waste storage risk and protecting the environment. Overall, work continues to build up the operation so that production can be increased to at least 36,000 tonnes of nickel a year in a safe and stable manner.

▼ Prony Resources' Usine du Sud nickel and cobalt mine, New Caledonia.

Sustainability review

Our sustainability review

www.trafigura.com/brochure/trafigura-code-of-business-conduct

www.trafigura.com/brochure/trafigura-corporate-responsibility-policy

www.trafigura.com/brochure/trafigura-hsec-business-principles

Overview

We play a vital role in enabling a responsible energy transition; helping to secure new sources of supply for critical minerals, working with counterparts to improve environmental and social standards, bringing greater carbon transparency to commodity supply chains and responsibly managing our own operations.

We have rigorous and effective governance structures and operate robust HSE and sustainability management systems, that provide multiple lines of oversight to ensure compliance and to address the environmental and social risks associated with our activities.

Our Business Code of Conduct, Corporate Responsibility Policy, HSEC Business Principles and management systems set the high standards required of our divisions, operating companies, assets and business relationships. They also outline the behaviours and actions required of every employee.

We engage in ongoing performance reviews across our operations and have obtained external assurance through independent assurance provider ERM CVS on our performance associated with:

- Scope 1, Scope 2 and Scope 3 greenhouse (GHG) emissions reporting conformance to the GHG Protocol;
- Alignment of our responsible sourcing programme with international guidance on sustainable procurement (ISO 20400:2017); and
- Progress towards compliance with the Voluntary Principles on Security and Human Rights (VPSHR) across our industrial assets.

We also continually assess our health and safety, environmental and community performance through internal audits and compliance with our policies and standards, to determine the effectiveness of the controls in place and undertake investigations to identify direct causes and contributing factors of incidents and near misses.

Performance review

FY2022 PERFORMANCE

Climate change and environmental management

- Reduced the GHG emissions associated with our own assets and operations. At the end of FY2022, we achieved a 30% reduction in Scope 1 and Scope 2 emissions against our FY2020 baseline. Our performance disclosure in CDP disclosure system was rated as "B" in FY2022.
- Helped our customers better understand the carbon intensity of their supply chains through the application of technology and improved data.
- Focused our efforts on providing access to low-carbon commodities and carbon trading. We have invested in high-quality nature-based carbon removal projects such as mangrove restoration.
- Invested in emerging low-carbon and carbon removal technologies through our internal Venture Capital fund, established to invest in early-stage disruptive renewable technologies including hydrogen power and alternative fuels, renewable energy storage technologies and carbon capture and utilisation.
- Assessed the risks and impacts associated with our operations using the Trafigura Environmental and Social Sensitivity Assessment ("TESSA"). This helps us prioritise those assets that present the greatest risk.

Workplace safety

- Achieved 19 percent reduction in the number of serious and fatal incidents over the prior year. We consider any work-related fatality to be unacceptable and we continue to work to eliminate serious incidents from our workplaces.
- Reinforced our safety culture through the 7 Deadly Signals awareness campaign, which highlights precursors to when a serious incident is more likely to happen. We have also applied a consistent risk management framework across our operations globally.
- Invested in in-vehicle monitoring systems across our fleet of trucks worldwide to enable the real-time monitoring of driver performance and behaviour, ultimately resulting in reduced road traffic accidents.

People and communities

- Improved our gender diversity though focused effort on hiring and promoting women and creating opportunities for women to develop skills and move into leadership positions. We also implemented digital platforms and launched new learning modules to develop the technical and interpersonal skills of our workforce.
- Donated over USD8 million through the Trafigura Foundation, of which USD2 million went to support the communities affected by the war in Ukraine.
- Collectively, Trafigura employees raised and donated over USD1 million for charitable causes in 2022 and volunteered at a range of initiatives to support communities associated with our offices and operations.

Governance

- Established a revised governance structure for ESG and HSEC, including a dedicated Board committee and steering groups led by senior management.
- Revised governance has enabled better sharing of good practices and alignment of the management of critical risks across the organisation.
- Established sustainability key performance indicators and targets, including GHG targets covering Scope 3 emissions and a decarbonisation pathway. And we commenced a comprehensive review of our ESG Policy Framework, which we will report on in 2023.
- Closed various financing agreements as Sustainability Linked Loans (SLLs): Trafigura now has a total value of more than USD9 billion of SLL financing in place, placed with over 100 financial institutions. Each SLL has ambitious sustainability performance targets set against key performance indicators that are aligned with our broader sustainability objectives, as outlined in the table on the next page.

Transparency and engagement

- Engaged with key stakeholders including financial institutions, customers, suppliers, governments, educational institutions, local communities, media and NGOs through multi-stakeholder forums, public events and industry associations to build trust and facilitate constructive dialogue.

Responsible sourcing

- Further strengthened our responsible sourcing programme through greater engagement with commercial teams across our metals and minerals business, downstream receivers and financing banks. We have improved the capacity of our suppliers through training and providing direct support on social and environmental performance improvement.

Progress on targets and key performance indicators (KPIs)

	CLIMATE CHANGE AND ENVIRONMENTAL MANAGEMENT			
Targets and KPIs	**30% reduction in Scope 1 and 2 GHG emissions (against FY2020 baseline) by FY2023*.**	**Reduce GHG emissions intensity from our owned (Scope 1) and chartered (Scope 3) shipping operations by 25% by 2030 compared to 2019 industry benchmarked levels.**	**Investment to develop a renewable energy asset portfolio, with three-year target aligned to our aim of generating 4GW by the end of 2025*.**	**Zero Level 4 and Level 5 environmental incidents (significant events such as a hydrocarbon spill over 50 barrels).**
Update	In FY2022, Scope 1 and Scope 2 emissions reduced by 30% compared to our 2020 baseline, in part due to the temporary shutdown of Nyrstar smelters in Europe due to external factors.	We are on track to achieve our GHG emissions intensity reduction target. Our climate alignment score under the Sea Cargo Charter placed Trafigura at 7.5 percentage points below the required CO_2e intensity reduction required to meet the IMO 2050 GHG reduction target.	Nala Renewables increased its renewable portfolio to 2.8GW in FY2022, up from 1.7GW in FY2021.	In FY2022, we reported six Level 4 and Level 5 spills in total, representing an increase on the prior year due to the inclusion of Puma Energy's performance within the Group.
Measures taken	• Purchased renewable energy certificates, reducing Scope 2 emissions. • Increased the amount of onsite renewable energy generation. • Implemented energy saving measures through our "Greenzone" internal awareness campaign and initiatives to improve the operational efficiency associated with our owned vessels.	• Adopted a series of technical measures to improve the efficiency of vessels we own. • Improved voyage efficiency through active vessel monitoring, improved routing and other operational measures.	• Portfolio expansion of renewable energy projects in Chile and Belgium. • Investment in four new battery energy storage system projects in the US.	• Improved risk assessment framework implemented across all divisions and operating companies. • Shared good practice on preventing spills.

* Indicates targets linked to sustainability-linked loans

WORKPLACE SAFETY	RESPONSIBLE SOURCING		HUMAN RIGHTS	PEOPLE
Zero fatalities and a 20% reduction in the LTIR compared to the prior year.	**Full alignment of our responsible sourcing programme for metals with applicable requirements of ISO 20400:2017 Sustainable Procurement guidelines by FY2023*.**	**Number of counterparts screened as part of the responsible sourcing due diligence process.**	**Align our operations with the Voluntary Principles on Security and Human Rights by the end of FY2024*.**	**Improve gender diversity at the recruitment phase through targeted outreach initiatives.**
Two fatalities reported in FY2022. The lost time incident rate (LTIR) decreased by 19% in FY2022, from 1.70 to 1.38, based on one million working hours.	At the end of FY2022, we had closed an additional 54% of remaining gaps (against a 40% yearly target) between our current practices and applicable elements of ISO 20400:2017 guidelines.	156 counterparts were screened in FY2022 (145 in FY2021) of which 89 were in conflict-affected and high-risk areas (CAHRAs).	Progress on track at the end of FY2022. Engaged external specialist to conduct a global review across all Impala Terminals' assets.	Women represent 18% of the global workforce, compared to 17% in FY2021. In FY2022, 31% of new recruits were female.
• Implemented safety culture awareness campaign: 7 Deadly Signals. • Changed our governance structure. • Enhanced health and safety training. • Introduced safety recognition programme. • Increased reporting of near-misses and sharing of lessons learnt.	• Introduced a robust governance structure to review and promote progress. • Provision of capacity building training sessions for traders and our suppliers. • Structured approach to communication and engagement with a particular focus on our suppliers in Africa and Latin America.	• Improved responsible sourcing screening process. • Enhanced performance monitoring and reporting systems.	• Identified and assessed 36 security contractors as part of review. • Defined action plan for select security contractors to align with the Voluntary Principles.	• Actively identifying areas where women are under-represented and creating specific pipelines. • Internal development focused on women. • Graduate programme targeting female recruits. • Diversity and inclusion training for all staff. • Gender-neutral job descriptions.

* Indicates targets linked to sustainability-linked loans

Corporate governance

Board of Directors and Committees

Trafigura is owned by its senior employees. This alignment of employee and shareholder interest promotes sustainable financial performance with management depth and stability.

Board of Directors

The principal oversight body for the Group is the Board of Directors, which has overall responsibility for the strategic direction and management of the Group, including commercial and financing strategy and stakeholder relations. Members of the Board of Directors are listed on the opposite page.

The directors with executive responsibilities are also members of the Management Committee and subsidiary committees as outlined below. Management of the Group is characterised by short reporting lines, flat structures, clear delineation and segregation of responsibilities, and personal accountability.

Employee remuneration is linked to Group performance and individual contribution. The Group's circa 1,100 senior employees, in their capacity as shareholders, have a personal commitment to its long-term success, promoting management depth and stability and encouraging prudent risk management.

Board Sub-Committees

In September 2021, a new sub-committee focused on environmental, social and governance (ESG) risks and strategy was established to sit within the Board of Directors and the Management Committee, alongside the existing Audit, Compliance and the Nomination and Remuneration Committees.

The **ESG Committee** is chaired by the Group's Executive Chairman and Chief Executive Officer, along with one executive director and two non-executive directors. The new committee enables further Board-level engagement and input into the Group's material ESG risks and strategy.

The **Audit Committee** is responsible for ensuring that the company appropriately maps its controls framework and robustly tests those controls annually in support of the Board of Directors overseeing the financial reporting process.

The **Nomination and Remuneration Committee** assists and advises the Board of Directors on matters relating to the appointment and remuneration of the Executive Directors, the Management Committee and other senior employees of the Trafigura Group.

The **Compliance Committee** is responsible for ensuring that the company identifies and robustly implements all processes and controls necessary to implement compliance with all applicable laws and regulation as well as our Code of Business Conduct and supporting compliance policies.

Read our leadership biographies: www.trafigura.com/about-us/leadership

Management Committee

The eight-member Management Committee sits below the Board of Directors and includes Trafigura's three executive directors. The Management Committee is responsible for the execution of Trafigura's business strategy, including management of the day-to-day trading, commercial and operational functions and its investment portfolio.

Corporate Committees

The Management Committee is supported by the four following corporate committees, illustrated on the opposite page:

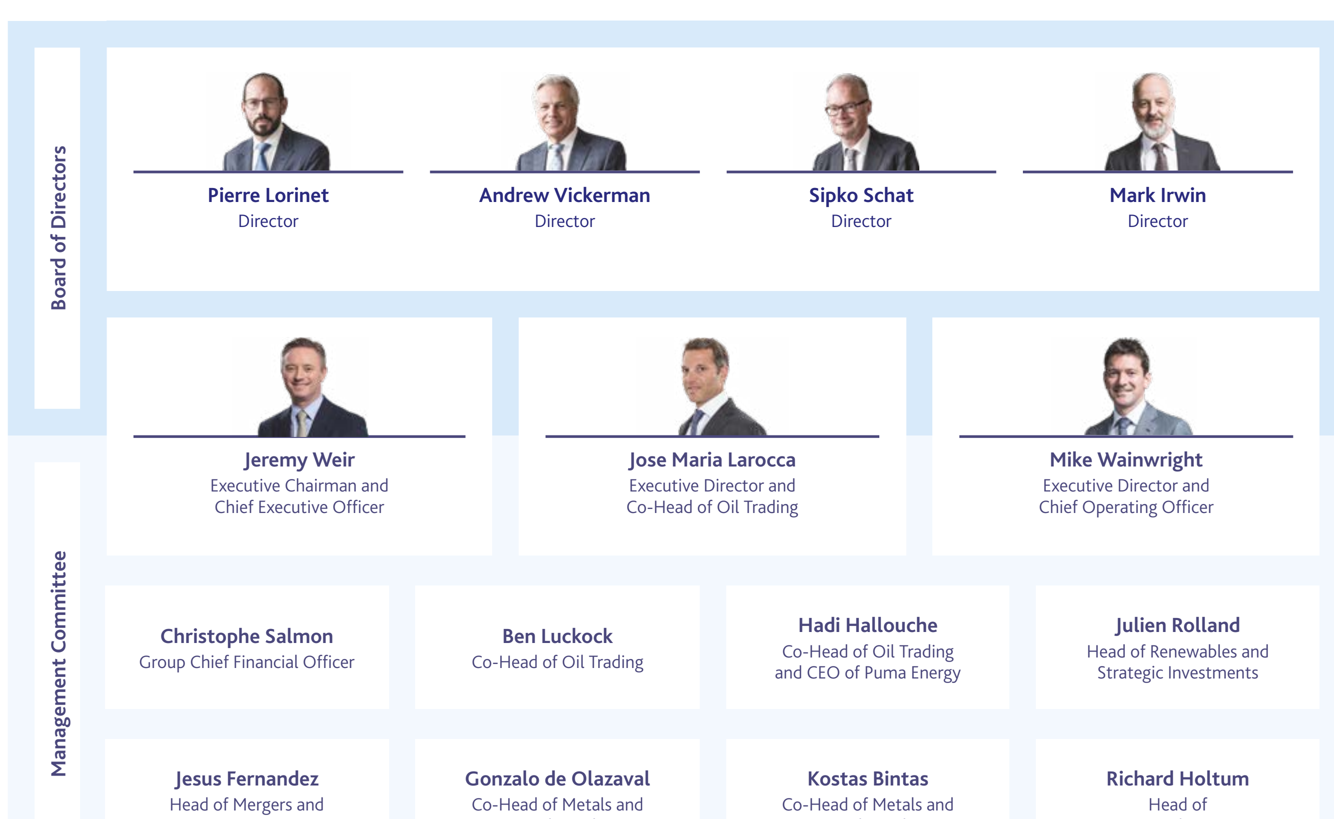
- **Market Risk Management Committee**
- **Finance Committee**
- **Operational HSEC Steering Committee**
- **Commercial ESG Steering Committee**

As part of our governance restructure, the Group's HSEC Steering Committee and Climate Change Group were dissolved and reformed into the Operational HSEC Steering Committee and the Commercial ESG Steering Committee.

These new steering committees, which separate operational health, safety, environment and community (HSEC) and commercial ESG issues, enable discussions to be more targeted, efficient and directly relevant to members and attendees. Each of the new steering committees are led by a member of the Management Committee to ensure that senior management is kept informed about and can engage with key HSEC and ESG issues relating to the Trafigura Group.

Corporate governance overview

Leadership

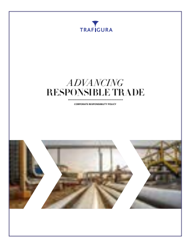


Risk management

How Trafigura manages risk

A rigorous and conservative approach to risk management is an integral element and central focus of our business.

www.trafigura.com/brochure/trafigura-code-of-business-conduct



www.trafigura.com/brochure/trafigura-corporate-responsibility-policy

www.trafigura.com/brochure/trafigura-hsec-business-principles

Trafigura has developed rigorous risk management and governance systems to address the full range of risks to which it is exposed. These systems apply multiple lines of oversight to ensure compliance with all applicable laws and regulations, and a high standard of ethical behaviour by all employees at all times. The Group actively manages and mitigates, wherever possible, identifiable and foreseeable risks inherent to its activity.

The Board of Directors has principal oversight responsibility, sets the risk management framework, determines the overall risk appetite of the business and ensures that the appropriate structures and processes are in place to manage each category of risk in an appropriate manner. The Management Committee is responsible for the day-to-day management of the Group's operations and investment portfolio, and provides direct oversight of the Board's risk management strategy.

Further lines of oversight consist of the Risk Management, Finance, ESG, HSEC and Compliance committees. The Committees are supported by the Internal Controls Department, which assists management across the Group to continually assess risks and controls for governance, trading, IT and operational processes. Results of these activities are reported to the Audit Committee, accompanied by action plans to strengthen controls and further mitigate risks where required.

Crucially, the company's Risk Governance relies on a robust organisational setup with an independent Risk Management function, the existence of clearly communicated and well-defined rules and limits, and a culture of continuous exposure monitoring.

Risk governance overview

Board and Management Committee

Chief Risk Officer and Risk Management Committee	Finance Committee	Commercial ESG Steering Committee and Operational HSEC Steering Committee	Compliance Committee

Policy & Oversight

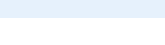
The Risk Management Committee and the Chief Risk Officer are responsible for the application of the Group's risk management capabilities and policy. They meet at least once a week to manage exposures and assess market dynamics.

The Finance Committee is in charge of assessing financial risks, overseeing the development of new sources of liquidity and the monitoring and setting of limits.

The Commercial ESG Steering Committee and the Operational HSEC Steering Committee promote best practice and oversee the management of all related risks.

The Compliance Committee oversees the implementation and development of the Group's compliance programme.

Audit Committee and Internal Controls Department



Organisational setup

Short and direct channels of communication and control.

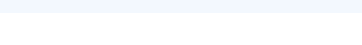
The CRO and Risk Management Committee are fully independent from the trading teams.

Risk exposure monitoring and hedging execution are done by the independent deals desk.

Risk management and trading teams are automatically notified whenever a book nears its risk limits.

The Finance team is involved from the earliest stages in the process and can veto any transaction.

The Compliance department operates in partnership with the front office to ensure controls are relevant and effective.



Rule-based procedures and limits

The Group follows a comprehensive internal limit framework (e.g. market, credit, etc.). Market risk limits are applied at multiple levels within the organisation: on individual, commodity, desk and Group levels.

Focus on aggregate risk, term structure, intra commodity spreads and risk concentrations.

Systematic flat price exposure hedging.

Our Code of Business Conduct, Corporate Responsibility Policy and HSEC Business Principles set out the high standards of responsible and ethical behaviour required of every employee, individually and collectively.

The Compliance training programme ensures employee awareness of key internal and external requirements.

Risk Management System

KEY RISKS	MITIGATION AND ACTIONS	
Markets and prices Volatility in commodity prices, spreads, interest and exchange rates. Fluctuations in the supply of or demand for commodities that we trade.	• Our policy is to hedge all index price exposure related to physical transactions on a deal-by-deal basis. • All stock is at all times either pre-sold or the index price is hedged. • Despite such hedging, Trafigura remains exposed to basis risk, i.e., the risk of changes in the difference between the price of the commodity being hedged and the hedging instrument. The Group carefully monitors its hedging positions on a daily basis to avoid excessive basis risk resulting from these imperfect correlations (including the use of VaR metrics). • The majority of sales and purchases are denominated in US dollars. Exposure to other currencies is hedged as appropriate and financing raised in currencies other than US dollars is generally swapped into US dollars.	• Our policy is to borrow short-term working capital at floating rates, with any rate changes passed through to our customers, and to fix rates for medium- and long-term financing via the swaps market. • Freight costs and bunker costs are hedged by our Shipping and Chartering Team via forward-freight agreements and bunker fuel swaps. • The diversification of our business, trading a wide range of commodities with varying and uncorrelated market dynamics across a large number of countries and geographical regions, is an important factor in reducing the Group's overall exposure to any individual market, price, geopolitical or other risk.
Finance, liquidity and credit	• Trafigura relies on a deep pool of financing from banks and investors to support its business. This infrastructure has three pillars: (i) Transactional facilities (ii) Securitisation (iii) Corporate credit facilities • For longer-term capital needs, we raise funds on public bond markets or through private placements with institutional investors. We follow a strict policy of matching the maturity of our assets and liabilities.	• We take a conservative approach to managing our funding liquidity, with more than one-third of committed facilities unutilised at all times under normal market conditions, and immediately available cash of at least USD2 billion always on hand. • Our transactional financing base allows the underlying assets to be entirely marked-to-market, matching liquidity needs for any related margin calls.
Compliance, internal controls and sanctions	• Our Compliance department oversees Group activities in partnership with front office functions to ensure that we operate appropriately and that our controls are relevant and robust. It focuses on promoting a sound compliance culture across the organisation in which everyone recognises their personal responsibility for meeting our compliance objectives. The team adopts a risk-based approach, allocating energy and resources to the issues that matter most to our core business and our stakeholders. The company is fully aware of reputation risk for its business and takes a proactive approach to mitigate it.	• The Department’s activities include counterparty due diligence (KYC); anti-money-laundering; sanctions and trade restrictions; anti-bribery and corruption; and financial market conduct. • The Group ensures that obligations with regard to international sanctions are respected across all our business activities and that we fulfil the undertakings on sanctions included in our credit facilities. This is a key focus for the trading teams, which receive support from the Compliance, Legal and Finance departments.
Legal, taxation and regulation Changes in taxation arrangements in various territories. Collateral effects of changes in financial regulatory frameworks.	• Trafigura is focused on managing legal, taxation and regulatory risks across the multiple jurisdictions in which it operates. The Group adheres to all applicable local and international tax laws, including legislation on transfer pricing. • We continue to follow the ongoing discussions surrounding the Organisation for Economic Co-operation and Development (OECD), Base Erosion and Profit Shifting (BEPS) Pillar One and Pillar Two blueprints. Once a concrete and final direction is determined, we will respond accordingly.	• We are also closely following the discussions about potential new forms of regulation that may be imposed on physical commodities trading firms. We have made representations to the appropriate authorities about the risks and unnecessary costs of introducing position limits in commodity derivatives markets and of imposing regulatory capital requirements on commodity trading firms. • Moreover, Trafigura routinely engages in discussions with regulatory bodies around sector market developments and financial stability, emphasising our credibility in the industry. We are always open to sharing our knowledge of and expertise in the commodity markets.

KEY RISKS	MITIGATION AND ACTIONS	
Counterparty, country and credit	• Trafigura uses internal credit limits established by the Credit department to reduce counterparty and credit risk. The Group prides itself on having had an extremely low incidence of credit losses throughout its history. • Trafigura reduces political risk in relation to certain countries below a certain risk rating by purchasing political risk insurance.	• Credit limits reflect our limited appetite for credit risk and are based on a credit analysis of the client as well as the size of the relevant transaction when compared to our balance sheet. • We pay particular attention to screening our portfolio of prepayment agreements with producers for credit risk. • Trafigura manages certain credit exposure through coverage in the insurance or bank markets.
Operational and Environmental, Social and Corporate Governance (ESG)	• The Board ESG Committee sets and oversees the strategic direction of the Group's sustainability strategy and its corporate policies and guidelines. • Our Corporate Responsibility Policy and Business Principles articulate the leadership team's priorities and commitments for ESG. At the operational level, they outline what is expected from everyone in the Group, its divisions and operating companies. • Board Directors with executive responsibilities are also members of the Management Committee and a number of subsidiary Corporate Committees, above, all of whom provide oversight and enforcement of our Group policies, guidelines and standards.	• The Board ESG Committee receives regular updates from managers across the business to discuss HSEC performance and future targets, and their approach to managing ESG risks and opportunities. The Committee receives the minutes of the Operational HSEC and Commercial ESG Steering Committee meetings and internal HSEC management reports. The Board Committee and Operational HSEC and Commercial ESG Steering Committees also receive presentations from internal and external subject matter experts to stay abreast of emerging ESG expectations, policies and leading practice.
Digital infrastructure/ cyber-security	• Trafigura has invested significantly in state-of-the-art scalable and resilient systems residing on highly available and disaster recovery resilient infrastructure. Our applications are designed for front-to-back processing, with integrated controls and reporting. • The commodities industry is a focus for sophisticated cyber threat actors ranging from nation states to high-tech criminal gangs. Motivations range from fraud to data theft. The impact of a breach in our corporate or industrial digital infrastructure has the potential to seriously disrupt our operations.	• To counter any cyber threat, we actively manage the risk by deploying and continuously upgrading state-of-the-art cyber defences. We employ multiple layers of advanced threat detection mechanisms, together with active automated countermeasures. We run regular exercises in partnership with the most sophisticated industry specialists to test our detection and response capability to cyber-attacks. • Management has paid particular attention to promoting a culture of security awareness. Cyber-security is a mandatory and on-going component of staff training, underpinned by a comprehensive set of defined Technology and Security Policies.

Funding model

Financing to meet diverse business needs

Our funding strategy matches sources of funding to financing requirements. We have developed diverse financing strategies that maximise scalability, flexibility and business resilience.

Our three-pillar funding structure

Transactional facilities

All transaction-based lending is fully collateralised. We fund day-to-day trading mostly through one-to-one (i.e. bilateral) agreements with individual banks and borrowing bases with syndicates of banks. Most transactions start with a bank issuing a letter of credit on behalf of Trafigura in favour of a commodity supplier to secure due payment. The bank takes security over the physical commodity being purchased. When payment is due, Trafigura draws on a transactional loan to pay the supplier, such loan being secured against the commodity. The loan is frequently marked-to-market until maturity so that the amount being financed always corresponds to the value of the underlying commodity. Once the commodity is sold to the end-buyer, a receivable is created and assigned to the bank until the cash settlement is used to repay the secured loan. Alternatively, the loan can be repaid earlier if the receivable is sold to one of the trade receivables securitisation programmes sponsored by Trafigura.

Securitisation programmes

Trafigura manages two trade receivables securitisation programmes through separately capitalised special purpose vehicles: TSF and Argonaut. The programmes further diversify Trafigura's funding sources and, thanks to TSF's investment-grade ratings from Moody's and S&P, are cost-effective financing mechanisms. Most trades are financed on a trade-by-trade basis with transactional secured loans, but Trafigura can fund an eligible receivable once an invoice has been issued by selling it to a programme. Securitising our receivables accelerates the rotation of existing credit lines, since transactional secured loans can be repaid faster with the programmes' proceeds. Trafigura also operates an inventory securitisation programme (TCF/TGCF) which enables the company to sell and repurchase eligible inventories, together with related hedging instruments.

Corporate credit facilities

Trafigura invests in fixed assets to support its trading activity. We finance these with long-term debt adhering to our policy of matching assets with liabilities. We issue debt securities and negotiate lending facilities in diverse markets. Funding sources include bonds, perpetual bonds, revolving credit facilities, private placements and term loans. These credit facilities are also used to manage daily funding requirements in relation to our hedging instruments, such as initial margin deposits and margin calls with hedge brokers.

Continued access to capital

Trafigura's activities require substantial amounts of capital.

We source, store, blend and deliver commodities around the globe.

We invest in terminals, logistics and physical infrastructure to improve the efficiency of our trading operations.

Our diversified funding model allows us to continue to operate effectively and successfully in all market conditions. Its scalability and structure protects the business from market shocks and provides flexibility and the ability to capitalise on opportunities as they arise.

We have put in place a global programme of flexible, short-term facilities to finance our day-to-day operations and a programme of longer-term, corporate facilities to finance our asset acquisition and other corporate requirements.

Available funding exceeds our everyday requirements. This provides headroom for unusual market conditions. We also maintain substantial cash balances to ensure that we will always meet day-to-day capital commitments, even in unexpected circumstances.

Our approach to funding

Diversification improves competitiveness and access to capital

We diversify both the sources and the structure of our financing to minimise risk and maximise operational effectiveness.

We raise funds in a variety of markets in the US, Europe and Asia-Pacific. We have lending arrangements in place with around 140 banks around the world. We are therefore not constrained by credit restrictions for specific financial institutions, sectors or regions.

We raise capital with a range of repayment schedules, from very short-term facilities to maturities greater than 10 years. This spreads our exposure across the yield curve.

We ensure that all funding arrangements are in compliance with applicable sanctions.

Match-funded, collateralised lending reduces credit risk

As a matter of policy, we match the type of financing to the business requirement. We have established a three-pillar funding structure to put this into practice.

We use short-term financing for trading. These loans are secured against the underlying physical commodities. Lines are frequently marked-to-market so the level of financing tracks the value of the underlying collateral as prices change. We raise longer-term debt to finance fixed assets and investments.

Transparency promotes stability

As a private company relying on debt to finance its operations, Trafigura's performance is closely scrutinised by a large group of banks and investors worldwide. We comply with the financial covenants attached to our syndicated bank facilities. Members of the finance team regularly meet with our lenders' representatives. These meetings often include operationally focused personnel (from Credit, Compliance and our commercial teams) who provide additional insight into our business model. As an issuer of publicly listed debt, we also meet the transparency requirements of our bond investors. Our interim and full-year reports are published online. We hold regular calls and presentations to update investors and to respond to specific queries directly.

Public credit ratings

Trafigura does not hold a public rating and does not seek to obtain one. The Group focuses on strengthening its balance sheet through long-term value creation.

We obtain our funding from stakeholders who understand our business model in detail and whose investment decisions are not driven by external ratings. We have significantly expanded our sources of financing over the years by maintaining a sustainable credit standing that is consistent with an investment-grade profile.

Likewise, the absence of a rating means that Trafigura's business and investment decisions are not taken on the basis of maintaining a particular rating level, something which becomes particularly important at times of high market volatility.

Consolidated financial statements

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Report of the auditor
to the Shareholders and the Board of Directors of Trafigura Group Pte. Ltd.
Singapore

Report on the audit of the consolidated financial statements

Opinion

We have audited the consolidated financial statements of Trafigura Group Pte. Ltd. and its subsidiaries (collectively, the "Group"), which comprise the consolidated statement of income and the consolidated statement of other comprehensive income for the year ended 30 September 2022, the consolidated statement of financial position as at 30 September 2022, the consolidated statement of changes in equity and the consolidated statement of cash flows for the year then ended and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements give a true and fair view of the consolidated financial position of the Group as at 30 September 2022 and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

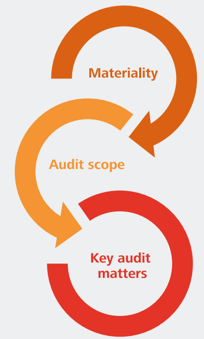
Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those provisions and standards are further described in the "Auditor's responsibilities for the audit of the consolidated financial statements" section of our report.

We are independent of the Group in accordance with the provisions of the International Code of Ethics for Professional Accountants (including International Independence Standards) of the International Ethics Standards Board for Accountants (IESBA Code), and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our audit approach

Overview



Overall Group materiality: USD200'000'000

We performed full scope audit work at 6 components, audited specific balances at 25 components and performed specified procedures at 2 components. Our audit scope addressed approximately 68% of the Group's revenue and 87% of the Group's total assets.

As key audit matters the following areas of focus have been identified:

- Impairment considerations for Puma Energy Holdings Pte. Ltd. (Puma Energy)
- Valuation of LNG off-take agreements

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Materiality

The scope of our audit was influenced by our application of materiality. Our audit opinion aims to provide reasonable assurance that the consolidated financial statements are free from material misstatement. Misstatements may arise due to fraud or error. They are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the consolidated financial statements.

Based on our professional judgement, we determined certain quantitative thresholds for materiality, including the overall Group materiality for the consolidated financial statements as a whole as set out in the table below. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures and to evaluate the effect of misstatements, both individually and in aggregate, on the consolidated financial statements as a whole.

Overall Group materiality	USD200'000'000
How we determined it	Three-year average profit before tax
Rationale for the materiality benchmark applied	In our view, the materiality benchmark applied above is the measure against which the performance of the Group is most commonly assessed and is a generally accepted benchmark. We used a three-year average to allow for the volatility in earnings normally encountered in the commodity trading markets.

We agreed with the Audit Committee that we would report to them misstatements above USD10'000'000 identified during our audit as well as any misstatements below that amount which, in our view, warranted reporting for qualitative reasons.

Audit scope

We tailored the scope of our audit in order to perform sufficient work to enable us to provide an opinion on the consolidated financial statements as a whole, taking into account the structure of the Group, the accounting processes and controls, and the industry in which the Group operates.

The Group financial statements are a consolidation of over 500 legal entities. These are accounted for in over 900 financial ledgers, which we have defined as “components” for audit scoping purposes, other than for Puma Energy Holdings Pte. Ltd. and Nyrstar Netherlands (Holdings) B.V. sub-consolidations which are treated as a single component each for the purpose of the audit of specific account balances.

We identified 6 components that, in our view, required an audit of their financial information due to their size or risk characteristics. For these 6 components, the audit work was performed either centrally by the Group audit team in Switzerland or by another PwC network firm at one of the Group’s global service centres located in Mumbai, India or Montevideo, Uruguay under the direct guidance of the Group audit team. Additionally, we identified 27 components that, in our view, required either an audit of specific balances or specified procedures to be performed due to the significant or higher risk areas and to achieve appropriate coverage over material amounts. Of these 27 components, there were 4 components where the work was not performed directly by ourselves or through our direct supervision at the Group’s global services centres, including 1 component where the work was performed by a non-PwC network audit firm. In addition, we instructed the same non-PwC network audit firm to report to us on the results of specified procedures performed with respect to impairment testing relating to Puma Energy. As a result, our audit scope addressed approximately 68% of the Group's revenue and 87% of the Group's total assets.

For these 4 components as well as for the specific procedures performed with respect to impairment testing relating to Puma Energy, we specified instructions to the component auditors and reviewed the results of their work with them for our audit. We determined the level of our involvement in the audit work performed by the component auditors to be able to conclude whether sufficient appropriate audit evidence had been obtained as a basis for our opinion on the consolidated financial statements as a whole.

We verified that the audit teams both at Group and at the component levels included the appropriate skills and competencies necessary for the audit of the Group’s consolidated financial statements, including specialists in the areas of information technology, valuation and taxes. The Group audit team was in regular communication during the year with the local teams to discuss the audit approach, progress of the audit and observations or findings, if any. To facilitate our direct review, local PwC teams in India and Uruguay documented their audit work directly in the Group audit team’s files. The Group audit team also performed audit procedures over Group functions and the risk of fraud and non-compliance with laws and regulations.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Impairment considerations for Puma Energy Holdings Pte. Ltd. (Puma Energy)

Refer to Note 14.1

Key audit matter	How our audit addressed the key audit matter
The acquisition of Puma Energy during 2021 resulted in the recognition of a goodwill balance of USD1,074.1 million. This goodwill was allocated to 13 out of 25 separate Cash Generating Units (CGUs) which represent individual countries and/or businesses. Annual impairment test of this goodwill resulted in the Group recognizing a USD87.8 million impairment loss in the consolidated statement of income. In addition, as a result of the same impairment assessment, the Group recognized in the consolidated statement of income an impairment of USD100.8 million relating to Property, plant and equipment of Puma Energy. The significance of the estimates and judgments used in making these impairment assessments is considered a key audit matter.	We obtained the valuation models and met with management to gain an overview of the market, operational factors and key assumptions included within the individual impairment assessments. We issued instructions to the non-PwC network audit firm to report to us on the forecasted cash flows used in the impairment valuation models. We performed a detailed review of the work performed by the non-PwC network audit firm. With the assistance of valuation specialists, where applicable, the following procedures were performed: • Checked the appropriateness of the inputs and significant assumptions. • Re-performed certain valuation calculations, benchmarked the valuation model with generally accepted valuation techniques. • Performed an independent sensitivity analysis calculation for the EBITDA and discount rate to assess their relationships and impact on the models. • Assessed the appropriateness of disclosures included in the financial statements. Based on the work performed, we were able to conclude that the significant judgements and estimates used in the valuation models were reasonable and appropriate.

Valuation of LNG off-take agreements

Refer to Note 40

Key audit matter	How our audit addressed the key audit matter
The Group continues to use derivative financial instruments to hedge certain tolling, transportation, bareboat charters and long-term liquefied natural gas ("LNG") off-take agreements. A net asset was recorded for these agreements totalling USD 6,791.6 million as at 30 September 2022 which primarily relates to the LNG hedge relationship. USD3,622.2 million was fair valued using unobservable inputs and categorised as Level 3 in the fair value hierarchy. The total hedge ineffectiveness recorded in the consolidated statement of income for the year ended 30 September 2022 was a loss of USD 1,076.0 million. The fair valuation of the hedged LNG agreements involves significant estimates, especially when the Group is required to use unobservable inputs, adopt market-based assumptions or make comparisons to similar instruments. These judgements become more significant in less liquid markets or for longer dated contracts. These fair values are calculated and managed manually. These cumulative factors are why this is considered a key audit matter.	We evaluated the Group's processes and controls for capturing and reviewing the inputs into the fair value estimates, including the relevant IT systems. We included specialists directly in our team to evaluate management's approach to estimating the fair values and performed the following: • Assessed the reasonableness of management's assumption that there is no readily available LNG market to classify these arrangements as financial instruments under IFRS. • Verified the consistent application of the accounting treatment of LNG contracts across the hedged population. Where manual calculations were involved, we tested the mathematical accuracy of the models. • Verified the inputs into the price curves to external sources on a sample basis. • Assessed the appropriateness of disclosures included in the consolidated financial statements Based on the work performed, we were able to conclude that the significant judgements and estimates used in the hedged item valuation were reasonable and appropriate.

Other information in the annual report

The Board of Directors is responsible for the other information in the annual report. The other information comprises all information included in the annual report but does not include the consolidated financial statements of the Group and our auditor's reports thereon.

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

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

Responsibilities of the Board of Directors for the consolidated financial statements

The Board of Directors is responsible for the preparation of the consolidated financial statements that give a true and fair view in accordance with IFRS as issued by the IASB, and for such internal control as the Board of Directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

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

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's 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 will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made.
- Conclude on the appropriateness of the Board of Directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

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

We also provide the Board of Directors or its relevant committee with a statement that we have complied with relevant ethical requirements regarding independence and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with the Board of Directors or its relevant committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

PricewaterhouseCoopers SA

/s/ TRAVIS RANDOLPH	/s/ EWA ANSELM-JEDLINSKA
Travis Randolph	Ewa Anselm-Jedlinska

Geneva, Switzerland

7 December 2022

Enclosure:

- Consolidated financial statements (consolidated statement of income, consolidated statement of other comprehensive income, consolidated statement of financial position, consolidated statement of changes in equity, consolidated statement of cash flows and notes)

A. Consolidated statement of income

	Note	2022 USD'M	2021 USD'M
Revenue	9	318,476.4	231,308.1
Materials, transportation and storage	10	(302,899.4)	(222,056.1)
Employee benefits	11	(1,443.9)	(1,233.7)
Services and other	12	(2,151.3)	(1,128.0)
Operating profit or (loss) before depreciation and amortisation	6	**11,981.8**	6,890.3
Depreciation (right-of-use assets)	13	(1,216.3)	(1,094.7)
Depreciation and amortisation (PP&E and intangible fixed assets)	13	(584.2)	(361.3)
Impairments (fixed assets)	14	(535.9)	(685.5)
Impairments (financial assets and prepayments)	14	(103.3)	2.9
Operating profit or (loss)		**9,542.1**	4,751.7
Share of profit/(loss) of equity-accounted investees	15	54.2	(110.8)
Disposal results and impairments of equity-accounted investees	15	(51.6)	(440.3)
Income/(expenses) from investments	15	(44.3)	88.5
Result from equity-accounted investees and investments		**(41.7)**	(462.6)
Finance income	16	739.6	405.9
Finance expense	16	(2,280.5)	(1,252.3)
Result from financing activities		**(1,540.9)**	(846.4)
Profit before tax		**7,959.5**	3,442.7
Income tax	17	(933.3)	(368.0)
Profit for the year		**7,026.2**	3,074.7
Profit attributable to			
Owners of the Company		6,994.2	3,100.0
Non-controlling interests		32.0	(25.3)
Profit for the year		**7,026.2**	3,074.7

See accompanying notes.

B. Supplementary statement of income information

Reconciliation to Underlying EBITDA	Note	2022 USD'M	2021 USD'M
Operating profit or (loss) before depreciation and amortisation	6	**11,981.8**	6,890.3
Adjustments	18	106.8	105.2
Underlying EBITDA	18	**12,088.6**	6,995.5

See accompanying notes.

C. Consolidated statement of other comprehensive income

	Note	2022 USD'M	2021 USD'M
Profit for the year		**7,026.2**	3,074.7
Other comprehensive income			
Items that are or may be reclassified to profit or loss:			
Gain/(loss) on cash flow hedges	40	204.2	(105.1)
Effect from hyperinflation adjustment	43	23.5	13.7
Tax on other comprehensive income	17	(70.7)	8.7
Exchange gain/(loss) on translation of foreign operations	31	(310.0)	15.9
Share of comprehensive income/(loss) from associates		(26.5)	20.3
Recycling of currency translation reserve on acquisition of controlling stake in equity-accounted investee	7	–	716.0
Recycling of cash flow hedge reserve on disposal of equity-accounted investee		–	4.5
Items that will not be reclassified to profit or loss:			
Net change in fair value through other comprehensive income, net of tax	23	(45.1)	(13.7)
Defined benefit plan actuarial gains/(losses), net of tax		26.4	18.7
Other comprehensive income for the year, net of tax		**(198.2)**	679.0
Total comprehensive income for the year		**6,828.0**	3,753.7
Total comprehensive income attributable to:			
Owners of the Company		6,796.1	3,779.0
Non-controlling interests		31.9	(25.3)
Total comprehensive income for the year		**6,828.0**	3,753.7

See accompanying notes.

D. Consolidated statement of financial position

	Note	30 September 2022 USD'M	30 September 2021* USD'M
Assets			
Property, plant and equipment	19	4,377.1	4,761.9
Intangible fixed assets	20	2,112.7	1,815.3
Right-of-use assets	21	3,904.5	2,406.2
Equity-accounted investees	22	979.6	842.2
Prepayments	23	1,534.1	1,804.6
Loans receivable	23	307.5	347.7
Other investments	23	595.5	1,584.2
Derivatives	40	1,125.2	331.8
Deferred tax assets	17	210.4	265.7
Other non-current assets	24	4,285.9	917.9
Total non-current assets		**19,432.5**	15,077.5
Inventories	25	22,583.6	29,653.5
Trade and other receivables	26	27,630.5	24,906.6
Derivatives	40	7,179.0	2,621.7
Prepayments	23	2,117.2	1,675.1
Income tax receivable	17	311.4	143.7
Other current assets	28	3,422.3	2,536.3
Deposits	29	642.0	460.0
Cash and cash equivalents	29	14,881.3	10,677.5
Total current assets		**78,767.3**	72,674.4
Assets classified as held for sale	30	434.1	2,425.4
Total assets		**98,633.9**	90,177.3

	Note	30 September 2022 USD'M	30 September 2021* USD'M
Equity			
Share capital	31	1,503.7	1,503.7
Capital securities	31	654.1	1,173.9
Reserves	31	(537.5)	(289.5)
Retained earnings	31	13,288.4	7,914.8
Equity attributable to the owners of the Company		**14,908.7**	10,302.9
Non-controlling interests		169.9	242.7
Total group equity		**15,078.6**	10,545.6
Liabilities			
Loans and borrowings	32	9,614.5	10,911.6
Long-term lease liabilities	21	2,817.1	1,646.8
Derivatives	40	2,723.7	804.3
Provisions	33	474.2	449.9
Other non-current liabilities	34	521.9	551.9
Deferred tax liabilities	17	380.4	394.9
Total non-current liabilities		**16,531.8**	14,759.4
Loans and borrowings	32	29,663.6	34,269.5
Short-term lease liabilities	21	1,170.1	925.3
Trade and other payables	35	25,649.5	22,814.6
Current tax liabilities	17	1,037.9	648.0
Other current liabilities	36	1,562.1	1,427.1
Derivatives	40	7,910.9	4,326.3
Total current liabilities		**66,994.1**	64,410.8
Liabilities classified as held for sale	30	29.4	461.5
Total group equity and liabilities		**98,633.9**	90,177.3

* 30 September 2021 has been restated as a result of amendments to the provisional assessment of the identifiable assets acquired in the acquisition of Puma Energy. Please refer to notes 2.6 and 7.1.

See accompanying notes.

E. Consolidated statement of changes in equity

		Equity attributable to the owners of the Company									
USD'M	Note	Share capital	Currency translation reserve	Revaluation reserve	Cash flow hedge reserve	Capital securities	Retained earnings	Profit for the year	Total	Non-controlling interests	Total Group equity
Balance at 1 October 2021		1,503.7	(79.4)	(34.9)	(175.2)	1,173.9	4,814.8	3,100.0	10,302.9	242.7	10,545.6
Profit for the year		–	–	–	–	–	–	6,994.2	6,994.2	32.0	7,026.2
Other comprehensive income		–	(340.8)	(45.1)	137.8	–	50.0	–	(198.1)	(0.1)	(198.2)
Total comprehensive income for the year		–	(340.8)	(45.1)	137.8	–	50.0	6,994.2	6,796.1	31.9	**6,828.0**
Profit appropriation		–	–	–	–	–	3,100.0	(3,100.0)	–	–	–
Dividend	31	–	–	–	–	–	(1,721.2)	–	(1,721.2)	(14.6)	(1,735.8)
Acquisition of non-controlling interest in subsidiary		–	–	–	–	–	(36.3)	–	(36.3)	(29.0)	(65.3)
Share-based payments	11	–	–	–	–	–	106.8	–	106.8	–	106.8
Repayment of capital securities	31	–	–	–	–	(479.2)	–	–	(479.2)	–	(479.2)
Capital securities (currency translation)	31	–	–	–	–	(45.1)	45.1	–	–	–	–
Capital securities dividend	31	–	–	–	–	–	(64.3)	–	(64.3)	–	(64.3)
Divestment and deconsolidation of subsidiary		–	–	–	–	–	–	–	–	(66.1)	(66.1)
Capital contribution from the minority shareholders		–	–	–	–	–	–	–	–	2.3	2.3
Other		–	–	0.1	–	4.5	(0.7)	–	3.9	2.7	6.6
Balance at 30 September 2022		1,503.7	(420.2)	(79.9)	(37.4)	654.1	6,294.2	6,994.2	14,908.7	169.9	**15,078.6**

		Equity attributable to the owners of the Company									
USD'M	Note	Share capital	Currency translation reserve	Revaluation reserve	Cash flow hedge reserve	Capital securities	Retained earnings	Profit for the year	Total	Non-controlling interests	Total Group equity
Balance at 1 October 2020		1,503.7	(822.6)	(63.3)	(79.5)	1,097.7	4,224.2	1,699.1	7,559.3	230.6	7,789.9
Profit for the year		–	–	–	–	–	–	3,100.0	3,100.0	(25.3)	3,074.7
Other comprehensive income		–	756.1	(13.8)	(95.7)	–	32.4	–	679.0	–	679.0
Total comprehensive income for the year		–	756.1	(13.8)	(95.7)	–	32.4	3,100.0	3,779.0	(25.3)	**3,753.7**
Profit appropriation		–	–	–	–	–	1,699.1	(1,699.1)	–	–	–
Dividend	31	–	–	–	–	–	(1,116.7)	–	(1,116.7)	–	(1,116.7)
Recycling revaluation reserve to retained earnings FVOCI instruments		–	–	43.4	–	–	(43.4)	–	–	–	–
Acquisition of non-controlling interest in subsidiary		–	–	–	–	–	(4.4)	–	(4.4)	(221.7)	(226.1)
Share-based payments	11	–	–	–	–	–	104.9	–	104.9	–	104.9
Capital securities issued	31	–	–	–	–	400.0	(2.0)	–	398.0	–	398.0
Repayment of capital securities	31	–	–	–	–	(320.8)	(3.7)	–	(324.5)	–	(324.5)
Capital securities (currency translation)	31	–	–	–	–	(3.9)	3.9	–	–	–	–
Capital securities dividend	31	–	–	–	–	–	(82.7)	–	(82.7)	–	(82.7)
Reclassification		–	(12.8)	–	–	–	12.8	–	–	–	–
Share of other changes in equity of associates		–	–	–	–	–	(13.5)	–	(13.5)	–	(13.5)
Increase in non-controlling interest relating to acquisition of consolidated entities	7	–	–	–	–	–	–	–	–	250.6	250.6
Capital contribution from the minority shareholders		–	–	–	–	–	–	–	–	8.5	8.5
Other		–	(0.1)	(1.2)	–	0.9	3.9	–	3.5	–	3.5
Balance at 30 September 2021		1,503.7	(79.4)	(34.9)	(175.2)	1,173.9	4,814.8	3,100.0	10,302.9	242.7	**10,545.6**

See accompanying notes.

F. Consolidated statement of cash flows

	Note	2022 USD'M	2021 USD'M
Cash flows from operating activities			
Profit before tax		7,959.5	3,442.7
Adjustments for:			
Depreciation and amortisation	13	1,800.5	1,456.0
Impairments (included in operating profit or loss)	14	639.2	682.6
Result from equity-accounted investees and investments	15	41.7	462.6
Result from financing activities	16	1,540.9	846.4
Equity-settled share-based payment transactions	11	106.8	105.2
Provisions	33	66.0	(0.1)
(Gain)/loss on sale of fixed assets (included in services and other)		(29.6)	(7.1)
Operating cashflow before working capital changes		**12,125.0**	6,988.3
Changes in:			
Inventories	25	7,070.1	(8,591.8)
Trade and other receivables and derivatives	26	(12,870.8)	(13,593.2)
Prepayments	23	(160.2)	484.3
Trade and other payables and derivatives	35	9,791.1	15,594.2
Cash generated from/(used in) operating activities		**15,955.2**	881.8
Interest paid		(2,259.9)	(1,211.5)
Interest received		708.9	337.4
Dividends (paid)/received		26.1	165.8
Tax (paid)/received		(685.4)	(407.0)
Net cash flows from/(used in) operating activities		**13,744.9**	(233.5)
Cash flows from investing activities			
Acquisition of property, plant and equipment	19	(658.3)	(683.0)
Proceeds from sale of property, plant and equipment	19	92.4	270.1
Disposal of assets/liabilities held for sale	30	34.9	–
Acquisition of intangible assets	20	(571.2)	(66.9)
Acquisition of equity-accounted investees	22	(150.9)	(149.6)
Disposal of equity-accounted investees	22	714.9	57.5
Loans receivable and advances granted	23	(57.6)	(555.1)
Repayment of loans receivable and advances granted	23	27.6	50.3
Acquisition of other investments	23	(42.2)	(1,971.8)
Disposal of other investments	23	74.7	41.8
Acquisition of subsidiaries, net of cash acquired	7	–	278.8
Net cash flows from/(used in) investing activities		**(535.7)**	(2,727.9)
Cash flows from financing activities			
Proceeds from the issue of capital securities	31	–	398.0
Payment of capital securities dividend	31	(58.8)	(73.5)
Dividend and payments in relation to the share redemption by the direct parent company	31	(1,713.5)	(1,095.2)
Repayment of capital securities	31	(479.2)	(324.5)
Proceeds from capital contributions to subsidiaries by non-controlling interests		2.3	8.5
Acquisition of non-controlling interest		–	(20.3)
Increase in long-term loans and borrowings	32	2,994.2	4,072.8
(Decrease) in long-term loans and borrowings	32	(1,841.7)	(16.4)
Payment of leases	21/ 32	(1,230.6)	(1,044.8)
Net increase/(decrease) in short-term bank financing	32	(6,678.1)	5,977.3
Net cash flows from/(used in) financing activities		**(9,005.4)**	7,881.9
Net increase/(decrease) in cash and cash equivalents		**4,203.8**	4,920.5
Cash and cash equivalents at 1 October		10,677.5	5,757.0
Cash and cash equivalents at 30 September	29	**14,881.3**	10,677.5

See accompanying notes.

G. Notes to consolidated financial statements

1. Corporate information

The principal business activities of Trafigura Group Pte. Ltd. ('Trafigura' or the 'Company') and its subsidiaries (the 'Group') are trading in crude and petroleum products, power and renewables, non-ferrous concentrates, refined metals and bulk commodities such as coal and iron ore. The Group also invests in assets, including through investments in associates, which have strong synergies with its core trading activities. These include storage terminals, service stations, metal warehouses, industrial facilities and mines.

The Company is incorporated in Singapore and its principal business office is at 10 Collyer Quay, Ocean Financial Centre, #29-01/05, Singapore, 049315.

The Company's immediate holding company is Trafigura Beheer B.V., a company incorporated in the Netherlands. Trafigura Beheer B.V. is ultimately controlled by Farringford Foundation, which is established under the laws of Panama.

The consolidated financial statements for the year ended 30 September 2022 were authorised for issue by the Board of Directors on 7 December 2022.

2. Basis of preparation

2.1 Statement of compliance

The Company's consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

2.2 Basis of measurement

The consolidated financial statements have been prepared under the historical cost convention except for inventories, derivatives and certain other financial instruments that have been measured at fair value. The consolidated financial statements have been prepared on a going concern basis.

2.3 No change in accounting policies for financial year 2022

The accounting principles applied in the preparation of the consolidated financial statements are consistent with those described in the Trafigura 2021 Annual Report.

Several IFRS amendments apply for the first time in the 2022 financial year. However, these do not materially impact the Group's consolidated financial statements.

For an overview of the estimated effect of issued, but not yet effective, new and amended IFRS standards and IFRICs on the Group, refer to note 4 – Adoption of new and revised standards.

2.4 Functional and presentation currency

The Group's presentation currency is the US dollar (USD) and all values are rounded to the nearest tenth of a million (USD'M 0.1) unless otherwise indicated. The US dollar is the functional currency of most of the Group's principal operating subsidiaries. Most of the markets in which the Group is involved are USD denominated.

2.5 Going concern

Trafigura assessed the going-concern assumptions during the preparation of the Group's consolidated financial statements. The Group believes that no events or conditions, including those related to the COVID-19 pandemic and the Ukraine war, give rise to doubt about the ability of the Group to continue operating in the next reporting period. This conclusion is drawn based on the knowledge of the Group, the estimated economic outlook and identified risks and uncertainties in relation thereto.

Furthermore, this conclusion is based on review of the current cash balance and expected developments in liquidity and capital. The Group has sufficient cash and headroom in its credit facilities. Therefore, it expects that it will be able to meet contractual and expected maturities and covenants. Consequently, it has been concluded that it is reasonable to apply the going-concern concept as the underlying assumption for the financial statements.

2.6 Comparative financial information

Comparative numbers in the Consolidated Statement of Financial Position have been amended as a result of restatements in the 2022 financial year relating to the provisional assessment of the identifiable assets acquired in the acquisition of Puma Energy Holdings Pte. Ltd. (Puma Energy). Refer to note 7.1.

2.7 Change in Consolidated Statement of Income presentation

As from the end of the 2021 financial year onwards, the Group has changed the presentation of the Consolidated Statement of Income from a classification based on the function of expense to a classification based on the nature of expense in order to provide a clearer analysis of the Group's financial performance. At the same time, performance monitoring by Group Executive management also changed to an analysis based on the nature-of-expense method.

As from the end of the 2022 financial year, the Group has made the following additional changes:

Prospectively applied from 2022 onwards

Up to and including 2021, revenue and expenses from service stations were presented on a net basis within Services and Other. Going forward, as the full year income statement of Puma Energy Holdings Pte. Ltd. and its subsidiaries (Puma Energy) will be fully consolidated with the Group, revenue from service stations will be included in Group revenue. For the 2022 financial year, revenue from the retail segment amounted to USD4,453 million. No retrospective adjustment has been made as the impact on the Consolidated Statement of Income for the 2021 financial year was not material.

Retrospectively applied

Certain reclassifications have been made to the previous financial year presentation so that it conforms with the presentation for the current financial year. Changes have been made to increase clarity of the presentation.

G. Notes to consolidated financial statements

3. Significant accounting policies

The Group's significant accounting policies are described in the relevant individual notes to the consolidated financial statements or otherwise stated below.

3.1 Basis of consolidation

The consolidated financial statements include the assets, liabilities and results of operations of all subsidiaries and branch offices, which the Company, either directly or indirectly, controls. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. When the Group has less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee.

Subsidiaries

Subsidiaries are consolidated from the date on which control is obtained by the Company and cease to be consolidated from the date on which control is transferred to a person or entity outside of the control of the Company. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

Changes in the Company's interests in subsidiaries that do not result in a loss of control are accounted for as equity transactions, with any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received being recognised directly in equity and attributed to equity holders of the Company.

Non-controlling interests

Non-controlling interests in subsidiaries are identified separately from the Company's equity and are initially measured either at fair value or at the non-controlling interests' proportionate share of the fair value of the acquiree's identifiable net assets. Subsequent to acquisition, the carrying amount of non-controlling interests is the amount of those interests at initial recognition plus the non-controlling interests' share of subsequent changes in equity. Total comprehensive income is attributed to non-controlling interests even if this results in the non-controlling interests having a deficit balance.

Loss of control

If the Group loses control, the Group derecognises the assets and liabilities of the subsidiary, any non-controlling interests and the other components of equity related to the subsidiary. The parent's share of components previously recognised in other comprehensive income is reclassified to profit and loss or retained earnings, as would be required if the Group had directly disposed of the related assets or liabilities. Any surplus or deficit arising on the loss of control is recognised in the Consolidated Statement of Income. If the Group retains any interest in the previous subsidiary, then such interest is measured at fair value at the date that control is lost. Subsequently, it is accounted for as an equity-accounted investee or as an equity investment depending on the level of influence retained.

3.2 Current versus non-current classification

The Group presents assets and liabilities in the statement of financial position based on current/non-current classification. An asset is current when it is:

- Expected to be realised or intended to be sold or consumed in the normal operating cycle;
- Held primarily for the purpose of trading; and
- Expected to be realised within 12 months after the reporting period.

All other assets are classified as non-current.

A liability is current when:

- It is expected to be settled in the normal operating cycle;
- It is held primarily for the purpose of trading; and
- It is due to be settled within 12 months after the reporting period.

The terms of the liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification.

The Group classifies all other liabilities as non-current. Deferred tax assets and liabilities are classified as non-current assets and liabilities.

3.3 Foreign currency

3.3.1 Foreign currency transactions

Subsidiaries, joint ventures and equity-accounted investees record transactions in the functional currency of the economic environment in which they operate. Transactions in currencies other than the functional currency of the subsidiary, joint ventures and equity investees are recorded at the rates of exchange prevailing at the date of the transaction.

Monetary assets and liabilities in currencies other than the functional currency are translated at the rates of exchange prevailing at the balance sheet date and gains and losses are reported in the Consolidated Statement of Income.

3.3.2 Foreign operations

The assets and liabilities of foreign operations, including goodwill and fair value adjustments arising on acquisition, are translated to USD at exchange rates at the reporting date. The income and expenses of foreign operations, excluding foreign operations in hyperinflationary economies, are translated to USD at the average rate for the year that is considered as the best estimate of transaction dates. The resulting exchange differences are recorded in equity through other comprehensive income and are included in the Consolidated Statement of Income upon sale or liquidation of the underlying foreign operation.

Group entities for which the functional currency is the currency of a hyperinflationary economy first restate their financial statements in accordance with IAS 29, Financial Reporting in Hyperinflationary Economies (refer to 'Reporting in hyperinflationary economies' below). The related income, costs and balance sheet amounts are translated at the foreign exchange rate at the balance sheet date.

3.3.3 Reporting in hyperinflationary economies

Please refer to note 43.

4. Adoption of new and revised standards

4.1 New and amended standards or interpretations adopted

In the 2022 financial year, the Group adopted the following new and amended standards or interpretations:

Standard/Interpretation	Name of standard/interpretation or amendments	Date of publication	Effective as of
Amendments to IFRS 4	Insurance Contracts (Extension of Temporary Exemption from Application of IFRS 9)	25 June 2020	1 January 2021
Amendments to:		27 August 2020	1 January 2021
IFRS 9	Financial Instruments		
IAS 39	Financial Instruments: Recognition and Measurement		
IFRS 7	Financial Instruments: Disclosures		
IFRS 4	Insurance Contracts		
IFRS 16	Leases (Interest Rate Benchmark Reform – Phase 2)		
Amendments to IFRS 16	Leases: Covid-19-Related Rent Concessions beyond June 30, 2021	31 March 2021	1 April 2021

The amendments shown in the table had no material effect on the consolidated financial statements.

4.2 New standards, amendments and interpretations not yet adopted

Certain new accounting standards and interpretations have been published that are not mandatory for 30 September 2022 reporting period and have not been adopted early by the Group:

Standard/Interpretation	Name of standard/interpretation or amendments	Date of publication	Expected date of initial application (financial years starting as of)
Amendments to IAS 16	Property, Plant and Equipment (Proceeds before Intended Use)	14 May 2020	1 January 2022
Amendments to IAS 37	Provisions, Contingent Liabilities and Contingent Assets (Onerous Contracts, Settlement Costs from Contracts)	14 May 2020	1 January 2022
Amendments to IFRS 3	Business Combinations (Amendment to References to the Conceptual Framework)	14 May 2020	1 January 2022
Annual improvements to IFRS 2018-2020	Amendments to: • IFRS 1 (Subsidiary as a First-Time Adopter) • IFRS 9 (Fees in the “10% Test” Regarding Derecognition of Financial Liabilities) • IFRS 16 (Lease Incentives) • IAS 41 (Taxation in Fair Value Measurements)	14 May 2020	1 January 2022
Amendments to IFRS 17	Insurance Contracts (including amendments to the standard)	25 June 2020	1 January 2023
Amendments to IAS 1	Presentation of Financial Statements (Classification of Liabilities as Current or Noncurrent) (including Deferral of Effective Date)	23 January 2020 (15 July 2020)	1 January 2023
Amendments to IAS 1 and IFRS Practice Statement 2	Presentation of Financial Statements and Making Materiality Judgements (Presentation of Key Accounting Policies)	12 February 2021	1 January 2023
Amendments to IAS 8	Accounting Policies, Changes in Accounting Estimates and Errors (Definition of Changes in Accounting Policies and Accounting Estimates)	12 February 2021	1 January 2023
Amendments to IAS 12	Income Taxes (Deferred Tax Related to Assets and Liabilities Arising from a Single Transaction)	7 May 2021	1 January 2023
Amendments to IFRS16	Lease Liability in a Sale and Leaseback Amendments to IFRS	22 September 2022	1 January 2024
Amendments to IAS 1	Non-current liabilities with Covenants	31 October 2022	1 January 2024

The Group does not expect that these new standards, amendments and interpretations not yet adopted will have a material effect on the consolidated financial statements.

G. Notes to consolidated financial statements

5. Key accounting estimates and judgements

Preparing the consolidated financial statements in compliance with IFRS requires management to make judgements, estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

In the process of applying the Group's accounting policies, management has made various judgements. Those which management has assessed to have the most significant effect on the amounts recognised in the consolidated financial statements have been discussed in the individual notes of the related financial statement line items.

The key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date and that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are also described in the individual notes of the related financial statement line items below. The Group based its assumptions and estimates on parameters available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change as a result of market changes or circumstances arising that are beyond the control of the Group. Such changes are reflected in the assumptions when they occur.

The Group has identified the following areas as being critical to understanding its financial position as they require management to make complex and/or subjective judgements and estimates about matters that are inherently uncertain:

- Useful life and residual value of property, plant and equipment (note 13 – Depreciation and amortisation);
- Impairment tests (note 14 – Impairments);
- Taxation (note 17 – Income Tax);
- Discount rates (note 21 – Leases);
- Determining the term of a lease contract (note 21 – Leases);
- Determination of control of subsidiaries and joint arrangements (note 22 – Equity-accounted investees);
- Assets held for sale (note 30 – Assets classified as held for sale and discontinued operations);
- Provisions (note 33 – Provisions);
- Restoration, rehabilitation and decommissioning costs (note 33 – Provisions); and
- Valuation of financial assets, including derivative and level 3 instruments (note 40 – Hedging activities and derivatives).

6. Operating segments

Accounting policy

The segment reporting is in accordance with IFRS 8 Operating Segments. The segments reported reflect the reporting lines and structures used by the Group's Chief Executive Officer, who has been identified as the chief operating decision-maker, to allocate resources and assess the performance of Trafigura.

Operating segments have been aggregated if they have similar economic characteristics and are similar in the nature of products and services, production services, distribution methods and customer types or classes. In addition, aggregation has been applied for segments that do not merit disclosure by virtue of their size, based on a 10 percent threshold of combined revenue, profit or assets of all operating segments.

The accounting policies of the operating segments are the same as those described throughout the notes where relevant. The Group accounts for inter-segment sales and transfers where applicable as if the sales or transfers were to third parties. Geographical data is presented according to the management view.

Segment assets, liabilities, income and results are measured based on our accounting policies and include items directly attributable to a segment, as well as those that can be allocated on a reasonable basis. Transactions between segments are conducted on an arm's length basis.

The Group's operating businesses are organised and managed separately according to the nature of the products, with each segment representing a strategic unit that offers different products and serves different markets. The reportable segments comprise:

- The Energy segment is engaged in trading of oil and petroleum products and related freight activities, the Puma Energy activities, and trading and investing in power and renewable energy. Oil and Petroleum concerns the sourcing, provision and storage of oil, at all stages from crude to finished products such as naphtha and gasoline. This includes the blending required to make gasoline in the various grades suitable for the different specifications relevant in different countries. Puma Energy activities include the sale and distribution of petroleum products. Trading in power and renewables started in the 2021 financial year and has been included under the Energy segment.
- The Metals and Minerals segment trades copper, lead, zinc, aluminium, iron ore and coal in all forms, including ores, concentrates, and refined metals. The segment is involved in all the various stages, from mining and smelting to the production of finished metals. This segment also includes the mining activities, Nyrstar and Impala activities. In addition to trading activities, the activities performed in this segment include the blending of metal concentrates, iron ore, coal and alumina; the smelting of zinc and lead concentrates; and warehousing and transportation. The Metals and Minerals segment also includes related freight activities.
- All other segments include holding companies, securitisation programmes, group financing facilities and some smaller operating companies.

Information regarding the results of each reportable segment is included below. Performance is measured based on the segment's operating profit or loss before depreciation and amortisation. Management believes that such information is the most relevant in evaluating the results of certain segments relative to other entities that operate within these industries.

Reconciliations of reportable segment revenues, results, assets and liabilities, and other material items are as follows:

2022	Energy USD'M	Metals and Minerals USD'M	Corporate and Other USD'M	Total USD'M
Sales revenue from external customers	211,981.2	103,526.7	–	315,507.9
Service revenue from external customers	2,196.7	771.8	–	2,968.5
Revenue	214,177.9	104,298.5	–	**318,476.4**
Operating profit or (loss) before depreciation and amortisation	10,126.2	1,876.8	(21.2)	**11,981.8**
Depreciation (right-of-use assets)	(1,097.1)	(114.0)	(5.2)	(1,216.3)
Depreciation and amortisation (PP&E and intangible fixed assets)	(297.6)	(287.0)	0.4	(584.2)
Impairments (PP&E and intangible fixed assets)	(284.1)	(251.1)	(0.7)	(535.9)
Impairments (financial assets and prepayments)	72.1	(175.4)	–	(103.3)
Operating profit or (loss)	8,519.5	1,049.3	(26.7)	**9,542.1**
Result from equity-accounted investees and investments	(24.7)	(16.6)	(0.4)	(41.7)
Result from financing activities				(1,540.9)
Profit before tax				**7,959.5**
Income tax				(933.3)
Profit for the year				**7,026.2**

2021	Energy USD'M	Metals and Minerals USD'M	Corporate and Other USD'M	Total USD'M
Sales revenue from external customers	139,392.6	90,615.6	–	230,008.2
Service revenue from external customers	893.5	406.4	–	1,299.9
Revenue	140,286.1	91,022.0	–	**231,308.1**
Operating profit or (loss) before depreciation and amortisation	4,417.2	2,473.4	(0.3)	**6,890.3**
Depreciation (right-of-use assets)	(993.9)	(81.4)	(19.4)	(1,094.7)
Depreciation and amortisation (PP&E and intangible fixed assets)	(31.2)	(278.4)	(51.7)	(361.3)
Impairments (PP&E and intangible fixed assets)	(495.5)	(189.9)	(0.1)	(685.5)
Impairments (financial assets and prepayments)	11.4	(7.6)	(0.9)	2.9
Operating profit or (loss)	2,908.0	1,916.1	(72.4)	**4,751.7**
Result from equity-accounted investees and investments	(968.3)	503.4	2.3	(462.6)
Result from financing activities				(846.4)
Profit before tax				**3,442.7**
Income tax				(368.0)
Profit for the year				**3,074.7**

As at 30 September 2022	Energy USD'M	Metals and Minerals USD'M	Corporate and Other USD'M	Total USD'M
Segment assets and liabilities				
Equity-accounted investees	215.3	742.0	22.3	979.6
Other non-current assets	12,917.7	4,933.5	601.7	18,452.9
Net assets classified as held for sale	404.7	–	–	404.7
Total assets	57,574.1	27,634.9	13,424.9	98,633.9
Total liabilities	45,669.5	21,878.5	15,977.9	83,525.9
Other segment information				
Capital expenditure	821.5	334.5	69.9	1,225.9

As at 30 September 2021*	Energy USD'M	Metals and Minerals USD'M	Corporate and Other USD'M	Total USD'M
Segment assets and liabilities				
Equity-accounted investees	125.1	708.1	9.0	842.2
Other non-current assets	9,003.6	4,855.2	376.5	14,235.3
Net assets classified as held for sale	1,963.9	–	–	1,963.9
Total assets	45,634.1	33,561.0	10,982.2	90,177.3
Total liabilities	37,429.4	25,890.2	15,850.6	79,170.2
Other segment information				
Capital expenditure	340.7	340.9	68.4	750.0

*30 September 2021 has been restated as a result of amendments to the provisional assessment of the identifiable assets acquired in the acquisition of Puma Energy. Please refer to notes 2.6 and 7.1.

Geographical information

The following table sets out information about the geographical location of the Group's revenue from external customers:

2022	Energy USD'M	Metals and Minerals USD'M	Total USD'M
Revenue from external customers			
Europe	62,426.8	20,464.1	82,890.9
Asia	60,471.3	63,932.4	124,403.7
North America	48,513.4	6,111.6	54,625.0
Latin America	23,256.4	2,181.0	25,437.4
Africa	11,367.4	3,438.7	14,806.1
Australia	963.6	1,898.4	2,862.0
Middle East	7,179.0	6,272.3	13,451.3
Total	214,177.9	104,298.5	**318,476.4**

2021	Energy USD'M	Metals and Minerals USD'M	Total USD'M
Revenue from external customers			
Europe	41,488.5	17,980.4	59,468.9
Asia	41,759.2	51,808.1	93,567.3
North America	33,312.4	10,305.7	43,618.1
Latin America	13,666.5	1,497.9	15,164.4
Africa	4,534.4	3,540.4	8,074.8
Australia	651.4	913.0	1,564.4
Middle East	4,873.7	4,976.5	9,850.2
Total	140,286.1	91,022.0	**231,308.1**

G. Notes to consolidated financial statements

7. Business combinations and non-controlling interests

Accounting policy

The Company accounts for its business combinations under the acquisition method at the acquisition date, which is the date on which control is transferred to the Group. The cost of an acquisition is measured as the aggregate of the consideration transferred, which is measured at acquisition date fair value, and the amount of any non-controlling interests in the acquiree. Transaction costs, other than those associated with the issue of debt or equity securities, which the Group incurs in connection with a business combination are expensed as incurred.

If a business combination is achieved in stages, any previously held equity interest is remeasured at its acquisition date fair value and any resulting gain or loss is recognised in the Consolidated Statement of Income, except when measured at fair value through other comprehensive income. The remeasured stake is then considered in the determination of goodwill.

If the consideration transferred for a business combination exceeds the fair values attributable to the Group's share of the identifiable net assets, the difference is treated as goodwill, which is not amortised but is reviewed annually for impairment or when there is an indication of impairment. If a business combination results in a negative goodwill, the Group reassesses whether it has correctly identified and measured all assets acquired and all liabilities assumed. If the negative goodwill remains after the reassessment, it is recognised as a gain in the Consolidated Statement of Income.

Any contingent consideration payable is measured at fair value at the acquisition date. If the contingent consideration is classified as equity, then it is not remeasured and settlement is accounted for within equity. Otherwise, subsequent changes in the fair value of the contingent consideration are recognised in the Consolidated Statement of Income.

7.1 Financial year 2022

7.1.1 Acquisition of additional shareholding in Puma Energy

Trafigura's share in Puma Energy increased from 93.4 percent to 96.7 percent as per 30 September 2022 as Cochan Holdings LLC ceased to be a shareholder in Puma Energy in December 2021.

7.2 Financial year 2021

7.2.1 Acquisition of Puma Energy

On 30 September 2021, through a series of linked transactions, the Group acquired control over Puma Energy Holdings Pte. Ltd. (Puma Energy), a non-listed company incorporated in Singapore. On this date, the Group obtained a majority in Puma Energy's Board of Directors. Following the conversion of debt into equity and purchase of shares from minority shareholders, the Group's shareholding increased from 55.5 percent as at 30 September 2020 to 72.8 percent as at 30 September 2021. Puma Energy's main activities include ownership and operation of storage facilities for the sale and distribution of petroleum products. The Group acquired Puma Energy as part of the recapitalising and strengthening of Puma Energy.

One of the linked transactions, the acquisition of the Puma Energy shares held by Sonangol, was signed in conjunction with another transaction, through which Sonangol was to acquire Puma Energy's business in Angola for a consideration of USD600 million corrected for working capital. This transaction completed in the first quarter of the 2022 financial year for a final net consideration of USD647.9 million. Please refer to note 30.

As the amount payable to Sonangol was fixed and management expected anti-trust approval to be received in the first quarter of the 2022 financial year, the (economic) risk and rewards of Sonangol's shares in Puma Energy economically increased the Group's share in Puma Energy to 93.4 percent as at 30 September 2021, and this was accounted as such in the business combination.

Goodwill

Goodwill of USD993.1 million (retrospectively remeasured to USD1,074.1 million after finalisation of the acquisition accounting in financial year 2022) was recognised on the acquisition, being the excess of the purchase consideration over the fair value of net assets acquired as set out on the next page. The goodwill comprises the value of expected synergies from the acquisition, which is not separately recognised. Synergies result from focus on three core areas: first, closer co-operation between Puma Energy and the Group. This strengthens Puma Energy's competitiveness by leveraging the Group's energy market intelligence and expertise in supply chain optimisation. Second, the Group will reinvigorate Puma Energy's core business by investing carefully in downstream assets to grow market share. Finally, the Group will prepare Puma Energy for the future of energy: the transition to a lower-carbon future.

None of the goodwill recognised is expected to be deductible for income tax purposes.

Fair value of net assets acquired

After finalisation of the acquisition accounting in 2022, the fair values of the identifiable assets and liabilities of Puma Energy as at acquisition date (30 September 2021) were:

	Initial recognition of acquisition	Amendments	After finalisation of acquisition
	USD'M	USD'M	USD'M
Assets			
Property, plant and equipment	1,691.4	(66.7)	1,624.7
Intangible assets	468.1	55.3	523.4
Right-of-use assets	620.5	(1.9)	618.6
Equity-accounted investees	51.4	(1.4)	50.0
Loans receivable	23.6	(14.7)	8.9
Other investments	34.2	(2.6)	31.6
Deferred tax assets	47.4	–	47.4
Other non-current assets	211.8	14.3	226.1
Total non-current assets	**3,148.4**	**(17.7)**	**3,130.7**
Inventories	884.1	–	884.1
Trade and other receivables	922.7	158.5	1,081.2
Derivatives	–	11.4	11.4
Prepayments	61.7	(61.7)	–
Income tax receivable	28.9	–	28.9
Other current assets	11.4	50.3	61.7
Cash and cash equivalents	322.0	–	322.0
Total current assets	**2,230.8**	**158.5**	**2,389.3**
Assets classified as held for sale	2,394.4	(110.2)	2,284.2
Total assets	**7,773.6**	**30.6**	**7,804.2**
Non-controlling interests			
Non-controlling interests	**184.0**	**(8.7)**	**175.3**
Liabilities			
Loans and borrowings	1,521.7	0.4	1,522.1
Long-term lease liabilities	418.0	(0.1)	417.9
Provisions	43.8	–	43.8
Other non-current liabilities	7.9	0.1	8.0
Deferred tax liabilities	330.6	1.2	331.8
Total non-current liabilities	**2,322.0**	**1.6**	**2,323.6**
Loans and borrowings	787.8	(0.3)	787.5
Short-term lease liabilities	91.9	(0.1)	91.8
Trade and other payables	2,785.7	123.4	2,909.1
Current tax liabilities	112.9	–	112.9
Other current liabilities	21.5	(3.0)	18.5
Derivatives	–	3.1	3.1
Total current liabilities	**3,799.8**	**123.1**	**3,922.9**
Liabilities classified as held for sale	461.5	–	461.5
Total liabilities	**6,583.3**	**124.7**	**6,708.0**
Fair value of net assets acquired	**1,006.3**	**(85.4)**	**920.9**

The Group measured the non-controlling interest balance at the non-controlling interests' proportionate share in the fair value of Puma Energy's identifiable net assets.

The net assets recognised in the 30 September 2021 financial statements were based on a provisional assessment of their fair values while the Group continued to work with independent valuators on determining more precise values for the acquired tangible and intangible fixed assets, and continued to evaluate certain deferred tax positions. These procedures were not completed by the date that the FY2021 financial statements were approved for issue by the Board of Directors.

During the 2022 financial year, the Group continued to work on determining more precise values for the acquired tangible and intangible fixed assets. This resulted in various adjustments to the provisional amounts and the comparative information for 2021 was restated to reflect the adjustments to the provisional amounts.

The comparative information at 30 September 2021 was restated to reflect adjustments to the provisional assessment of the identifiable assets acquired at acquisition. The main restatements are:

- The finalisation of the valuation of the acquired tangible and intangible fixed assets during the 2022 financial year resulted in a downward adjustment to the acquired property, plant and equipment value by USD66.7 million and an upward adjustment of the intangible fixed assets by USD55.3 million. The Group worked with independent valuators in determining the final valuations.
- The value of the assets classified as held for sale decreased by USD110.2 million. This decrease resulted from changes in the determination of working capital proceeds and increased costs to dispose.
- In the previous year, various positions (receivables/payables) within the assets held for sale perimeter were assumed to be capitalised as part of the transaction. During the 2022 financial year, the Company adjusted the working capital positions of the remaining Group with the assets held for sale perimeter to appropriately reflect the remaining working capital positions. As the assets held for sale acquired in a business combination are measured at fair value, any impact on the net assets and liabilities acquired as a result of working capital changes is offset by an increase or decrease in the fair value step-up. As a result, the changes in working capital positions did not materially impact the overall valuation of the assets held for sale balance.

Purchase consideration

The acquisition took place through a series of linked transactions, including:

- Conversion into equity of a convertible debt instrument issued under a rights issue (USD495.6 million);
- Acquisition of Puma Energy shares held by Sonangol (USD600.0 million); and
- Acquisition of Puma Energy shares held by minority shareholders (USD50.2 million).

In conjunction with the second linked transaction, Sonangol acquired Puma Energy's business in Angola for a gross consideration of USD600.0 million on completion, with the net consideration including working capital corrections.

Upon obtaining control, the Group has remeasured its previously held equity investment in Puma Energy based on a fair value assessment (i.e. assessing Puma Energy's enterprise value based on a discounted cash flow model). The resulting loss of USD79.7 million has been recognised in the Consolidated Statement of Income within disposal results of and impairments on equity-accounted investees. Measurement took place on the basis of a fair value assessment of Puma Energy as the Group determined that the consideration paid in the transactions was not the most suitable basis to determine the fair value of acquiree.

G. Notes to consolidated financial statements

Based on the same fair value assessment, the Group concluded that it could not justify as goodwill the full balance of the excess of the purchase consideration over the fair value of net assets acquired. Therefore, it recognised a portion of the excess as a day 1 goodwill impairment (USD88.4 million), which was recognised in the Consolidated Statement of Income within impairments of intangible fixed assets in the 2021 financial year. The remaining goodwill balance could be supported by the fair value measurement. Please also refer to notes 14 and 20. An amount of USD6.2 million transaction costs were recognised in the Consolidated Statement of Income within services and other.

Based on the above, the goodwill has been computed as follows:

	Initial recognition of acquisition	Amendments	After finalisation of acquisition
	USD'M	USD'M	USD'M
Consideration (including rights issue)	1,144.5	1.2	1,145.7
Fair value existing stake	876.8	–	876.8
Non-controlling interest	66.5	(5.6)	60.9
Purchase consideration	**2,087.8**	**(4.4)**	**2,083.4**
Fair value of net assets acquired	(1,006.3)	85.4	(920.9)
Initial computed goodwill	**1,081.5**	**81.0**	**1,162.5**
Day 1 goodwill impairment	(88.4)	–	(88.4)
Goodwill arising on acquisition	**993.1**	**81.0**	**1,074.1**

FCTR balance

As a result of the business combination, the Group is required to recycle to the Consolidated Statement of Income the remaining foreign currency translation balance on its previously held equity investment in Puma. The resulting loss of USD716.0 million was recognised in the Consolidated Statement of Income within disposal results of and impairments on equity-accounted investees in the 2021 financial year. The loss was offset by an equal and opposite effect of this recycling in the Consolidated Statement of Other Comprehensive Income. As a result, the overall impact on equity was nil as at 30 September 2021.

Analyses of cash flows on acquisition

The cash flows generated upon acquisition are detailed in the below table:

	Initial recognition of acquisition	Amendments	After finalisation of acquisition
	USD'M	USD'M	USD'M
Cash acquired with the subsidiary	322.0	–	322.0
Cash paid to previous owners	(43.2)	–	(43.2)
Net cash flows upon acquisition	**278.8**	**–**	**278.8**

The difference between the consideration and the cash paid to previous owners is the convertible debt instrument, which is converted into equity and (deferred) amounts payable.

8. Deconsolidation of subsidiaries

There were no significant deconsolidations of subsidiaries and non-controlling interests for the financial years ended 30 September 2022 and 30 September 2021.

9. Revenue

Accounting policy

Revenue recognition

Revenue is derived principally from the sale of goods and in some instances the goods are sold on Cost and Freight (CFR) or Cost, Insurance and Freight (CIF) Incoterms. When goods are sold on a CFR or CIF basis, the Group is responsible for providing these services (shipping and insurance) to the customer, sometimes after the date at which the Group has lost control of the goods. Revenue is recognised when the performance obligations have been satisfied, which is once control of the goods and/or services has transferred from the Group to the buyer.

Revenue is measured based on consideration specified in the contract with a customer and excludes amounts collected on behalf of third parties. The same recognition and presentation principles apply to revenues arising from physical settlement of forward sale contracts that do not meet the own use exemption. Revenue related to the sale of goods is recognised when the product is delivered to the destination specified by the customer, which is typically the vessel on which it is shipped, the destination port or the customer's premises, and the buyer has gained control through their ability to direct the use of and obtain substantially all the benefits from the asset. Where the sale of goods is connected with an agreement to repurchase goods at a later date, revenue is recognised when the repurchase terms are at prevailing market prices, the goods repurchased are readily available in the market, and the buyer gained control of the goods originally sold to them. Should it be determined that control has not transferred or the buyer does not have the ability to benefit substantially from ownership of the asset, revenue is not recognised and any proceeds received are accounted for as a financing arrangement.

For certain commodities, the sales price is determined on a provisional basis at the date of sale as the final selling price is subject to movements in market prices up to the date of final pricing, normally ranging from 30 to 90 days after initial booking (provisionally priced sales). Revenue on provisionally priced sales is recognised based on the estimated fair value of the total consideration receivable. The revenue adjustment mechanism embedded within provisionally priced sales arrangements has the character of a commodity derivative. Accordingly, the fair value of the final sales price adjustment is re-estimated continuously. In all cases, fair value is estimated by reference to forward market prices.

Revenue related to the provision of shipping and insurance-related activities is recognised over time as the service is rendered.

	2022	2021
	USD'M	USD'M
Sales of goods	315,507.9	230,008.2
Rendering of services	2,968.5	1,299.9
Total	**318,476.4**	231,308.1

10. Materials, transportation and storage

Accounting policy

Materials, transportation and storage includes purchases of commodities and material, as well as the associated costs of purchasing, storing and transporting the products. It also includes the change in mark-to-market valuation of inventories, all derivatives and forward contracts.

	2022 USD'M	2021 USD'M
Energy	202,283.0	135,181.7
Metals and Minerals	100,616.4	86,874.4
Total	**302,899.4**	222,056.1

11. Employee benefits

Accounting policy

Short-term employment benefits

Wages, salaries, social security contributions, annual leave and sickness absenteeism, incentives and non-monetary benefits are recognised in the year in which the associated services are rendered by employees.

Post-employment benefits

Pensions and other post-employment benefits are accrued in the period in which the associated services are rendered by employees of the Group. The cost of providing benefits under the defined benefit plans is determined separately for each plan using the projected unit credit method. Unvested past service costs are recognised as an expense on a straight-line basis over the average period until the benefits become vested. Past service costs are recognised immediately if the benefits have already vested immediately following the introduction of, or changes to, a pension plan.

When a settlement (eliminating all obligations for benefits already accrued) or a curtailment (reducing future obligations as a result of a material reduction in the scheme membership or a reduction in future entitlement) occurs, the obligation and related plan assets are remeasured using current actuarial assumptions and the resultant gain or loss is recognised in profit or loss during the period in which the settlement or curtailment occurs.

The interest element of the defined benefit cost represents the change in present value of scheme obligations resulting from the passage of time, and is determined by applying the discount rate to the opening present value of the benefit obligation, considering material changes in the obligation during the year. The expected return on plan assets is based on an assessment made at the beginning of the year of long-term market returns on plan assets, adjusted for the effect on the fair value of plan assets of contributions received and benefits paid during the year. Actuarial gains and losses are recognised in full within other comprehensive income in the year in which they occur.

The defined benefit pension plan surplus or deficit in the Consolidated Statement of Financial Position comprises the total for each plan at the present value of the defined benefit obligation (using a discount rate based on high-quality corporate bonds), less the fair value of plan assets out of which the obligations are to be settled directly. Fair value is based on market price information and, in the case of quoted securities, is the published bid price. Contributions to defined contribution schemes are recognised in Consolidated Statement of Income in the period in which they become payable.

Employee share incentive plan and employee share trust

Employees of the Group receive remuneration in the form of shares of the immediate holding company Trafigura Beheer B.V. as consideration for services rendered. This is considered an equity settled share scheme as the Company neither has a present legal nor constructive obligation to settle in cash, nor has a past practice or stated policy of settling in cash.

The cost of the equity-settled transactions is measured at fair value at the grant date considering the terms and conditions upon which the shares were granted. This fair value is expensed over the vesting period with a corresponding credit to equity. For shares that immediately vest, the fair value is expensed in the accounting period corresponding to the date of grant.

G. Notes to consolidated financial statements

11.1 Employee benefits

	2022 USD'M	2021 USD'M
Salaries and bonuses	1,206.7	1,007.8
Social security costs	89.8	86.2
Pension costs	40.6	34.5
Subtotal	**1,337.1**	1,128.5
Share-based payments	106.8	105.2
Employee benefits	**1,443.9**	1,233.7

The average number of employees split by geography is as follows:

	2022 FTE	2021 FTE
North, Central and South America	4,917	4,152
Europe and Africa	3,912	2,446
Asia, Middle East and Australia	3,518	2,433
Total	**12,347**	9,031

11.2 Equity participation plan

The immediate parent of the Company, Trafigura Beheer B.V., has an equity participation plan (EPP) that is open to employees of the Group. Shares issued to employees are preference shares of Trafigura Beheer B.V., which give rights to economic benefits with limited voting rights. The Board of Directors of Trafigura Control Holdings Pte. Ltd., a parent company of Trafigura Beheer B.V., in consultation with the Board of Directors of the Company, decide on the share awards to be issued to employees. Annual remuneration (which includes the equity participation awards) is subject to review by the remuneration committee of the Group.

The value of the shares is based on the net asset value of an ordinary share as set out in the Articles of Association of Trafigura Beheer B.V., which management believe is a fair approximation of the fair value. Shares awarded under the EPP may vest immediately or over a period of several years.

Employees do not have the right to freely sell shares that have vested unless Trafigura Control Holdings Pte. Ltd. has granted approval and has refrained from its right to nominate a prospective purchaser and make a purchase offer. Upon termination of employment, employees must transfer all of their shares at the direction of Trafigura Control Holdings Pte. Ltd. or hold the shares subject to further directions of Trafigura Control Holdings Pte. Ltd.

Neither Trafigura Beheer B.V. nor the Group have a legal or constructive obligation to settle the shares held by employees in cash. If employment is ceased prior to the end of the vesting period the shares will be forfeited unless otherwise determined by Trafigura Control Holdings Pte. Ltd.

The Group's EPP is classified as an equity-settled plan in the Group's financial statements; the fair value of the shares granted, determined at the grant date, is recorded in the Consolidated Statement of Income rateably over the vesting period of the shares.

During the 2022 financial year, 6,384 immediately vesting shares were granted to employees representing a value of USD18.4 million (FY2021: 23,470 shares representing a value of USD23.4 million) and 17,079 shares were granted with a vesting period of one to five years representing a value of USD49.2 million (FY2021: 123,302 shares representing a value of USD122.7 million).

Compensation in respect of share-based payments recognised in staff costs for the financial year ended 30 September 2022 amounted to USD106.8 million (FY2021: USD105.2 million).

Unrecognised staff costs in respect of rateably vesting shares expected to be recognised from FY2023 to FY2026 amount to USD121.9 million at 30 September 2022 (FY2021: USD167.8 million for the period from FY2022 to FY2025).

12. Services and other

Accounting policy

Services and other expenses are recognised in the Consolidated Statement of Income when incurred.

	2022 USD'M	2021 USD'M
Energy	1,169.1	314.2
Metals and Minerals	986.5	817.2
Corporate and Other	(4.3)	(3.4)
Total	**2,151.3**	1,128.0

Services and other expenses include items such as energy costs, IT services, legal and advisory fees, insurance, commissions, foreign exchange gains and losses, and movements in provisions.

The increase in the 2022 financial year is primarily because of the first-time consolidation of the full-year income statement of Puma Energy and increasing energy prices.

Please note that the figures for the 2021 financial year in the above table have been restated to reflect the change in income statement presentation. Please refer to note 2.7.

13. Depreciation and amortisation

Accounting policy

Depreciation on property, plant and equipment

Items of property, plant and equipment are depreciated on a straight-line basis over the estimated useful lives of each component. They are depreciated from the date that they are installed and are ready for use. Land and assets under construction are not depreciated.

Depreciation of assets held under finance leases is calculated over the shorter of the lease term or the estimated useful life of the asset.

Unit of production basis

For mining properties and development assets and certain mining equipment, the economic benefits from the asset are consumed in a pattern which is linked to the production level. Such assets are depreciated on a unit of production basis. However, assets within mining operations for which production is not expected to fluctuate significantly from one year to another or which have a physical life shorter than the related mine are depreciated on a straight-line basis as noted above.

In applying the unit of production method, depreciation is normally calculated using the quantity of material extracted from the mine in the period as a percentage of the total quantity of material to be extracted in current and future periods based on proved and probable reserves and, for some mines, other mineral resources. Such non-reserve material may be included in depreciation calculations in circumstances where there is a high degree of confidence in its economic extraction.

Where parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items of property, plant and equipment.

Critical spare parts purchased for particular items of plant are capitalised and depreciated on the same basis as the plant to which they relate.

Depreciation methods, useful lives and residual values are reviewed at each reporting date and adjusted if appropriate.

Depreciation on right-of-use assets

For the accounting policies related to the amortisation of rights-of-use assets recognised in relation to the leases of the Group, please refer to note 21.

Amortisation of intangible fixed assets

Intangible fixed assets with finite life are amortised over their useful economic life and assessed for impairment whenever there is an indication that the intangible fixed asset may be impaired. The amortisation period and the amortisation method for an intangible fixed asset with a finite useful life are reviewed at least at each reporting date. Changes in the expected useful life or the expected pattern of consumption of future economic benefits embodied in the asset are accounted for by changing the amortisation period or method, as appropriate, and treated as changes in the accounting estimates.

Key accounting estimate and judgement

Useful life and residual value of property, plant and equipment

The useful life and residual value determined by the Group based on estimates and assumptions have a major impact on the measurement and determination of results of property, plant and equipment. The useful life of property, plant and equipment is partly estimated based on their useful productive lives, experiences related to such assets, the maintenance history and the period during which the Group has the economic benefits from the utilisation of the assets. Periodic reviews show whether changes have occurred in estimates and assumptions as a result of which the useful life and/or residual value need to be adjusted. Such an adjustment will be made prospectively.

The estimated useful lives for the current and comparative years of significant items of property, plant and equipment are as follows:

- Buildings 20–50 years
- Machinery and equipment 3–50 years
- Barges and vessels 10–20 years
- Other fixed assets 1–10 years

	2022 USD'M	2021 USD'M
Depreciation of right-of-use assets	1,216.3	1,094.7
Depreciation of property, plant and equipment	466.2	312.8
Amortisation of intangible fixed assets	118.0	48.5
Total	**1,800.5**	1,456.0

For further details on the composition of depreciation and amortisation (per category), please refer to notes 19, 20, and 21.

G. Notes to consolidated financial statements

14. Impairments

Accounting policy

Impairments on non-financial assets

Investments in associates and other investments, property, plant and equipment and intangible fixed assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable or at least annually for goodwill. If it is determined that assets are impaired, the carrying amounts of those assets are written down to their recoverable amount, which is the higher of fair value less costs of disposal and value in use.

Impairments on (non-derivative) financial assets and prepayments

The Group assesses the expected credit losses associated with its debt instruments, prepayments and trade receivables carried at amortised cost and fair value through other comprehensive income. The impairment provisions for financial assets and prepayments (disclosed below and in note 23) are based on assumptions about risk of default and expected loss rates.

Loans receivable and prepayments

Over the term of the loans and the prepayments, the Group manages its credit risk by appropriately providing for expected credit losses on a timely basis. The Group classifies its loans receivable and prepayments in categories that reflect their credit risk as follows:

Category	Group definition of category	Basis for recognition of expected credit loss provision
Performing	Customers have a low risk of default and a strong capacity to meet contractual cash flows	12 months expected loss. Where the expected lifetime of an asset is less than 12 months, expected losses are measured at its expected lifetime
Underperforming	A significant increase in credit risk is noted (see definition below)	Lifetime expected losses
Non-performing	The loan meets the definition of default (see below)	Lifetime expected losses
Write-off	Based on observable data the interest and/or principal will not be collected	Asset is written off through profit or loss to extent of expected loss

A significant increase in credit risk is presumed if interest and/or principal repayments are 30 days past due or if there are other indicators of a significant increase in the probability of default. A default is defined when a counterparty structurally fails to perform under a financial contract with a Trafigura Group company and such failure is not expected to be cured shortly.

The Group assesses the expected credit loss of these loans and prepayments individually based on the discounted product of probability of default (PD), exposure at default (EAD) and loss given default (LGD) as defined below:

- PD represents the likelihood of a borrower defaulting on its financial obligation, either over the next 12 months or over the remaining lifetime of the obligation.
- EAD is based on the amounts the Group expects to be owed at the time of default. For most cases, this represents the carrying amount of the financial asset.
- LGD represents the Group's expectation of the extent of loss on a defaulted exposure. LGD varies by type of counterparty, seniority of claim and available collateral or other credit support. LGD is expressed as a percentage loss per unit of exposure at the time of default.

The expected credit loss is determined by projecting PD, LGD, EAD for each future month and for each exposure. These three components are multiplied together and discounted at the original effective interest rate of the loan and the prepayment. The PD and LGD are developed by utilising historical default studies, forward-looking information and publicly available data.

Trade receivables

The Group applies the simplified approach to providing for expected credit losses, which permits the use of the lifetime expected loss provision for all trade receivables.

Impairment reversal

Impairments, except those related to goodwill, are reversed as applicable to the extent that the events or circumstances that triggered the original impairment have changed.

Write-off

The Group reduces the gross carrying amount of a financial asset when there is no reasonable expectation of recovering a financial asset in its entirety or a portion thereof. A write-off constitutes a derecognition event.

Key accounting estimate and judgement

Impairments on non-financial assets

An asset is impaired when its carrying amount exceeds its recoverable amount. When performing an impairment test, the Group assesses whether the cash-generating unit will be able to generate positive net cash flows that are sufficient to support the value of the intangible fixed assets, property, plant and equipment, and financial assets.

For value in use, future cash flow estimates are used to calculate the asset's fair value. These estimates are based on expectations about future operations, primarily comprising estimates about production and sales volumes; commodity prices; operating, rehabilitation and restoration costs; and capital expenditures. Changes in such estimates could impact the recoverable values of these assets. Estimates are reviewed regularly by management.

Value-in-use is determined as the amount of estimated risk-adjusted discounted future cash flows. For this purpose, assets are grouped into Cash-Generating Units (CGUs) based on separately identifiable and largely independent cash flows. The most recent approved financial budgets and (five-year) business plans are the basis for the future cash flow estimates. The valuation model uses the most recent volume and revenue estimates, relevant costs assumptions based on past experience and, where possible, market forecasts of commodity prices. This methodology inherently includes elements of judgement and estimations in relation to projected sales volumes and unit margins. Deterioration or improvement in the volume and pricing outlook may result in additional impairments or reversals. Cash flow estimates are risk adjusted and discounted to reflect local conditions as appropriate.

These key assumptions are based on the current facts and circumstances and information available to management. By nature, these assumptions are subject to developments and change in later periods. This could potentially lead to (reversal of) impairments of individual assets going forward.

Impairments on (non-derivative) financial assets

Loans receivable and prepayments

The Group considers the probability of default upon initial recognition of an asset and whether there has been a significant increase in credit risk on an ongoing basis throughout each reporting period. To assess whether there is a significant increase in credit risk, the Group compares the risk of a default occurring on the asset as at the reporting date with the risk of default as at the date of initial recognition. It considers available reasonable and supportive forwarding-looking information. The following indicators in particular are incorporated: internal credit rating, external credit rating (as far as available), significant changes in the value of the collateral supporting the obligation, significant changes in the expected performance and behaviour of the borrower including changes in the payment status of borrowers in the group and changes in the operating results of the borrower.

Macroeconomic information (such as market interest rates or growth rates) is incorporated as part of the internal rating model.

Trade receivables

In calculating the expected credit loss rates for trade receivables, the Group considers historical loss rates for each category of counterparties and adjusts for macroeconomic information (such as market interest rates or growth rates).

	2022 USD'M	2021 USD'M
Impairments of property, plant and equipment	424.5	423.8
Impairments of right-of-use assets	20.7	158.0
Impairments of intangible fixed assets	90.7	103.7
Impairments of fixed assets	**535.9**	685.5
Impairments of financial assets	80.1	19.2
(Reversal of) Impairments of prepayments	23.2	(22.1)
(Reversal of) Impairments of financial assets and prepayments	**103.3**	(2.9)
Total impairments – included in operating profit or loss	**639.2**	682.6
Impairments of equity-accounted investees	34.9	26.3
Impairments of equity-accounted investees	**34.9**	26.3
Total impairments	**674.1**	708.9

As a result of the periodic assessment, the following significant impairment charges and fair value adjustments were recorded:

14.1 Financial year 2022

14.1.1 Impairments of fixed assets

Puma Energy (property, plant and equipment, and intangible fixed assets including goodwill)

The acquisition of Puma Energy resulted in the recognition of a goodwill balance of USD1,074.1 million (refer to note 7). This goodwill was allocated to the individual countries and businesses that, based on the integration of the activities, were considered separate CGUs. The total number of CGUs identified was 25 and the goodwill acquired was allocated to 13 CGUs.

The impairment testing procedures resulted in a total impairment of USD190.8 million, out of which USD87.8 million was allocated to goodwill (four CGUs), USD100.8 million to property, plant and equipment (PP&E) and USD2.2 million to intangible fixed assets. The largest impairments were recognised in relation to the operations in Papua New Guinea (USD61.6 million on PP&E) and El Salvador (USD52.7 million on goodwill). The impairment in Papua New Guinea was mostly driven by a strategic reorientation of the country's business model. The decrease in value in El Salvador was driven by the performance of the business compared to the assumptions made at the time of the acquisition.

The recoverable amounts of the net assets tested are determined based on a value-in-use calculation. This method uses cash flow projections based on financial budgets approved by the Board of Directors covering a five-year period. The unweighted average of the pre-tax discount rates applied for the 13 CGUs to which goodwill was allocated is 14.1 percent per annum. The discount rates of the 13 CGUs are within a range between 8.6 percent and 19.8 percent.

The key assumptions used in the value-in-use calculations relate to EBITDA, growth rates and the discount rate. Discount rates represent the current market assessment of the risks specific to each CGU, regarding the time value of money and individual risks of the underlying assets that have not been incorporated in the cash flow estimates. The discount rate calculation is based on the specific circumstances of the Group and its operating segments and derived from its weighted average cost of capital.

G. Notes to consolidated financial statements

An increase of the discount rate by 0.5 percentage points would result in:

- An increase in goodwill impairment by USD10.2 million to a total of USD97.9 million. Such increase would affect the same four CGUs for which the current impairment is recognised;
- An increase in the impairment on PP&E by USD31.0 million to a total of USD131.8 million. Such increase would affect the same six CGUs for which the current impairment is recognised.

A decrease of the discount rate by 0.5 percentage points would result in:

- A decrease in goodwill impairment by USD11.0 million to a total of USD76.7 million. Such decrease would affect the same four CGUs for which the current impairment is recognised;
- A decrease in the impairment on PP&E by USD29.7 million to a total of USD71.1 million. Under this scenario the number of CGUs affected by the impairment is reduced from six to five.

Australian smelting operations (Nyrstar) (property, plant and equipment)

The Australian smelting operations of the Group include a zinc smelter in Tasmania and an integrated multi-metals recovery plant in Port Pirie. There is a symbiosis between the two industrial facilities, whereby cross-facility optimisation is done to maximise value recovery (e.g. exchange of intermediate products for onward processing) and to minimise waste of the combined operations. Given the significant operational and managerial integration between the sites, the Australian smelting operations are treated as one CGU for impairment testing purposes.

Although the continuing efforts to improve the operational stability of the operations resulted in an improvement to operational performance towards the end of the 2022 financial year, the processed feedstock and production of metals remained below planned levels. Whilst management expect the performance to steadily improve in the short term following an extensive turnaround programme and continued capital expenditures, the operational challenges were considered as an indication for potential impairment. The recoverable amount of the CGU was determined based on value-in-use calculations using real cash flow projections from approved financial budgets and consumption/production plans covering a five-year period. The pre-tax discount rate used in estimating the value-in-use is 11.2 percent.

The current performance and renewed business outlooks resulted in a downward adjustment to the expected feedstock processing and production level for the coming years. Combined with increased operating costs and an increase in the expected required capital expenditures, this has resulted in a decrease in the CGU's recoverable amount when compared to the previous financial year. As the carrying value of the underlying business significantly exceeded the estimated recoverable amount of the CGU, the Group recognised an impairment of USD177.1 million. This amount is allocated to tangible fixed assets.

The key assumptions used in the calculation of the value-in-use mostly relate to the discount rate and macro assumptions. The sensitivity analyses on the value-in-use calculation show that an increase/decrease in the discount rate of +/-0.5 percentage points has an impact on the recoverable amount of minus USD45 million/plus USD50 million. Sensitivities from changes in other key assumptions are as follows:

- A change in metal prices by 5 percent affect the recoverable amount by USD244 million in each case;
- A change in treatment charges by 5 percent affect the recoverable amount by USD117 million; and
- An increase/decrease in the AUD/USD foreign exchange rate by 5 percent has an impact on the recoverable amount of minus USD265 million/plus USD286 million.

Magdalena River supply chain operation (property, plant and equipment)

The Group operates a multimodal supply chain operation in Colombia, which includes an inland port at Barrancabermeja and a barging operation providing multimodal logistics services linking the industrial heartland to the Atlantic ports of Cartagena and Barranquilla via the Magdalena River. The prospects of this operation are partly dependent on the activities of the Government of Colombia to improve the longer-term navigability of the Magdalena River.

During 2020 and 2021, the Colombian authorities launched another tender process with regard to the dredging and diking of the Magdalena River. In June 2022, the tender was declared void after no bids had been received. Meanwhile, the newly elected government (August 2022) has reconfirmed the importance of dredging the river and civil works to canalise the river are expected to be announced in the short-term future. The delay in the dredging and diking programme of the Magdalena River has been a trigger for impairment of the Group's fixed assets in Colombia that form part of the supply chain operation requiring an impairment test to be performed.

For impairment testing purposes, the Colombian multimodal supply chain business is treated as one CGU because the specific assets that form part of this business typically do not generate independent cash flows. The value-in-use calculation includes all aspects of the Colombian supply chain business. A key assumption in the value-in-use calculation is that the commencement of the dredging activities is expected to happen in 2027 with the river draft gradually improving to 7.0 feet by 2029 and the business reaching maturity in 2031. This translates to a gradual ramp-up of expected revenues as well as operating costs with no growth after 2031. Based on the projections until 2044, which correspond to the current end of the port concession and do not include an expected extension, the estimated recoverable amount of the CGU is USD395 million. As a result, the Colombian assets were impaired by USD75 million.

The operation specific pre-tax discount rate in the valuation was 7.1 percent. A further delay in the restoration of the navigability of the Magdalena River may result in additional impairment. In the event that, as a result of a further delay of the dredging activities, maturity is reached one or two years later than currently assumed, this has a negative impact on the recoverable amount of USD40 million and USD78 million respectively.

Further, the sensitivity analyses on the value-in-use calculation show that an increase/decrease in the discount rate of +/-0.5 percentage points has an impact on the recoverable amount of minus USD24 million/plus USD25 million. A change in the oil and container volumes handled by the operation of +/- 10 percent and also a change in the oil and container prices of +/- 10 percent leads to a change of USD55 million to the recoverable amount in each case.

14.1.2 Impairments of financial assets and prepayments

Please refer to note 23.1 for the loss provision on prepayments, note 23.2 for the loss provision on loans receivable and note 26 for the loss provision on trade receivables.

14.2 Financial year 2021

14.2.1 Impairments of fixed assets – Property, plant and equipment

Australian smelting operations (Nyrstar)

During the 2021 financial year, the Group recognised an impairment totalling USD125.0 million in relation to Nyrstar's Australian smelting operations. The impairment is allocated to the goodwill balance related to the Australian operations for USD14.1 million and to the tangible fixed assets for USD110.9 million. Further information related to this impairment is disclosed in note 14.2.3.

Burnside logistics export terminal

Oil and oil product demand destruction, largely a result of the COVID-19 global pandemic, coupled with the continued suppression of coal export opportunities, has limited near-term opportunities for bulk export, resulting in a trigger to perform an impairment test for the Burnside logistics export terminal on the Mississippi River in Louisiana, US.

The identifiable assets were combined into one CGU with independent cash flows to assess the potential impairment. The value-in-use calculation includes projections over the period FY2021 up to and including FY2025, and results in an estimated recoverable amount of USD36 million. Consequently, the related operational fixed assets were impaired by USD55 million. The resulting carrying value is supported by the underlying valuation of the land.

Burgos naphtha splitter

The Group is currently engaged in the engineering and construction of a heavy naphtha splitter in northern Mexico. The project has encountered several construction delays, with the budget increasing as a result of these delays. Additionally, regional condensate production levels and changes in the regulatory environment have created additional risk and uncertainty. These indicators have resulted in a trigger to perform an impairment test.

A value-in-use calculation was performed to determine the recoverable amount of the CGU relative to the carrying value of the fixed assets. The value-in-use is calculated based upon the discounted cash flows associated with the CGU using management projections and a discount rate specific to the projected cash flows. Based on the projected discounted cash flows, the recoverable amount was determined to be less than the carrying amount of the fixed assets resulting in an impairment.

14.2.2 Impairments of fixed assets – Rights-of-use assets

Corpus Christi

The Group has certain rights-of-use assets located in Corpus Christi, Texas, that enable the transportation, storing, processing and vessel loading of crude oil and crude oil products. As the demand for crude oil (products) did not fully recover to pre-COVID-19 levels, this resulted in a trigger to perform an impairment test.

To assess a potential impairment, these rights-of-use assets were determined to be a single CGU. A value-in-use is calculated based upon the discounted cash flows associated with the CGU using management projections and a discount rate specific to the projected cash flows. Based on the projected discounted cash flows, the recoverable amount of USD82.5 million was determined to be less than the carrying amount of the rights-of-use assets by USD158 million, which was recorded as an impairment.

14.2.3 Impairments of fixed assets – Intangible fixed assets

Puma Energy

Upon obtaining control, the Group concluded that as a result of Puma Energy's financial condition the consideration paid in the transactions was not the most suitable basis to determine the fair value of the acquiree. It based its measurement on a fair value measurement, where the value-in-use balance was determined using cash flows and discount rates reflecting specific geographical regions and operations (downstream, infrastructure, bitumen, etc.) in which Puma Energy operates over the projection period FY2022 up to and including FY2026. As a result, management concluded a day 1 impairment of USD88.4 million was required to reduce its Puma Energy related goodwill balance to an amount of USD993.1 million (provisional recorded before business combination remeasurement). Please refer to notes 7 and 20.

Nyrstar

The acquisition of the Nyrstar Group in the 2019 financial year resulted in the recognition of a goodwill balance totalling USD64.3 million. The group performs a goodwill impairment test on an annual basis. For impairment testing purposes, the carrying amount of goodwill is allocated to three CGUs.

For the 2021 financial year, the recoverable amount of the CGUs was determined based on value-in-use calculations using nominal cash flow projections from approved financial budgets and consumption/production plans covering a five-year period.

During the 2021 financial year, the Australian smelting operations continued to face operating challenges resulting in a reduction in processed feedstock compared to the planned levels. Although management expects the performance to improve over the coming years, the operating challenges in the current financial year led to a downward adjustment of expected feedstock processing levels in the coming years. These lower volume projections resulted in a recoverable amount that was significantly lower than the combined carrying value of goodwill and other fixed assets. The total impairment charge recognised during the year amounted to USD125.0 million, which is allocated to the goodwill balance of the CGU (USD14.1 million) and the tangible fixed assets (USD110.9 million).

The recoverable amounts for the European and US CGUs significantly exceeded the recorded goodwill balance and as a result, no impairment has been recognised for these CGUs.

G. Notes to consolidated financial statements

15. Result from equity-accounted investees and investments

Accounting policy

Gains on the sale of assets and the divestment of interests in other entities are deemed realised at the time the benefits and the risks of the assets are substantially borne by the buyer and there is no uncertainty as to whether the agreed payment will be received. Gains on the sale of subsidiaries, joint ventures and associates are realised at the time control, joint-control or significant influence is no longer exercised.

Dividend income from investments is recognised when the shareholder's right to receive payment has been established (provided that it is probable that the economic benefits will flow to the Group and the amount of income can be measured reliably).

	2022 USD'M	2021 USD'M
Share of profit/(loss) of equity-accounted investees	**54.2**	(110.8)
Disposal results of equity-accounted investees	(16.7)	(414.0)
Impairments of equity-accounted investees	(34.9)	(26.3)
Disposal results and impairments of equity-accounted investees	**(51.6)**	(440.3)
Income/(expenses) from equity-accounted investees	**2.6**	(551.1)
Gain/(loss) on fair value through profit and loss instruments	(41.5)	87.0
Gain/ (loss) on divestment of subsidiaries	(7.5)	–
Dividend income	4.7	1.5
Income/(expenses) from investments	**(44.3)**	88.5
Result from equity-accounted investees and investments	**(41.7)**	(462.6)

15.1 Income/(expenses) from equity-accounted investees

15.1.1 Share of profit/(loss) of equity-accounted investees

Please refer to note 22.

15.1.2 Disposal results of equity-accounted investees

Puma Energy (financial year 2021)

The disposal result on equity-accounted investees in the 2021 financial year includes the recycling loss of the foreign currency translation balance relating to the previously held equity-accounted investment in Puma Energy (USD716.0 million), and the fair value remeasurement loss on this investment (USD79.7 million).

For more details, please refer to note 7.1.

Minas de Aguas Tenidas SA (MATSA) (financial year 2021)

In September 2021, the Group sold its 50 percent stake in Minas de Aguas Tenidas SA (MATSA) to Sandfire Resources Limited for a total expected consideration of USD777.8 million, comprising a headline selling price of USD932.5 million less expected net debt and working capital adjustments of USD153.7 million. The sale was agreed in partnership with the Group's former joint venture partner, Mubadala Investment Company PJSC, which received received the same corresponding consideration, making Sandfire Spain Holdings Limited the new sole owner of MATSA.

The sale and purchase agreement dated 23 September 2021 ensured that the departing shareholders had, during the period between signing and completion, limited ability to impact the operational and strategic policies of MATSA through their representation in the Board. During this period, MATSA operated on a basis of limited self-governance with full autonomy over the decisions acting on their ordinary course of business on a day-to-day basis. The departing shareholders therefore no longer had the power, directly or indirectly, to govern the financial and operational activities of MATSA. Decisions of a more strategic nature were deferred until post completion. Completion of the transaction occurred upon receipt of the anti-trust approval in the first half of the 2022 financial year. As such, the Group has derecognised the equity-accounted investee and recognised the gain on disposal as at 30 September 2021.

The pre-tax profit on disposal of USD380.5 million is reported in the 2021 financial year within the Consolidated Statement of Income under disposal results and impairments of equity-accounted investees, with USD10 million of related transaction taxes and fees recognised through services and other expenses.

This consideration, less the initial USD50 million deposit having been received in escrow, has been recognised as a receivable within Other debtors in Trade and other receivables in the Consolidated Statement of Financial Position as at 30 September 2021, and has been settled during the 2022 financial year. Please refer to note 26.

15.1.3 Impairments of equity-accounted investees

Please refer to note 14.

15.2 Income/(expenses) from investments

15.2.1 Gain/(loss) on fair value through profit and loss instruments

The loss on fair value through profit and loss instruments includes various fair value movements on other investments, including a USD44.1 million negative fair value movement of the debt securities related to the investment in Porto Sudeste (FY2021: a gain of USD25.6 million).

The listed debt securities consist of a financial instrument related to the investment in Porto Sudeste, which is accounted for under equity-accounted investees. These instruments are held to collect cash flows and are designated as fair value through profit and loss, since the payments are dependent on the port's throughput. Since the free float of these listed debt instruments is extremely thin and no active market exists (the value of the average daily traded volume was less than USD1,000), the fair value is determined using a level 3 valuation. The fair value of this instrument is based on the port's discounted cash flow model in which the business plan of Porto Sudeste is reflected. Revenue is calculated over a period ending in 2064 and throughput volumes are held constant from end of 2029 onwards. In this calculation, management used an annual discount rate of 14.2 percent (FY2021: 12.7 percent) to calculate a net present value. As a result of the limited marketability of the listed securities, a further flat discount factor of 33 percent is applied on the net present value amount (FY2021: 33 percent).

During the year, the level 3 valuation of the debt securities resulted in the recognition of a loss of USD44.1 million (FY2021: gain of USD25.6 million), decreasing the valuation of the debt securities to USD202.8 million as at 30 September 2022 (30 September 2021: USD246.8 million). The debt securities are treated as being part of the net investment in Porto Sudeste. In accordance with IAS28, subsequent to the equity-accounted investee being recorded at nil value, the Group's share in Porto Sudeste's losses have been recorded as reduction in the value of the debt securities.

The sensitivity analysis on this valuation shows that an increase/decrease of the port's throughput of 5 percent has an impact of USD20 million (FY2021: USD8 million) on the valuation, and an increase/decrease of the discount rate by 0.5 percentage points or 50 bps has an impact of USD13 million (FY2021: USD15 million) on the valuation. A change in the discount rate due to lack of marketability by 5 percentage points or 500 bps has an effect of USD20 million (FY2021: USD18 million) on the valuation.

16. Result from financing activities

Accounting policy

Interest income and interest expense are recognised on a time-proportion basis using the effective interest rate (EIR) method.

	2022 USD'M	2021 USD'M
Finance income	739.6	405.9
Finance expense	(2,280.5)	(1,252.3)
Total	**(1,540.9)**	(846.4)

The increase in the result from financing activities is primarily because of rising base rates throughout the year, together with a higher average utilisation of credit lines.

17. Income tax

Accounting policy

Income tax expense comprises current and deferred tax. Current and deferred tax are recognised in the Consolidated Statement of Income except to the extent that it relates to a business combination, or items recognised directly in equity or in other comprehensive income.

Current income tax

Current income tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to tax payable in respect of previous years. The charge for taxation includes Singaporean and foreign corporate income taxation. Due to the different statutory rates applicable and non-deductible expenses, the Group effective tax charge differs from the statutory tax rate applicable in Singapore.

Deferred tax

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes, and the amounts used for taxation purposes. The measurement of deferred tax reflects the tax consequences that would follow the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Deferred tax is measured at the tax rates that are expected to be applied to temporary differences when they reverse, using tax rates enacted or substantively enacted at the reporting date.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis, or their tax assets and liabilities will be realised simultaneously.

A deferred tax asset is recognised for unused tax losses, tax credits and deductible temporary differences to the extent that it is probable that future taxable profits will be available against which they can be utilised. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

Tax exposure

In determining the amount of current and deferred tax the Group takes into account the impact of uncertain tax positions and whether additional taxes and interest may be due. The Group believes that its accruals for tax liabilities are adequate for all open tax years based on its assessment of many factors, including interpretations of tax law and prior experience. This assessment relies on estimates and assumptions and may involve a series of judgements about future events. New information may become available that causes the Group to change its judgement regarding the adequacy of existing tax liabilities; such changes to tax liabilities will impact the tax expense in the period that such a determination is made.

G. Notes to consolidated financial statements

Key accounting estimate and judgement

Deferred tax assets are recognised only to the extent it is considered probable that those assets will be recoverable. This involves an assessment of when those deferred tax assets are likely to reverse, and a judgement as to whether or not there will be sufficient taxable profits available to offset the tax assets when they do reverse. These judgements are subject to risk and uncertainty and hence, to the extent assumptions regarding future profitability change, there can be an increase or decrease in the amounts recognised in the Consolidated Statement of Income in the period in which the change occurs. The recoverability of deferred tax assets, including the estimates and assumptions contained therein, are reviewed regularly by management.

17.1 Tax expense

Income tax expense recognised in the Consolidated Statement of Income consists of the following:

	2022 USD'M	2021 USD'M
Current income tax expense	994.2	692.8
Adjustments in relation to current income tax of previous year	(73.6)	(88.2)
Deferred tax expense/(income)	1.3	(240.9)
Withholding tax in the current year	11.4	4.3
Total	**933.3**	368.0

17.2 Tax recognised in other comprehensive income

The tax credit/(charge) relating to components of other comprehensive income is as follows:

	2022 USD'M	2021 USD'M
Tax (expense)/income on cash flow hedges	(70.7)	8.7
Total	**(70.7)**	8.7

17.3 Reconciliation of effective tax rate

The Group's operations are subject to income taxes in various foreign jurisdictions. The statutory income tax rates vary between 10 percent and 35 percent, which results in a difference between the weighted average statutory income tax rate and Singapore's statutory tax rate of 17 percent (FY2021: 17 percent).

The change to the statutory blended tax rate is a consequence of a change in the mix of profits and losses generated in the various countries in which the Group operates. The change to the effective tax rate is a consequence of a change in the mix of taxable profits and losses generated in the various countries in which the Group operates.

The reconciliation between tax expense and the result of accounting profit multiplied by the Company's statutory income tax rate for the years ended 30 September 2022 and 2021 is as follows:

	2022 USD'M	2022 %	2021 USD'M	2021 %
Profit before tax	7,959.5		3,442.7	
Income tax expense at statutory blended tax rate	1,516.5	19.1%	516.7	15.0%
Tax effect of adjustments to arrive at the effective income tax rate:				
Effect of unused tax losses, not recognised as deferred tax assets	43.2		47.0	
Non-taxable income or subject to specific tax holidays	(593.6)		(205.6)	
Non-deductible expenses	25.2		103.2	
Foreign exchange	–		(9.2)	
Adjustments in relation to income tax of previous year	(73.6)		(88.2)	
Tax rate changes	4.0		(0.2)	
Withholding tax	11.6		4.3	
Effective tax rate	**933.3**	**11.7%**	368.0	10.7%

17.4 Deferred tax assets and liabilities

The breakdown of deferred tax assets and liabilities in significant components as well as the movement between 1 October 2021 and 30 September 2022 of these components is as follows:

USD'M	Opening balance	Recognised in Consolidated Statement of Income	Other comprehensive income	FX and other	Closing balance	Deferred tax assets	Deferred tax (liabilities)
Property, plant and equipment	(204.0)	61.2	–	(0.6)	**(143.4)**	130.5	(273.9)
Investment in subsidiaries & associates	2.5	–	–	–	**2.5**	2.5	–
Other temporary differences (including intangible assets)	(14.3)	8.5	(55.1)	42.1	**(18.8)**	90.9	(109.7)
Provisions	11.9	(29.8)	–	(7.2)	**(25.1)**	18.6	(43.7)
Derivatives	30.2	(50.7)	(15.6)	(0.8)	**(36.9)**	54.1	(91.0)
Tax losses carried forward and tax attributes	44.5	9.5	–	(2.3)	**51.7**	52.9	(1.2)
Total deferred tax position	(129.2)	(1.3)	(70.7)	31.2	**(170.0)**	**349.5**	**(519.5)**
Set-off deferred tax positions						(139.1)	139.1
Net deferred tax position						**210.4**	**(380.4)**

Deferred tax assets are recognised for temporary differences and unused tax losses to the extent that realisation is probable as sufficient taxable profit is expected in the countries where the deferred tax assets are originated. The majority of the reported deferred taxes will be settled after 12 months from the balance sheet date.

No significant deferred tax liability has been recognised in respect of undistributed earnings of subsidiaries. This is because the Group is able to control the timing of the reversal of the temporary differences and it is probable that such differences will not reverse in the foreseeable future.

Unrecognised tax losses carry forward and tax attributes	2022 USD'M
Losses expiring in 2023	80.2
Losses expiring in 2024	78.6
Losses expiring in 2025	99.0
Losses expiring in 2026	501.6
Losses expiring in 2027	9.3
Losses expiring in 2028	15.6
Losses expiring in 2029	26.6
Losses expiring after 2029	1,147.3
Losses that do not expire	819.6
Total	**2,777.8**

Unrecognised tax losses carry forward and tax attributes	2021 USD'M
Losses expiring in 2022	56.3
Losses expiring in 2023	47.2
Losses expiring in 2024	46.6
Losses expiring in 2025	212.0
Losses expiring in 2026	533.3
Losses expiring in 2027	0.5
Losses expiring in 2028	37.5
Losses expiring after 2028	1,207.7
Losses that do not expire	1,026.5
Total	**3,167.6**

At 30 September 2022, the amount of deductible temporary differences for which no deferred tax asset has been recognised in the balance sheet is USD1,123 million (2021: USD780 million).

The unrecognised deferred tax assets for losses and tax attributes relate to entities for which it is not probable that taxable profit will be available to offset against these losses and attributes.

17.5 Tax uncertainties

The Group operates in numerous jurisdictions worldwide resulting in cross border intercompany transactions whereby the transfer pricing rules applied in one country have an impact on the results in another country. In order to reduce transfer pricing uncertainties, transfer pricing studies are performed and reports are prepared to fulfil local transfer pricing requirements. Because of the complexity of tax rules, interpretation by local taxing authorities can differ from the Group's interpretation based on opinions provided by local tax counsel. The Group believes that it has sufficiently provided for financial consequences (if any).

In countries where the Group starts new operations or alters business models, the issue of permanent establishment and profit allocation thereto may arise. The risk is that taxing authorities in multiple jurisdictions claim taxation rights over the same profit.

18. Underlying EBITDA

Accounting policy

The Group believes that the supplemental presentation of underlying EBITDA provides useful information on the Group's financial performance, its ability to service debt and its ability to fund capital expenditures as well as providing a helpful measure for comparing its operating performance with that of other companies.

Underlying EBITDA, when used by Trafigura, means operating profit or loss before depreciation and amortisation excluding share-based payments and other adjustments. In addition to share-based payments, the adjustments made to arrive at underlying EBITDA are considered exceptional and/or non-operational from a management perspective based on their size or nature. They can be either favourable or unfavourable. These items include for example:

- Significant restructuring costs and other associated costs arising from significant strategy changes that are not considered by the Group to be part of the normal operating costs of the business;
- Significant acquisition and similar costs related to business combinations such as transaction costs;
- Provisions that are considered to be exceptional and/or non-operational in nature and/or size to the financial performance of the business; and
- Various legal settlements that are significant to the result of the Group.

From time to time, it may be appropriate to disclose further items as exceptional or non-operational items in order to reflect the underlying performance of the Group.

Underlying EBITDA is not a defined term under IFRS and may therefore not be comparable with similarly titled profit measures and disclosures reported by other companies. It is not intended to be a substitute for, or superior to, GAAP measures.

	2022 USD'M	2021 USD'M
Operating profit or (loss) before depreciation and amortisation	**11,981.8**	6,890.3
Adjustments		
Share-based payments	106.8	105.2
Adjustments	**106.8**	105.2
Underlying EBITDA	**12,088.6**	6,995.5
As percentage of revenue	3.8%	3.0%

Share-based payments have been excluded because of their non-cash nature. Please refer to note 11 for more details. There were no non-recurring adjustments during the financial years ending 30 September 2022 and 2021.

G. Notes to consolidated financial statements

19. Property, plant and equipment

Accounting policy

Recognition and measurement

Property, plant and equipment are measured at cost less accumulated depreciation and accumulated impairment losses. The initial cost of an asset comprises its purchase price or construction cost, any costs directly attributable to bringing the asset into operation, the initial estimate of any decommissioning obligation, if any, and, for qualifying assets, borrowing costs. The purchase price or construction cost is the aggregate amount paid and the fair value of any other consideration given to acquire the asset.

When parts of an item of property, plant and equipment have different useful lives, they are accounted for as separate items (major components). The costs of major repairs and maintenance (dry-docking or turnarounds) are capitalised and depreciated over their useful life.

Gains or losses on disposal of an item of property, plant and equipment are recorded in the Consolidated Statement of Income in services and other expenses.

The carrying amount of property, plant and equipment is reviewed for impairment whenever events or changes in circumstances indicate the carrying amount may not be recoverable.

Assets in the course of construction are capitalised as a separate component of property, plant and equipment, included within other fixed assets. Upon completion, the cost of construction is transferred to the appropriate category.

Mineral properties and mine development costs

The costs of acquiring mineral reserves and mineral resources are capitalised in the Consolidated Statement of Financial Position as incurred. Capitalised costs representing mine development costs include costs incurred to bring the mining assets to a condition of being capable of operating as intended by management. Mineral reserves and in some instances mineral resources and capitalised mine development costs are depreciated from the commencement of production using, generally, the unit of production basis. They are written off if the property is abandoned.

Exploration and evaluation assets

Exploration and evaluation expenditure relate to costs incurred in the exploration and evaluation of potential mineral reserves and resources, and includes costs such as exploratory drilling and sample testing and the costs of pre-feasibility studies. Exploration and evaluation expenditure for each area of interest, other than that acquired from the purchase of another mining company, is capitalised as an asset provided that one of the following conditions is met:

- Such costs are expected to be recouped in full through successful development and exploration of the area of interest or alternatively, by its sale; or
- Capitalised exploration and evaluation assets are transferred to mine development assets once the work completed to date supports the future development of the property and such development receives appropriate approvals.

Acquired mineral rights comprise identifiable exploration and evaluation assets, including mineral reserves and mineral resources, which are acquired as part of a business combination and are recognised at fair value at the date of acquisition. The acquired mineral rights are reclassified as "mineral properties and mine development costs" from commencement of development and depreciated on a unit of production basis, when commercial production commences.

Subsequent costs

Subsequent expenditure is capitalised only when it is probable that the future economic benefits associated with the expenditure will flow to the Group.

Major cyclical maintenance expenditure

Group entities recognise in the carrying amount of an item of plant and equipment, the incremental cost of replacing a component part of such an item when that cost is incurred if it is probable that the future economic benefits embodied within the item will flow to the Group entity, the cost incurred is significant in relation to the asset and the cost of the item can be measured reliably. Accordingly, major overhaul expenditure is capitalised and depreciated over the period in which benefits are expected to arise (typically three to four years). Any remaining book value of a maintenance component of property, plant and equipment to which the major maintenance is applied is derecognised at that point in time. All other repairs and maintenance are charged to the Consolidated Statement of Income during the financial period in which the costs are incurred.

Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets (i.e. assets that necessarily take a substantial period of time to get ready for their intended use or sale) are calculated using the EIR method and are capitalised as part of the cost of those assets. The capitalisation of such borrowing costs ceases when the assets are substantially ready for their intended use or sale. Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs capitalised.

All other borrowing costs are expensed in the period in which they are incurred. Borrowing costs consist of interest and other costs that an entity incurs directly in connection with the borrowing of funds.

USD'M	Land and buildings	Machinery and equipment	Barges and vessels	Mine property and development	Other fixed assets	Total
Cost						
Balance at 1 October 2021	2,271.8	3,079.7	619.5	64.6	1,038.8	**7,074.4**
Additions	25.5	86.5	385.7	16.7	517.2	1,031.6
Reclassifications	241.4	324.1	44.9	35.5	(268.6)	377.3
Effect of movements in exchange rates, including hyperinflation adjustment	(117.8)	(203.7)	(1.1)	(3.2)	(38.8)	(364.6)
Disposals	(59.3)	(73.7)	(336.5)	–	(11.4)	(480.9)
Divestment of subsidiaries	(106.8)	(72.8)	(9.4)	–	(13.0)	(202.0)
Balance at 30 September 2022	2,254.8	3,140.1	703.1	113.6	1,224.2	**7,435.8**
Depreciation and impairment losses						
Balance at 1 October 2021	593.1	973.1	295.4	–	450.9	**2 312.5**
Depreciation	99.1	256.3	29.8	11.3	69.7	466.2
Impairment losses	132.1	231.3	0.2	–	60.9	424.5
Reclassifications	117.6	98.9	(2.3)	11.2	(6.7)	218.7
Effect of movements in exchange rates, including hyperinflation adjustment	(39.7)	(32.4)	(1.1)	(1.0)	(6.2)	(80.4)
Disposals	(40.7)	(74.8)	(3.3)	–	(10.2)	(129.0)
Divestment of subsidiaries	(80.2)	(58.7)	(5.9)	–	(9.0)	(153.8)
Balance at 30 September 2022	781.3	1,393.7	312.8	21.5	549.4	**3,058.7**
Net book value at 30 September 2022	1,473.5	1,746.4	390.3	92.1	674.8	**4,377.1**

USD'M	Land and buildings	Machinery and equipment	Barges and vessels	Mine property and development	Other fixed assets	Total
Cost						
Balance at 1 October 2020	1,280.7	2 381.3	582.9	61.7	847.4	**5,154.0**
Additions	16.5	84.8	226.5	19.5	335.8	683.1
Acquired in business combination/remeasurements	958.7	531.0	17.9	–	117.1	1,624.7
Reclassifications	18.1	145.2	8.4	(20.7)	(237.6)	(86.6)
Effect of movements in exchange rates, including hyperinflation adjustment	0.9	3.7	–	4.1	0.7	9.4
Disposals	(3.1)	(66.3)	(216.2)	–	(24.6)	(310.2)
Balance at 30 September 2021	2,271.8	3,079.7	619.5	64.6	1,038.8	**7,074.4**
Depreciation and impairment losses						
Balance at 1 October 2020	473.2	710.3	271.6	5.5	263.2	**1,723.8**
Depreciation	41.5	184.3	25.4	8.9	52.7	312.8
Impairment losses	94.0	132.2	–	–	199.8	426.0
Reclassifications	(12.2)	1.4	(1.6)	(14.4)	(56.5)	(83.3)
Effect of movements in exchange rates, including hyperinflation adjustment	(2.1)	(0.5)	–	–	0.9	(1.7)
Disposals	(1.3)	(54.6)	–	–	(9.2)	(65.1)
Balance at 30 September 2021	593.1	973.1	295.4	–	450.9	**2,312.5**
Net book value at 30 September 2021	1,678.7	2,106.6	324.1	64.6	587.9	**4,761.9**

G. Notes to consolidated financial statements

19.1 Financial year 2022

Total additions for the year (USD1,031.6 million) mainly relate to investments in the Nyrstar industrial facilities and mines (USD275.5 million), vessels (USD384.1 million) and various individual smaller projects. The investments in Nyrstar predominantly relate to sustaining capital expenditures of USD252.4 million, with investments split across the Group's global operations.

The USD351.9 million disposals mainly relate to the sale of vessels, which were subsequently leased back for a period between five and seven years.

Included in the other fixed assets category are assets under construction, which relates to assets not yet in use, and some Nyrstar related assets. Net book value as at 30 September 2022 amounted to USD415.4 million. Once the assets under construction come into operation they are reclassified to the appropriate asset category and from that point they are depreciated.

Certain items of property, plant and equipment are pledged as collateral for an amount of USD375.4 million.

Depreciation is included in depreciation and amortisation. Impairment charges are separately disclosed in the Consolidated Statement of Income. Please refer to note 14 for details on impairments.

During the 2022 financial year, the Group capitalised borrowing costs of a total amount of USD5.2 million under other fixed assets.

19.2 Financial year 2021

Total additions for the year (USD683.1 million) mainly relate to investments in the Nyrstar industrial facilities and mines (USD267.0 million), vessels (USD202.0 million) and various individual smaller projects. The investments in Nyrstar are made across the global operations with the main investments relating to continuation of the catch-up of neglected maintenance prior to acquisition, including the installation of gas cleaning equipment in Europe.

The USD245.1 million disposals mainly relate to the sale of vessels, which were subsequently leased back for a period between five and seven years.

Included in the other fixed assets category are assets under construction, which relates to assets not yet in use, and some Nyrstar related assets. Net book value as at 30 September 2021 amounted to USD383.1 million. Once the assets under construction come into operation they are reclassified to the appropriate asset category and from that point they are depreciated.

Certain items of property, plant and equipment are pledged as collateral for an amount of USD367.5 million.

Depreciation is included in depreciation and amortisation. Impairment charges are separately disclosed in the Consolidated Statement of Income.

Please refer to note 14 for details on impairments and to note 7 for information on amounts acquired in business combination.

During the 2021 financial year, the Group capitalised borrowing costs of a total amount of USD4.1 million under other fixed assets.

20. Intangible fixed assets

Accounting policy

Goodwill

Goodwill that arises on the acquisition of subsidiaries is presented with intangible fixed assets. For the measurement of goodwill at initial recognition refer to note 7 – Business combinations and non-controlling interests.

Goodwill is measured at cost less accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each of the Group's Cash-Generating Units (CGUs) or group of CGUs that are expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units.

Where goodwill has been allocated to a CGU and part of the operation within that unit is disposed of, the goodwill associated with the disposed operation is included in the carrying amount of the operation when determining the gain and loss on disposal. Goodwill disposed in these circumstances is measured based on the relative values of the disposed operation and the portion of the CGU retained.

In respect of equity-accounted investees, the carrying amount of goodwill is included in the carrying amount of the investment, and any impairment loss is allocated to the carrying amount of the equity-accounted investee as a whole.

Brand name and customer relationships

Brand name and customer relationships (acquired in business combination) are measured at fair value at the date of acquisition. They are amortised evenly over their estimated useful economic life, primarily being between 10 and 20 years.

Environmental emission credits and allowances held for own use (included in other intangible assets)

Environmental emission credits and allowances held for own use are acquired for the purpose of settling emissions in the ordinary course of business. These credits and allowances are classified as intangible fixed assets at cost less accumulated impairment losses. An obligation to deliver environmental emission credits and allowances arises due to emissions in our operations or as per the regulatory triggers. This obligation is reported as an expense within Materials, transportation and storage and a liability within accruals under Trade and other Payables. This liability is valued in the amount at which it is expected to be settled.

Licences and other intangible fixed assets

Licences and other intangible fixed assets include software development costs and certain long-term concession rights related to land usage. These items are stated at cost, less accumulated amortisation and accumulated impairment losses. Licences are amortised over the term of the licence, generally not exceeding 10 years. The long-term concession rights have useful lives ranging from 33 to 99 years.

An intangible fixed asset acquired as part of a business combination is measured at fair value at the date of acquisition and is recognised separately from goodwill if the asset is separable or arises from contractual or other legal rights.

Gains or losses on disposal of intangible fixed assets are recorded in the Consolidated Statement of Income in services and other.

USD'M	Goodwill	Brand name and customer relationships	Other intangible assets	Total
Cost				
Balance at 1 October 2021	1,233.8	437.8	691.4	**2,363.0**
Additions	–	–	567.7	567.7
Reclassifications	–	–	(2.2)	(2.2)
Effect of movements in exchange rates, including hyperinflation adjustment	(30.1)	(10.2)	(16.0)	(56.3)
Disposals	–	–	(10.8)	(10.8)
Divestment of subsidiaries	–	–	(21.0)	(21.0)
Balance at 30 September 2022	1,203.7	427.6	1,209.1	**2,840.4**
Amortisation and impairment losses				
Balance at 1 October 2021	108.4	–	439.3	**547.7**
Amortisation	–	39.4	78.6	118.0
Impairment losses	88.5	–	2.2	90.7
Effect of movements in exchange rates, including hyperinflation adjustment	–	–	(10.0)	(10.0)
Reclassifications	–	–	3.2	3.2
Disposals	–	–	(0.9)	(0.9)
Divestment of subsidiaries	–	–	(21.0)	(21.0)
Balance at 30 September 2022	196.9	39.4	491.4	**727.7**
Net book value at 30 September 2022	1,006.8	388.2	717.7	**2,112.7**

USD'M	Goodwill	Brand name and customer relationships	Other intangible assets	Total
Cost				
Balance at 1 October 2020	70.2	–	537.2	**607.4**
Additions	1.2	–	65.7	66.9
Acquired in business combination/remeasurements	1,162.4	437.8	85.6	1,685.8
Reclassifications	–	–	1.4	1.4
Effect of movements in exchange rates, including hyperinflation adjustment	–	–	2.6	2.6
Disposals	–	–	(1.1)	(1.1)
Balance at 30 September 2021	1,233.8	437.8	691.4	**2,363.0**
Amortisation and impairment losses				
Balance at 1 October 2020	5.9	–	391.2	**397.1**
Amortisation	–	–	48.5	48.5
Impairment losses	102.5	–	1.2	103.7
Effect of movements in exchange rates, including hyperinflation adjustment	–	–	0.9	0.9
Reclassifications	–	–	(1.4)	(1.4)
Disposals	–	–	(1.1)	(1.1)
Balance at 30 September 2021	108.4	–	439.3	**547.7**
Net book value at 30 September 2021	1,125.4	437.8	252.1	**1,815.3**

Goodwill is the only intangible fixed asset with an indefinite life. All other intangible fixed assets are amortised as follows:

- Brand name and customer relationships (acquired in business combination) are amortised evenly over their estimated useful economic life, primarily being between 10 and 20 years.
- Other intangible fixed assets are amortised evenly over their estimated useful economic life. Other intangibles mainly consist of:
  - Environmental emission credits and allowances held for own use acquired for the purpose of settling emissions in the ordinary course of business (FY2022: USD490.9 million/ FY2021: nil). These credits and allowances are derecognised based on usage in operations or as per the regulatory triggers;
  - Licence fees paid are amortised evenly over their respective periods, for which the licences have been granted, generally not exceeding 10 years; and
  - Software of USD154.8 million (FY2021: USD152.2 million) that is amortised over five years and payments made under exclusivity contracts with clients for petroleum fuels and lubricants that are amortised over the contractual period.

Amortisation expenses are included in depreciation and amortisation. Impairment charges are separately disclosed in the Consolidated Statement of Income. Intangible fixed assets with finite lives are tested for impairment when impairment indicators exist. For the purpose of impairment testing, goodwill is allocated to the CGUs or groups of CGUs.

The increase in 2022 financial year primarily results from including the environmental emission credits and allowances for own use, which are acquired for the purpose of settling emission obligations in the ordinary course of business.

G. Notes to consolidated financial statements

Goodwill impairment

Total goodwill impairment charges recognised for the 2022 financial year amount to USD88.5 million (FY2021: USD102.5 million). The balance for the 2022 financial year primarily concerns an impairment of Puma Energy related goodwill, while the FY2021 balance includes both the day 1 goodwill impairment resulting from the Puma Energy acquisition (USD88.4 million) and an impairment of Nyrstar related goodwill (USD14.1 million). For further information on these goodwill impairments, refer to note 14.

21. Leases

Accounting policy

When the Group is the lessee

As a lessee, at inception of a contract the Group assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the Group assesses whether:

- The contract involves the use (explicitly or implicitly) of an identified asset;
- The Group has the right to obtain substantially all of the economic benefits throughout the period of use; and
- The Group has the right to direct the use of the asset.

This policy is applied to all lease contracts except for short-term leases and leases of low-value assets. If a contract is, or contains a lease, the Group accounts a lease component separately from non-lease components. As a lessee, the Group allocates the consideration in the contract based on the relative stand-alone price of components and the aggregate stand-alone price of the non-lease components (if applicable).

For all leases, the Group recognises a right-of-use (ROU) asset and a corresponding liability at the date at which the leased asset is available for use. Assets and liabilities arising from a lease are initially measured on a present value basis. The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate is used, being the rate of interest that the lessee would have to pay to borrow over a similar term, and with a similar security, the funds necessary to obtain an asset of a similar value to the ROU asset in a similar economic environment. Generally, the Group uses its incremental borrowing rate as the discount rate. The incremental borrowing rate is determined using recent third-party financing received adjusted for both changes in financing conditions since third-party financing was received and for terms specific to leases.

In determining the lease term, management considers all facts and circumstances that create an economic incentive to exercise an extension option or to not exercise a termination option. Extension options (or periods after termination options) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated).

Lease payments included in the measurement of the lease liability include the following:

- Fixed payments (including in-substance fixed payments), less any lease incentives receivables;
- Variable lease payment that are based on an index or a rate;
- Amounts expected to be payable by the lessee under residual value guarantees;
- The exercise price of a purchase option if the lessee is reasonably certain to exercise that option; and
- Payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option.

The ROU asset is initially measured at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, any initial direct costs and an estimate of costs to dismantle and remove the underlying asset or to restore the underlying asset or the site on which it is located, less any lease incentives received.

Subsequent to initial recognition, the lease liability is measured at amortised cost using the effective interest method, and the ROU asset is depreciated on a straight-line basis, from the commencement date to the earlier of the end of the useful life of the ROU asset, or the end of the lease term.

The lease liability is remeasured when:

- There is a change in future lease payments arising from changes in an index or rate;
- There is a change in the Group's assessment of whether it will exercise an extension option; or
- There are modifications in the scope or the consideration of the lease that were not part of the original term.

The lease liability is remeasured with a corresponding adjustment to the ROU asset or is recorded in profit or loss if the carrying amount of the ROU asset has been reduced to zero.

When the Group is the (intermediate) lessor

The accounting policy applicable to the Group as a lessor in the comparative period was the same under IAS 17, except for subleases, when the Group acts as an intermediate lessor.

Subleases

When the Group acts as an intermediate lessor, it accounts for its interest in the head lease and the sub-lease separately. The classification of the sub-lease is assessed with reference to the ROU asset of the head lease and not the underlying asset. If a head lease is a short-term lease and the exemption below has been applied, the sub–lease is classified as an operating lease. If the sub-lease is classified as a finance lease, the Group derecognises the ROU asset and instead recognises a finance lease receivable at the amount of its net investment, which is the present value of all remaining lease payments. Any difference between the ROU asset and the finance lease receivable is recognised in profit or loss, when the finance lease receivable is recognised. Lease liability relating to the head lease is retained in the Consolidated Statement of Financial Position, which represents the lease payments owed to the head lessor.

For any arrangements that contain lease and non-lease components, as an intermediate lessor, the Group allocates the consideration in the contract based on a relative stand-alone selling basis.

Subsequent to initial recognition, the Group, as intermediate lessor, accrues interest income on the net investment. The receipts under the lease are allocated between the receivable and the finance income to produce a constant rate of return on the net investment.

The Company, as a lessor, assesses the risk with respect to leased assets as limited and not material. Lease agreements do not impose any covenants, but leased assets may not be used as security for borrowing purposes. Any allowances for expected credit losses are recognised against finance lease receivables as required by IFRS 9, if applicable.

Key accounting estimate and judgement

Discount rates

The Group cannot readily determine the interest rate implicit in the lease, therefore, it uses its incremental borrowing rate (IBR) to measure lease liabilities. The IBR is the rate of interest that the Group would have to pay to borrow over a similar term, and with a similar security, the funds necessary to obtain an asset of a similar value to the right-of-use asset in a similar economic environment. The IBR therefore reflects what the Group 'would have to pay', which requires estimation when no observable rates are available (such as for subsidiaries that do not enter into financing transactions) or when they need to be adjusted to reflect the terms and conditions of the lease (for example, when leases are not in the subsidiary's functional currency). The Group estimates the IBR using observable inputs (such as market interest rates) when available and is required to make certain entity-specific estimates when applicable (such as the subsidiary's stand-alone credit rating). A single IBR may be applied to a portfolio of leases, which are similar in nature and lease term.

Determining the term of a lease contract

Extension and termination options are included in most lease contracts held by the Group. These options are used to maximise operational flexibility in terms of managing the assets used in the Group's operations. The majority of extension and termination options held are exercisable only by the Group and not by the respective lessor.

In determining the lease term, management considers all facts and circumstances that create an economic incentive to exercise an extension option, or to not exercise a termination option. Extension options (or period after termination option) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated).

For lease contracts, the following factors are normally the most relevant:

- Remaining useful live of the assets depending on the lease term of the lease contract;
- Remaining duration of long-term customer contracts;
- The amount of the penalties to terminate (or not to extend);
- Other factors including historical lease durations and the costs and business disruption that is expected to be incurred to replace the leased asset.

The lease term is reassessed if an option is actually exercised (or not exercised) or the Group becomes obliged to exercise (or not exercise) it. The assessment of reasonable certainty is only revised if a significant event or a significant change in circumstances occurs, which affects this assessment, and that is within the control of the lessee.

No other material estimates and judgements are applied by the Group with regard to leases.

The Group leases various assets including land and buildings, and plant and equipment. Leases are negotiated on an individual basis and contain a wide range of different terms and conditions, including termination and renewal rights. The Group, as a lessor, only has finance leases.

The lease agreements do not impose any covenants, but leased assets may not be used as security for borrowing purposes.

21.1 Right-of-use assets

USD'M	Freight	Storage	Land and buildings	Service stations	Other	Total
Balance at 1 October 2021	1,588.1	114.3	338.6	174.9	190.3	**2,406.2**
Additions/remeasurements	2,239.5	458.0	15.1	17.2	314.5	**3,044.3**
Reclassifications	(0.1)	1.3	10.3	–	17.7	**29.2**
Disposals	(306.0)	–	(1.7)	(0.1)	–	**(307.8)**
Impairment losses	–	–	(0.1)	0.1	(20.7)	**(20.7)**
Depreciation	(976.1)	(49.1)	(51.0)	(29.3)	(110.8)	**(1,216.3)**
Effect of movement in exchange rates	–	(4.3)	(10.9)	(5.1)	(2.6)	**(22.9)**
Other	(0.7)	1.0	(5.1)	(1.9)	(0.8)	**(7.5)**
Balance at 30 September 2022	2,544.7	521.2	295.2	155.8	387.6	**3,904.5**

USD'M	Freight	Storage	Land and buildings	Service stations	Other	Total
Balance at 1 October 2020	1,382.7	92.7	85.7	–	530.4	**2,091.5**
Additions/remeasurements	1,002.0	55.3	14.9	–	72.4	**1,144.6**
Acquired in business combination	138.6	45.2	261.2	174.9	(1.3)	**618.6**
Disposals	(169.1)	(2.9)	(0.5)	–	(4.3)	**(176.8)**
Impairment losses	–	(1.3)	–	–	(156.7)	**(158.0)**
Depreciation	(744.6)	(76.9)	(20.3)	–	(252.9)	**(1,094.7)**
Effect of movement in exchange rates	–	–	0.5	–	0.4	**0.9**
Other	(21.5)	2.2	(2.9)	–	2.3	**(19.9)**
Balance at 30 September 2021	1,588.1	114.3	338.6	174.9	190.3	**2,406.2**

The Other category mainly includes assets located in Corpus Christi, Texas, that enable the transportation, storing, processing and vessel loading of crude oil and crude oil products.

G. Notes to consolidated financial statements

21.2 Lease liabilities

	2022 USD'M	2021 USD'M
Opening balance	**2,572.1**	2,389.0
Interest	134.7	91.1
Additions/remeasurements	3,067.9	1,159.6
Effect of business combination	–	373.3
Disposals	(314.6)	(184.6)
Payments	(1,438.9)	(1,253.0)
Effect of movement in exchange rates	(48.3)	(0.8)
Other	14.3	(2.5)
Closing balance	**3,987.2**	2,572.1
Current	1,170.1	925.3
Non-current	2,817.1	1,646.8
Closing balance	**3,987.2**	2,572.1

The following table sets out a maturity analysis of the lease liabilities at 30 September 2022 and 2021, indicating the undiscounted lease amounts to be paid:

	2022 USD'M	2021 USD'M
Less than one year	1,355.3	1,033.7
Later than one year and less than five years	2,558.4	1,528.3
Later than five years	604.1	1,186.7
Total undiscounted lease payable	**4,517.8**	3,748.7
Future finance costs	(530.6)	(1,176.6)
Lease liabilities included in the statement of financial position	**3,987.2**	2,572.1

21.3 Amounts relating to leases recognised for the reporting period

The following amounts are recognised in profit and loss:

	2022 USD'M	2021 USD'M
Depreciation on right-of-use assets	1,216.3	1,094.7
Interest expense on lease liabilities	134.7	91.1
Impairments of right-of-use assets	20.7	158.0
Expenses relating to short-term leases	760.1	623.7
Expenses related to variable lease payments not included in the measurement of the lease liability	535.1	508.0
(Income) from subleasing right-of-use assets	–	(5.7)
Gain or losses on sale and leaseback	27.2	8.3
Foreign exchange/other	(25.4)	(5.3)
Net (income)/expenses related to leases	**2,668.7**	2,472.8

At 30 September 2022, the Group is committed to USD515.7 million of short-term lease payments (30 September 2021: USD63.4 million).

Total cash out flow included in net cash from operating and financing activities in the 2022 financial year was USD2,734.1 million (FY2021: USD2,379.0 million).

22. Equity-accounted investees

Accounting policy

Associates and joint ventures (together 'Associates') in which the Group exercises significant influence or joint control are accounted for using the equity method. Significant influence is the power to participate in the financial and operating policy decisions of the investee but not control those policies. Joint control is established by contractual agreement and requires unanimous consent for strategic financial and operating decisions. The considerations made in determining significant influence or joint control are similar to those necessary to determine control over subsidiaries.

Under the equity method, the investment in an Associate is initially recognised at cost. The carrying amount of the investment is adjusted to recognise changes in the Group's share in the net assets of the Associate since acquisition date. Goodwill relating to the Associate is included in the carrying amount of the investment and is neither amortised nor individually tested for impairment. The Consolidated Statement of Income reflects the Group's share of the results of operations of the Associate. Any change in the other comprehensive income (OCI) of those investees is presented as part of the Group's OCI. In addition, when there has been a change recognised directly in the equity of the Associate, the Group recognises its share of any changes, when applicable, in the Consolidated Statement of Changes in Equity.

Unrealised gains and losses resulting from transactions between the Group and the Associate are eliminated to the extent of the interest in the Associate, unless the sale or contribution of assets constitute a business in which case the gains and losses are recognised in full. The aggregate of the Group's share of profit or loss of equity-accounted investees is shown on the face of the Consolidated Statement of Income and represents profit or loss after tax and non-controlling interests in the subsidiaries of the Associate.

The Group determines at each reporting date whether there is any objective evidence that the investment in the Associate is impaired. The financial statements of the Associates are prepared for the same reporting period as the Group, unless otherwise indicated.

Changes in the Group's interest in Associates are accounted for as a gain or loss on disposal with any differences between the amount by which the carrying amount of the Associate is adjusted and the fair value of the consideration received being recognised directly in the Consolidated Statement of Income.

Key accounting estimate and judgement

Determination of control of subsidiaries and joint arrangements

Judgement is required to determine whether the Group controls an entity, and consequently, whether it needs to consolidate that entity into the consolidated financial statements. Specifically, the Group assesses whether it has the power over the relevant activities of the entity, exposure to its variable returns or the ability to use power to impact returns of the entity.

The Group has certain investments in companies, which are not consolidated and whose results are accounted for in the Group's consolidated financial statements based on their equity share ownership. The most significant of the Group's investments is the 50 percent investment in ITG S.à r.l., parent company of Impala Terminals Group (ITG).

	2022 USD'M	2021 USD'M
Opening balance	**842.2**	2,438.6
Acquired in business combination/remeasurements	–	47.4
Effect of movements in exchange rates	(34.2)	26.0
Additions	150.9	155.5
Disposals	(10.4)	(414.4)
Impairments	(34.9)	(26.3)
Share of net profit/(loss)	54.2	(110.8)
Dividends received	(21.4)	(164.3)
Effect of business combination	–	(953.8)
Reclassification to assets held for sale	(9.4)	(141.0)
Other	42.6	(14.7)
Total	**979.6**	842.2

22.1 Financial year 2022

The additions to equity-accounted investees amounted to USD150.9 million. As Nala Renewables is expanding, a new holding company has been incorporated, Nala Lux Hold Co S.à r.l., and additional investments have been made (USD112.0 million). Also, various other investments were made in financial year 2022.

The share of net profit from investments amounts to USD54.2 million. This is predominantly the result of profits in ITG S.à r.l. (USD25.7 million), Atalaya Mining PLC (USD23.4 million) and Guangxi Jinchuan Non-ferrous Metals Co., Ltd (USD17.1 million), and partly offset by Porto Sudeste do Brasil (a loss of USD23.6 million).

During the 2022 financial year, the Group received USD21.4 million in dividends from various equity-accounted investees.

22.2 Financial year 2021

The additions to equity-accounted investees amounted to USD155.5 million. In the financial year, the Group participated for its share in an equity contribution in Tendril Ventures Pte. Ltd. (Tendril Ventures), resulting in an additional investment (USD52.3 million). Other additions include investments in Sawtooth Caverns LLC (USD49.6 million) and Trafigura Liaoning Port International Trading (Liaoning) Co. Ltd. (USD30.8 million), and various other investments.

For the disposals of equity-accounted investees during the financial year ended 30 September 2021, such as Minas de Aguas Tenidas SA (MATSA), please refer to note 15.

The share of net loss from investments amounts to USD110.8 million. This is predominantly the result of losses in Puma Energy (USD165.9 million) and Porto Sudeste do Brasil (USD69.6 million), partly offset by USD108.2 million profits from MATSA, Atalaya Mining PLC and ITG S.à r.l.

During FY2021, the Group received USD164.3 million in dividends from its investments in equity-accounted investees, which mainly relates to MATSA (USD136.4 million) and Sawtooth Caverns LLC (USD24.3 million).

G. Notes to consolidated financial statements

22.3 Equity-accounted investee-related balances and participations

The tables below depict participations and balances related to equity-accounted investees:

Name	Place of incorporation/registration	Activities	Percentage of equity attributable to the Group	
			2022	2021
Atalaya Mining PLC	Cyprus	Mining	**22.0%**	22.4%
Bluewater Texas Terminals LLC (BWTT)	United States	Terminal	**50.0%**	50.0%
Empresa Minera del Caribe S.A.	Caribbean	Mining	**49.0%**	49.0%
Guangxi Jinchuan Non-ferrous Metals Co., Ltd	China	Smelter	**30.0%**	30.0%
ITG S.à r.l.	Luxembourg	Multimodal logistics, warehousing and storage	**50.0%**	50.0%
Mineração Morro do Ipê S.A.	Brazil	Mining	**50.0%**	50.0%
Nala Lux HoldCo S.à r.l. (Nala Renewables)	Luxembourg	Renewable energy projects	**50.0%**	–
Porto Sudeste do Brasil S.A.	Brazil	Port services	**49.6%**	49.6%
Sawtooth Caverns LLC	United States	Storage of oil products	**50.0%**	50.0%
Trafigura Liaoning Port International trading (Liaoning) Co. Ltd.	China	Oil Trading	**50.0%**	50.0%
Transportadora Callao S.A.	Peru	Transportation	**30.0%**	30.0%

Name	**2022 USD'M**	2021 USD'M
Energy		
Nala Lux HoldCo S.à r.l. (Nala Renewables)	**98.7**	–
Sawtooth Caverns LLC	**30.2**	25.9
Trafigura Liaoning Port International trading (Liaoning) Co. Ltd.	**26.8**	30.8
Others	**59.6**	59.2
Total	**215.3**	115.9
Metals and Minerals		
ITG S.à r.l.	**314.6**	286.9
Guangxi Jinchuan Non-ferrous Metals Co., Ltd	**208.8**	202.0
Atalaya Mining PLC*	**108.0**	117.5
Mineração Morro do Ipê S.A.	**58.5**	34.1
Empresa Minera del Caribe S.A.	**39.9**	35.6
Porto Sudeste do Brasil S.A.	**–**	21.2
Others	**12.2**	10.9
Total	**742.0**	708.2
All other segments		
Others	**22.3**	18.1
Total	**979.6**	842.2

* Listed investments. Fair value as of 30 September 2022 (and 2021):

Atalaya Mining PLC	**65.5**	130.3

The table below presents the key financial information of ITG S.à r.l. The condensed information of the other associates is shown underneath.

	ITG S.à r.l.	
	2022 USD'M	2021 USD'M
Non-current assets	**1,392.7**	545.1
Current assets	**249.5**	159.5
Non-current liabilities	**157.7**	201.1
Current liabilities	**1,061.6**	136.8
Revenue	**715.9**	510.3
Profit/(loss) for the year	**51.6**	28.9
Dividends paid	**(1.5)**	(2.1)
Other comprehensive income	**6.8**	29.3
Total comprehensive income	**56.9**	58.2
Net assets	**422.9**	366.7
Trafigura's ownership interest	**50.0%**	50.0%
Fair value adjustment as a result of partial sale and other adjustments	**103.2**	103.6
Carrying value	**314.6**	286.9

Other associates	**2022 USD'M**	2021 USD'M
Assets	**4,031.4**	2,705.6
Liabilities	**1,652.8**	2,250.6
Revenue	**8,032.9**	2,507.8
Profit or (loss) for the year	**18.4**	(23.7)

Corporate guarantees in favour of associates and joint ventures as at 30 September 2022 amount to USD151.1 million (30 September 2021: USD93.7 million).

23. Prepayments and financial assets

Accounting policy

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Prepayments

The Group enters into prepayment agreements where purchases of commodities are prepaid. When the prepayment agreement can be settled in cash or another financial asset, it is classified at amortised cost in line with IFRS 9. When settlement of the prepayment agreement solely occurs by having the commodities physically delivered, these agreements are not classified as financial instruments as they do not meet the definition of a financial asset. For the clauses in the contracts which might result in cash settlement instead of physical delivery, the objective of the contract and the economic reality of such clauses determine the classification. Interest received on prepayment agreements is presented in finance income in the Consolidated Statement of Income.

Financial assets

Financial assets are classified, at initial recognition, as subsequently measured at amortised cost, fair value through other comprehensive income, and fair value through profit or loss.

The classification depends on the Group's business model for managing the financial assets and the contractual terms of the cash flows. For investments in debt instruments, this will depend on the business model in which the investment is held. For investments in equity instruments, this will depend on whether the Group has made an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income.

Subsequent measurement of debt instruments depends on the Group's business model for managing the asset and the cash flow characteristics of the asset.

The Group reclassifies debt investments only when its business model for managing those assets changes. Reclassification takes place on the first day of the financial year following the financial year in which the business model changes.

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss as incurred.

Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the market place (regular way trades) are recognised on the trade date (i.e. the date that the Group commits to purchase or sell the asset).

The Group derecognises a financial asset when the contractual rights to the cash flows from the asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all the risks and rewards of ownership of the financial asset are transferred. Any interest in such transferred financial assets that is created or retained by the Group is recognised as a separate asset or liability.

Financial assets at fair value through other comprehensive income

Where Group management has elected to present fair value gains and losses on equity investments in other comprehensive income, there is no subsequent reclassification of fair value gains and losses to the Consolidated Statement of Income. Dividends from such investments continue to be recognised in the Consolidated Statement of Income as income/(expenses) from investments when the Group's right to receive payments is established. There are no impairment requirements for equity investments measured at fair value through other comprehensive income.

Financial assets at fair value through profit or loss

The Group classifies the following financial assets at fair value through profit or loss:

- Equity investments that are held for trading;
- Equity investments for which the entity has not elected to recognise fair value gains and losses through other comprehensive income;
- Debt investments that do not qualify for measurement at amortised cost;
- Debt investments that do not qualify for measurement at fair value through other comprehensive income; and
- Debt investments that have been designated at fair value through profit or loss.

Financial assets at fair value through profit or loss are carried in the Consolidated Statement of Financial Position at fair value with net changes in fair value presented as income or expenses from investments in the Consolidated Statement of Income. Interests, dividends and gain or loss on foreign exchange on financial assets at fair value through profit or loss are included separately in finance income or expense, or services and other expenses, respectively.

Amortised cost

The Group classifies its financial assets as at amortised cost only if both of the following criteria are met:

- The asset is held within a business model with the objective of collecting the contractual cash flows; and
- The contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal outstanding.

Financial assets at amortised cost include loans receivable, trade and other receivables, and other financial assets that are held with the objective of collecting contractual cash flows. After initial measurement at fair value, the financial assets are measured at amortised cost using the EIR method, less impairment.

Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included in finance income in the Consolidated Statement of Income. The losses arising from impairment are recognised in the Consolidated Statement of Income in impairments of financial assets and prepayments.

G. Notes to consolidated financial statements

Key accounting estimate and judgement

Determination of control of a structured entity

A structured entity is as an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity, such as when any voting rights relate to administrative tasks only and the relevant activities are directed by means of contractual arrangements.

Structured entities are usually characterised to have quite a limited range of relevant activities after their initial set-up and design. Due to the specifics of a structure, the role of setting up the entity and deciding on its design (evaluating the transaction terms and features) can provide the investor with rights that are sufficient to give it power over the investee. However, being involved in the design of an investee alone is not sufficient to give an investor control.

The Group incorporated a structured entity during the 2021 financial year that subsequently acquired a 10 percent participatory equity interest in Vostok Oil LLC. Judgement was required in determining whether the Group had control over the structured entity. The objective of this assessment was to determine whether or not the structured entity should be consolidated by the Group.

The board of the structured entity consists of persons independent of the Group and the Group does not have the power to direct the relevant activities performed by the structured entity. The Group, acting as in investor in the structured entity, has no power over the investee which it could use to influence variable returns from the structured entity. In the absence of control over the structured entity, it is not consolidated in the Group's financial statements.

During the 2022 financial year, the Group disposed of the structured entity. Please refer to note 23.3.1.

23.1 Prepayments

	2022	2021
	USD'M	USD'M
Current	**2,117.2**	1,675.1
Non-current	**1,534.1**	1,804.6
Total	**3,651.3**	3,479.7

Prepayments relate to prepayments of commodity deliveries and are split into non-current prepayments (due > 1 year) and current prepayments (due < 1 year). A significant portion of the non-current prepayments and current prepayments are either financed on a non-recourse basis or insured. As at 30 September 2022, an amount of USD483.5 million (30 September 2021: USD176.4 million) of prepayments has been discounted. This amount has been derecognised as the Group has transferred substantially all the risks and rewards of ownership of the prepayment with non-recourse.

Out of the total current prepayments balance, an amount of USD1.3 billion (30 September 2021: USD0.9 billion) relates to prepayments that are made for specifically identified cargos.

The contractually outstanding prepayments amount decreases in size with each cargo that is delivered, until maturity. Once the contractually agreed total cargo has been fully delivered, the prepayment agreement falls away leaving no remaining contractual obligations on Trafigura or the supplier.

The Group monitors the commodity prices in relation to the prepayment contracts and manages the credit risk together with its financial assets as described in note 39. A portion of the long-term prepayments and short-term prepayments is financed on a limited-recourse basis. Interest on the prepayments is added to the prepayment balance.

Based on the individual analysis of the prepayments, the cumulated expected credit losses on these prepayments recorded by the Group amount to USD133.3 million (30 September 2021: USD124.1 million). The following table explains the movements of the expected credit loss between the beginning and the end of the reporting period and the gross carrying amounts of the prepayments by credit risk category:

	2022			2021		
	Performing 12-months ECL	**Under-performing Life-time ECL**	**Total**	Performing 12-months ECL	Under-performing Life-time ECL	Total
	USD'M	**USD'M**	**USD'M**	USD'M	USD'M	USD'M
Expected credit loss (ECL) provision						
Opening balance – 1 October	24.7	99.4	124.1	40.3	103.5	143.8
Transfer to under-performing	–	–	–	(0.3)	0.3	–
ECL on prepayments recognised during the year	3.9	12.4	16.3	0.4	21.6	22.0
ECL on prepayments derecognised during the year	–	(0.5)	(0.5)	(13.7)	(25.6)	(39.3)
Changes in PD/LGD/EAD	15.4	(22.0)	(6.6)	(2.0)	(0.4)	(2.4)
Closing balance at 30 September	**44.0**	**89.3**	**133.3**	24.7	99.4	124.1
Carrying amount 30 September						
Current	2,060.9	56.3	2,117.2	1,372.8	302.3	1,675.1
Non-current	385.0	1,149.1	1,534.1	687.7	1,116.9	1,804.6
Total	**2,445.9**	**1,205.4**	**3,651.3**	2,060.5	1,419.2	3,479.7

23.2 Loans and other receivables

	2022 USD'M	2021 USD'M
Loans to associates and related parties	43.2	62.9
Other non-current loans receivable	264.3	284.8
Total	**307.5**	347.7

Other non-current loans receivables include various loans that are granted to counterparties that the Group trades with. This line also includes the debt agreement with the Ministry of Finance of Angola, which relates to compensation for iron ore investments made by the Group following the liquidation of a consolidated Angolan subsidiary in 2016. In 2019, the original debt agreement was renegotiated with a new redemption schedule in place. In recent years, due to the economic situation in Angola, with collapsing oil prices, a lack of liquidity and COVID-19, it has not been possible for the Ministry of Finance to honour all of its obligations. During the 2022 financial year, the Ministry of Finance started regular payments of the debt amounting to USD69 million in aggregate.

In addition, this line also includes a series of financial instruments provided to Wolverine Fuels LLC (Wolverine) with a carrying value of USD87.9 million as per 30 September 2022. Wolverine's liquidity became severe during 2022 as labour shortages and logistical issues involving Wolverine's rail provider severely affected Wolverine's ability to move coal tonnage and deliver against its customers obligations. As a result, an impairment amounting to USD154.3 million was recorded in the Consolidated Statement of Income for the year.

Based on the individual analysis of these loans, the recorded expected credit losses on these loans amount to USD282.7 million (30 September 2021: USD136.6 million), the difference being mostly explained by the above mentioned Wolverine impairment. The following table explains the movements of the expected credit loss between the beginning and the end of the reporting period and the gross carrying amounts of the loan receivables by credit risk category:

	2022			2021		
	Performing 12-months ECL USD'M	Under-performing Life-time ECL USD'M	Total USD'M	Performing 12-months ECL USD'M	Under-performing Life-time ECL USD'M	Total USD'M
Expected credit loss (ECL) provision						
Opening balance – 1 October	2.4	134.2	136.6	4.6	117.4	122.0
Transfer to under-performing	–	–	–	(0.3)	0.3	–
ECL on new loans originated during the year	–	56.6	56.6	1.4	–	1.4
ECL on loans derecognised during the year	–	–	–	(3.3)	(3.0)	(6.3)
Changes in PD/LGD/EAD	0.7	88.8	89.5	–	19.5	19.5
Closing balance at 30 September	**3.1**	**279.6**	**282.7**	2.4	134.2	136.6
Carrying amount at 30 September						
Current (note 26)	211.1	3.8	214.9	107.1	166.0	273.1
Non-current (note 23)	144.9	162.6	307.5	73.6	274.1	347.7
Total	**356.0**	**166.4**	**522.4**	180.7	440.1	620.8

23.3 Other investments

Investments included in the Consolidated Statement of Financial Position as at 30 September 2022 and 2021 can be broken down as follows:

	2022 USD'M	2021 USD'M
Listed equity securities – Fair value through OCI	0.9	2.7
Listed equity securities – Fair value through profit or loss	63.2	68.7
Listed debt securities – Fair value through profit or loss	203.0	277.3
Unlisted equity investments – Fair value through profit or loss	130.1	130.9
Unlisted equity investments – Fair value through OCI	198.3	242.4
Other investments – Fair value through profit or loss	–	862.2
Total	**595.5**	1,584.2

The Group's long-term investments consist of listed equity securities, listed debt securities and unlisted equity securities. The listed equity securities have no fixed maturity or coupon rate. The fair values of listed equity investments are based on quoted market prices, while the fair value of the unlisted equity securities is determined based on a level 3 valuation as prepared by management.

G. Notes to consolidated financial statements

23.3.1 Acquisition of 10% participatory equity interest in Vostok Oil LLC

On 24 December 2020, the Group entered into a transaction consisting of an investment in a 100 percent owned structured entity that subsequently acquired a 10 percent participatory equity interest in Vostok Oil LLC from Rosneft, and other contractual agreements. Vostok Oil LLC is an oil and gas company incorporated in the Russian Federation.

The structured entity was governed by an independent board of directors and as a result the Group did not have the ability to use its power to influence the variable returns from the structured entity. As a consequence, the structured entity was not consolidated in the Group's consolidated financial statements.

The Group made an initial contribution of EUR1.5 billion of equity to the structured entity in cash. Additional debt funding was attracted by the structured entity to finance the acquisition of the 10 percent participatory equity interest for a total consideration of EUR7.0 billion. The principal activity of the structured entity was that of a holding and trading company. The debt financing attracted by the structured entity was non-recourse to the Group.

The initial equity investment in the structured entity and the associated agreements are considered as a single unit of account and was classified under Other Investments on the Consolidated Statement of Financial Position in previous financial year. The net value of the investment as a single unit of account as at 30 September 2021 amounted to USD862.2 million.

As the Group did not control the structured entity, the Other investment qualified as a financial instrument classified as fair value through profit or loss. The main level 3 inputs used by the Group were derived as follows:

- Discount rate reflecting the Group's own capital structure and time value of money;
- Risk adjustment to factor in exposures relating to the counterparties and the specific specific terms of the contractual agreements;
- Market volatility in oil price estimated based on the Group's knowledge of the business.

Following a review of options, the Group exited its investment in July 2022. The Group's shareholding in Vostok Oil LLC, including the associated non-recourse bank debt, were sold to Nord Axis Limited, an independent Hong Kong registered trading company. The transaction completed on 12 July 2022. The Group further exited other associated contractual agreements that were part of the unit of account. No loss was recorded at the exit from the investment structure.

24. Other non-current assets

	2022 USD'M	2021 USD'M
Non-financial hedged items	3,821.6	605.6
Restricted deposits	94.7	133.3
Other	369.6	179.0
Total	**4,285.9**	917.9

For further information on the non-financial hedged items, refer to note 40.2. The restricted deposits mainly represent amounts placed on deposit accounts relating to Puma Energy and Nyrstar mining operations. An increase in long-term deposits primarily explains the increase in the Other balance as per 30 September 2022.

25. Inventories

Accounting policy

Trading-related inventories are measured at fair value less costs to sell. Fair value movements are included in the Consolidated Statement of Income in materials, transportation and storage. Inventories of non-trading related products, including work in progress, are measured at the lower of cost or net realisable value. Costs comprise all costs of purchases and other costs incurred.

Environmental emission allowances held for trading

Allowances held for trading are acquired to take advantage of market fluctuations. These allowances are classified as inventory at fair value less costs to sell. When there is an active market, fair value is based on quoted prices (level 1), otherwise fair value measurement is derived from an observable market price (level 2). The change in fair value observed over the year is recorded in the Consolidated Statement of Income.

	2022 USD'M	2021 USD'M
Storage inventories	11,477.7	17,785.9
Floating inventories	10,194.8	10,906.3
Work-in-progress inventories	752.9	592.2
Supplies and other	158.2	369.1
Total	**22,583.6**	29,653.5

Trafigura policy provides that the inventory (except the item Supplies and other) has either been pre-sold or hedged. Part of the inventory has been pledged for securitisation purposes. Please refer to note 27.2.

Work-in-progress inventories predominantly relate to intermediate inventories being processed at the Nyrstar smelters.

26. Trade and other receivables

Accounting policy

Trade receivables

Trade receivables are amounts due from customers for services rendered in the ordinary course of business. Trade and other receivables are recognised initially at fair value. The Group holds trade receivables with the primary objective to collect the contractual cash flows, which are subsequently measured at amortised cost using the effective interest method, except for those subject to certain dedicated financing facilities, which would be held for collection of contractual cash flows and for selling the financial asset and therefore should be measured at fair value through other comprehensive income. As trade receivables are generally due for settlement within 30 days both measurement methods would result in the same carrying value as the amortised cost would approximate the fair value.

The Group applies the simplified approach to measuring expected credit losses that uses a lifetime expected loss allowance for all trade receivables and contract assets.

Trade receivables are written off (impaired) when objective evidence indicates that there is no reasonable expectation of recovery. This is based on an individual review for impairment due to an increase of the credit risk of the customer and/or past due amounts, and taking into account any retention right on product stored for this customer.

The creation and release of a provision for impaired trade receivables are recognised under Impairments of financial assets and prepayments in the Consolidated Statement of Income.

Provisional pricing features

Trade and other receivables and trade and other payables related to commodity contracts, including provisional pricing features, are measured at fair value through profit or loss applying a level 2 valuation. The related net changes in fair value are presented under material, transportation and storage.

Accrued turnover

Accrued turnover relates to sales made before the end of the year that have not been invoiced at the balance sheet date. Reasons for such delays include the need to determine final pricing, quantity and quality analysis. All are typical of the industry in which the Group operates.

	2022	2021
	USD'M	USD'M
Trade debtors	10,472.6	12,076.4
Provision for bad and doubtful debts	(94.2)	(110.9)
Accrued turnover	8,638.0	8,220.1
Broker balances	2,550.5	1,707.1
Other debtors	3,965.8	1,888.2
Loans to third parties	185.9	273.1
Loans to related parties	29.0	–
Other taxes	545.9	619.0
Other balances due from related parties	1,337.0	233.6
Total	**27,630.5**	24,906.6

All financial instruments included in trade and other receivables are held to collect the contractual cash flows. Furthermore, the cash flows that the Group receives on these instruments are solely payments of principal and interest except for trade and other receivables related to contracts including provisional pricing features.

The Group entered into a number of dedicated financing facilities, which finance a portion of its receivables. Part of these facilities meet the criteria of derecognition of the receivables according to IFRS.

As at 30 September 2022, an amount of USD8,147.3 million (30 September 2021: USD7,690.6 million) of trade debtors was discounted. Of this amount, USD6,566.0 million (30 September 2021: USD7,152.4 million) was derecognised, as the Group transferred substantially all the risks and rewards of ownership of the financial asset with non-recourse. The remaining part of discounted receivables that does not meet the criteria for derecognition amounting to USD1,581.2 million (30 September 2021: USD538.2 million) continues to be recognised as trade debtors. For the received amount of cash of these items the Group recognised a liability under current loans and borrowings.

Of USD10,472.6 million trade debtors (30 September 2021: USD12,076.4 million), USD4,095.1 million was sold on a non-recourse basis under the securitisation programme (30 September 2021: USD5,069.6 million). Of the USD1,337.0 million receivables from related parties (30 September 2021: USD233.6 million), USD30.9 million was sold on a non-recourse basis under the securitisation programme (30 September 2021: USD103.8 million). Please refer to note 27.

As at 30 September 2022, 10.7 percent (30 September 2021: 8.4 percent) of receivables were between 1-60 days overdue and 4.9 percent (30 September 2021: 5.4 percent) were greater than 60 days overdue. Trafigura applied the simplified method in assessing expected credit losses. The accounts receivables were divided in aging buckets and based on an analysis on historical defaults and recovery rates, and considering forward looking information, a percentage for expected credit losses was determined. Trafigura manages to limit credit losses by renegotiating contracts in the case of a default.

From the above analysis, an expected credit loss as at 30 September 2022 amounting to USD3.8 million (30 September 2021: USD4.2 million) has been recorded. The loss allowance provision as at 30 September 2022 amounts to USD94.2 million (30 September 2021: USD110.9 million). The provision mostly relates to demurrage claims and commercial disputes with our clients. Accrued turnover represents receivable balances for sales which have not yet been invoiced. They have similar risks and characteristics as trade debtors. Trade debtors and accrued turnover have similar cash flow characteristics and are therefore considered to be a homogeneous group of financial assets.

Total trade and other receivables related to contracts including provisional pricing features amount to USD6.5 billion (30 September 2021: USD8.0 billion).

Other debtors primarily relate to collateral for OTC derivatives. In addition, the 30 September 2021 balance included an amount due from Sandfire Resources Limited in relation to the sale of MATSA (USD727.1 million), which was settled during the 2022 financial year.

Other balances due from related parties include an amount receivable from ITG S.à r.l. in relation to sale of the Puma Energy's Infrastructure business (USD896.6 million). Please refer to note 30.

G. Notes to consolidated financial statements

27. Securitisation programmes

The Group operates various securitisation programmes. Trafigura Securitisation Finance plc. (TSF) and Argonaut Receivables Company S.A. (Argonaut) enable the Group to sell eligible receivables, and an inventory securitisation programme, through Trafigura Commodities Funding Pte. Ltd. (TCF) and Trafigura Global Commodities Funding Pte. Ltd. (TGCF), enables Trafigura to sell and repurchase eligible inventories. These securitisation vehicles are consolidated and consequently the securitised receivables and inventories are included within the consolidated trade debtor and inventory balances.

27.1 Receivables securitisation

Over time, the external funding of TSF has increased significantly in size, mostly through Variable Funding Notes (VFN) purchased by bank sponsored conduits, while incorporating a longer-term committed funding element, in the form of Medium Term Notes (MTN).

Argonaut is funded through short-term VFN only.

The available external funding of the receivables securitisation programmes consists of:

	Interest rate	Maturity	2022 USD'M	2021 USD'M
TSF AAA MTN	Libor + 0.53%	2024 – July	139.5	139.5
TSF AAA MTN	1.09%	2024 – July	139.5	139.5
TSF BBB MTN	1.79%	2024 – July	21.0	21.0
TSF AAA VFN	Various	Various throughout the year	4,798.3	4,170.6
TSF BBB VFN	Various	Various throughout the year	361.2	313.8
Argonaut Receivables Securitisation		2023 – April	175.0	300.0
Argonaut Receivables Securitisation		2022 – October	125.0	–
TSF senior subordinated debt		2023 – March	225.7	119.1
Total			**5,985.2**	5,203.5

The rate of interest applied to the TSF AAA and BBB VFN is principally determined by the demand for commercial paper issued by 10 bank-sponsored conduits and the liquidity of the interbank market. The Group benchmarks the rate provided against Libor and SOFR rates. The maturity of the TSF AAA and BBB VFNs has been staggered to diversify the maturity profile of the notes. This is aimed at mitigating the 'liquidity wall' risk associated with a single maturity date for a significant funding amount.

27.2 Inventory securitisation

The available external funding of the inventory securitisation programmes consists of:

	Interest rate	Maturity	2022 USD'M	2021 USD'M
TCF/TGCF VFN	Libor + 1.0%	2022 – November	465.0	455.0
TCF/TGCF MLF	Libor + 0.5%	2022 – November	50.0	45.0
Total			**515.0**	500.0

28. Other current assets

	2022 USD'M	2021 USD'M
Non-financial hedged items	3,064.9	2,154.7
Prepaid expenses	326.7	372.7
Other	30.7	8.9
Total	**3,422.3**	2,536.3

Refer to note 40.2 for further information on the non-financial hedged items. Prepaid expenses relate to prepayments other than those made for physical commodities.

29. Cash and cash equivalents

Accounting policy

Cash and short-term deposits in the Consolidated Statement of Financial Position comprise cash at banks and on hand and short-term highly liquid deposits with a maturity of three months or less that are readily convertible to a known amount of cash and subject to an insignificant risk of changes in value.

For the purpose of the Consolidated Statement of Cash Flows, cash and cash equivalents consist of all cash on hand and short-term highly liquid investments such as deposits with original maturities of three months or less.

	2022 USD'M	2021 USD'M
Cash at bank and in hand	**11,766.6**	9,234.9
Short-term deposits	**3,114.7**	1,442.6
Cash and cash equivalents	**14,881.3**	10,677.5

Cash at bank earns interest at floating rates based on daily bank deposit rates. Short-term deposits are made for varying periods between one day and three months depending on the immediate cash requirements of the Group and earn interest at the respective short-term deposit rates. The fair value of cash and cash equivalents approximates the carrying value.

An amount of USD102.4 million (30 September 2021: USD158.1 million) of cash at bank is restricted, including restrictions that require the funds to be used for a specified purpose and restrictions that limit the purpose for which the funds can be used, unless fixed asset construction invoices are presented to the banks.

As at 30 September 2022, the Group had USD12.7 billion (30 September 2021: USD11.4 billion) of committed unsecured syndicated loans, of which USD6.3 billion (30 September 2021: USD2.5 billion) remained unutilised. The Group had USD8.6 billion (30 September 2021: USD5.4 billion) of immediately (same day) available cash in liquidity funds. Therefore, the Group had immediate access to available liquidity balances from liquidity funds and corporate facilities in excess of USD14.9 billion (30 September 2021: USD7.9 billion).

29.1 Deposits

Short-term deposits made for periods longer than three months are shown separately in the Consolidated Statement of Financial Position and earn interest at the respective short-term deposit rates.

30. Assets classified as held for sale and discontinued operations

Accounting policy

Non-current assets and disposal groups are classified as held for sale if their carrying amounts will be recovered principally through a sales transaction rather than through continuing use. Non-current assets and disposal groups classified as held for sale are measured at the lower of their carrying amount and fair value less costs to sell. Costs to sell are the incremental costs directly attributable to the disposal of an asset (disposal group), excluding finance costs and income tax expense.

The criteria for held-for-sale classification is regarded as met only when the sale is highly probable and the asset or disposal group is available for immediate sale in its present condition. Actions required to complete the sale should indicate that it is unlikely that significant changes to the sale will be made or that the decision to sell will be withdrawn. Management must be committed to the plan to sell the asset and the sale expected to be completed within one year from the date of the classification.

At the moment an equity-accounted investee meets the criteria to be classified as held for sale, equity accounting is discontinued. An equity-accounted investee held for sale is measured at the lower of its existing carrying amount and fair value less costs to sell. In the situation where the equity-accounted investee ceases to be classified as held for sale, the equity method is applied retrospectively and comparative amounts disclosed for periods since the classification as held for sale are restated.

Property, plant and equipment and intangible fixed assets are not depreciated or amortised once classified as held for sale.

Assets and liabilities classified as held for sale are presented separately as current items in the Consolidated Statement of Financial Position.

Discontinued operations are excluded from the results of continuing operations and are presented as a single amount as profit or loss after tax from discontinued operations in the Consolidated Statement of Income.

All other notes to the financial statements include amounts for continuing operations, unless indicated otherwise.

Key accounting estimate and judgement

At the end of the reporting date, the Group has to assess if the value of the assets will be recovered principally through a divestment transaction rather than through continued use, and what the likelihood is that an asset will be divested within a year. This assessment is based on the facts and circumstances at that date. These facts and circumstances may change and could result in a situation where assets are divested, which were not classified as held for sale at the end of the year. When classifying non-current assets as held for sale, the Group makes estimates for their fair value (sales price and expected costs to sell). Depending on the nature of the non-current assets, the estimated fair value may be associated with uncertainty and possibly adjusted subsequently.

	2022 USD'M	2021 USD'M
Assets classified as held for sale	434.1	2,425.4
Liabilities classified as held for sale	(29.4)	(461.5)
Net assets classified as held for sale	**404.7**	1,963.9

G. Notes to consolidated financial statements

The net assets classified as held for sale as per 30 September 2022 predominantly relate to the remaining part of the Puma Infrastructure business, at USD263.0 million (30 September 2021: USD1,189.1 million), and the Group's equity investment in Tendril Ventures (Nayara), at USD165.9 million (30 September 2021: USD141.0 million). Compared to 30 September 2021, the balance of the net assets classified as held for sale decreased by USD1,559.2 million. This decrease is mostly attributable to the disposal of part of Puma's Infrastructure business and Puma's Angolan activities. The Group expects to complete the disposal of the remaining assets classified as held for sale during the 2023 financial year.

Puma Energy decided to divest its Infrastructure division at the end of the 2021 financial year, resulting in its classification as held for sale in the previous financial year (USD1,189.1 million). This asset held for sale was based on its fair value less cost of disposal as part of the purchase price allocation. During the 2022 financial year, the Group signed a Share Sales Agreement with ITG S.à r.l., parent company of Impala Terminals Group (ITG). Before completion, Puma's Infrastructure business was required to be carved out into a separate entity. Given the different pace of progress in the various jurisdictions, completion of the transaction has been staggered such that the majority of the terminals would be transferred at Main Completion, with the remaining terminals being transferred at a subsequent completion date. During the 2022 financial year, the valuation of the Infrastructure assets held for sale changed predominantly as a result of working capital movements between the held-for-sale perimeter and the remaining Group without material impact on the Group's Consolidated Statement of Income.

At 30 September 2022, all of the completion conditions for Main Completion were satisfied. As a consequence, the assets held for sale related to Main Completion were derecognised. A receivable from ITG totalling the net proceeds of USD896.6 million is reported under other balances due from related parties within Trade and other receivables, and remaining expected disposal costs are reported within accruals under Trade and other payables. The impact of the derecognition as per 30 September 2022 on the Group's Consolidated Statement of Income was nil.

In the 2021 financial year, Puma Energy and Sonangol signed an agreement through which Sonangol would acquire Puma Energy's business in Angola. Following the receipt of the remaining antitrust approvals in Angola, the transaction completed in the first quarter of the 2022 financial year. Reference is also made to this event in note 7. As the initial recognition of the Angola business was based on its fair value less cost of disposal (acquired in the prior year business combination), the impact on the Group's Consolidated Statement of Income for the 2022 financial year was nil. The valuation of the Angola-related net assets held for sale as per 30 September 2021 amounted to USD630.3 million. Income statement neutral working capital movements during the first quarter of 2022 financial year increased this balance to USD647.9 million. At completion, this receivable was netted, with the USD600.0 million payable to Sonangol, related to the acquisition of Puma shares from Sonangol (see note 7), resulting in a net incoming cash flow of USD47.9 million.

31. Capital and reserves

31.1 Share capital

As at 30 September 2022, the share capital of the Company comprises 25,000,000 issued ordinary shares with a total paid up capital of USD1,503.7 million. During the financial year ended 30 September 2022, no changes took place in the outstanding and issued share capital.

The holders of ordinary shares are entitled to receive dividends as and when declared by the Company. All ordinary shares carry one vote per share without restriction. The ordinary shares have no par value.

31.2 Capital securities

As part of the financing of the Company and its subsidiaries, the Company has two capital securities instruments with a total carrying value of USD654.1 million as at 30 September 2022 (30 September 2021: three capital securities instruments amounting to USD1,173.9 million). These two capital securities have a par value of EUR262.5 million and USD400.0 million respectively (30 September 2021: USD479.2 million, EUR262.5 million and USD400.0 million respectively).

These two capital securities are perpetual in respect of which there is no fixed redemption date. The distribution on the capital securities is payable semi-annually in arrears from the date of issue. The Company may elect to defer (in whole but not in part except for the USD400.0 million capital security where partial interest deferral is allowed) any distribution in respect of these capital securities by providing no more than 30 or less than five business days' notice, unless a compulsory interest payment event has occurred, including amongst others the occurrence of a dividend payment in respect of subordinated obligations of the Company. Any interest deferred shall constitute arrears of interest and shall bear interest.

In the event of a winding-up, the rights and claims of the holders in respect of the capital securities shall rank ahead of claims in respect of the Company's shareholders, but shall be subordinated in right of payment to the claims of all present and future senior obligations, except for obligations of the Company that are expressed to rank pari passu with, or junior to, its obligations under the capital securities.

On 21 March 2022, the perpetual bond issued on 21 March 2017 was fully repaid. Initially, the capital security was issued as at 21 March 2017 for USD600.0 million and then re-opened as at 21 November 2017 for USD200.0 million. An amount was repaid in the 2021 financial year, reducing its amount to USD479.2 million. On 21 March 2022, the remaining amount of USD479.2 million was fully repaid. This capital security was listed on the Singapore Stock Exchange and had a distribution on the capital security of 6.875 percent per annum.

The EUR262.5 million capital security was issued on 31 July 2019 and is listed on the Singapore Stock Exchange. The distribution on the capital security is 7.5 percent per annum until the distribution payment date in July 2024. The capital security may be redeemed at the Company's option in whole, but not in part, in the period starting 90 calendar days before, and ending at, the distribution payment date in July 2024 or any distribution date thereafter upon giving not less than 30 nor more than 60 days' notice to the holders. The early redemption amount payable by the Company shall be the principal amount of the capital security, together with any interest accrued to the date fixed for redemption, all arrears of interest and all additional interest amounts.

The USD400.0 million capital security was issued on 24 September 2021 and is listed on the Singapore Stock Exchange. The distribution on the capital security is 5.875 percent per annum until the distribution payment date in September 2027. The capital security may be redeemed at the Company's option in whole, but not in part, in the period starting 90 calendar days before, and ending at, the distribution payment date in September 2027 or any distribution date thereafter upon giving not less than 30 nor more than 60 days' notice to the holders. The early redemption amount payable by the Company shall be the principal amount of the capital security, together with any interest accrued to the date fixed for redemption, all arrears of interest and all additional interest amounts.

31.3 Currency translation reserve

The currency translation reserve comprises all foreign currency differences arising from the translation of the financial statements of foreign operations, as well as from the translation of liabilities that hedge the Group's net investments in foreign operations.

For the impact of hyperinflation accounting, please refer to note 43.

31.4 Revaluation reserve

The revaluation reserve comprises the movements in fair value measurements of the equity investments that are accounted for at fair value through other comprehensive income. On realisation of these gains or losses (for example, the sale of an equity instrument), the cumulative amounts of this reserve are transferred to retained earnings. Included in the revaluation reserve is a loss of USD79.9 million (30 September 2021: USD34.9 million loss) related to the mark-to-market valuation of equity investments.

31.5 Cash flow hedge reserve

The Group has elected not to apply the cost of hedging option. A change in the fair value of derivatives designated as a cash flow hedge is initially recognised as a cash flow hedge reserve in other comprehensive income. The deferred amount is then released to the Consolidated Statement of Income in the same period during which the hedged transaction affects the Consolidated Statement of Income.

Included in the cash flow hedge reserve is a loss of USD37.4 million (30 September 2021: USD175.2 million loss) related to the effective portion of the changes in fair value of cash flow hedges, net of tax. These cash flow hedges predominantly relate to hedging of interest and currency exposure on corporate loans, currency exposure on future capital and operational expenditures, expected electricity consumption, and price exposure on highly probable future production, purchases and sales of commodities. The cash flow hedge positions on hedging derivatives currently shown in the cash flow hedge reserve will be recycled to the statement of income in the period where the hedged item are recognised. Over time, the overall net impact of the hedged items and hedging instruments together to the Consolidated Statement of Income and other comprehensive income will be minimal.

The cash flow hedge reserves as at 30 September 2022 includes a negative reserve of USD52.2 million relating to the Group's share in the cash flow hedge reserves of equity-accounted investees (30 September 2021: USD56.6 million negative).

31.6 Dividends

The value of the dividends declared on the ordinary shares amount to USD1,721.2 million (FY2021: USD1,116.7 million), representing USD68.8 per share (FY2021: USD44.7 per share). Dividend payments are mostly made in relation to the share redemption by the direct parent company.

32. Loans and borrowings

Accounting policy

Loans and borrowings are recognised initially at fair value net of directly attributable transaction costs. After initial recognition, these items are subsequently measured at amortised cost, applying the effective interest method unless the interest rate has been converted in a hedge relation from fixed into floating by means of a fair value hedge. In that case, the carrying amount is adjusted for the fair value changes caused by the hedged risk.

Borrowings are removed from the Consolidated Statement of Financial Position when the obligation specified in the contract is discharged, cancelled or expired.

When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognised in the Consolidated Statement of Income.

Fees paid on the establishment of loan facilities are recognised as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down. In this case, the fee is deferred until the drawdown occurs. To the extent there is no evidence that it is probable that some or all of the facility will be drawn down, the fee is capitalised as pre-payment for liquidity services and amortised on a straight-line basis over the period of the facility to which it relates.

This note provides information about the contractual terms of the Group's interest-bearing loans and borrowings, which are measured at amortised cost. For more information about the Group's exposure to interest rate, foreign currency and liquidity risk, refer to note 39.

	2022 USD'M	2021 USD'M
Non-current		
Committed unsecured syndicated loans	3,933.7	4,039.2
Private placements	1,052.2	894.3
Listed bonds	1,134.2	1,859.0
Securitisation programmes	300.0	419.1
Puma Energy financing*	1,459.1	1,522.1
Other loans	1,735.3	2,177.9
Total non-current	**9,614.5**	10,911.6
Current		
Committed unsecured syndicated loans	1,263.0	2,226.1
Private placements	118.1	90.8
Listed bonds	635.7	–
Securitisation programmes	5,191.5	5,107.4
Puma Energy financing*	652.3	787.5
Other loans	1,313.6	647.6
Current bank borrowings	20,489.4	25,410.1
Total current	**29,663.6**	34,269.5
Total	**39,278.1**	45,181.1

* Loans and borrowings issued by Puma Energy have not been guaranteed by other Trafigura entities.

G. Notes to consolidated financial statements

Net lease liabilities and debt reconciliation	Non-current debt USD'M	Current debt USD'M	Lease liabilities USD'M	Cash and cash equivalents USD'M	Net lease liabilities and debt USD'M
At 1 October 2021	(10,911.6)	(34,269.5)	(2,572.1)	10,677.5	**(37,075.7)**
Cashflow movements	(1,152.5)	6,678.1	1,230.8	4,203.8	10,960.2
Additions/(reductions)	–	–	(2,645.9)	–	(2,645.9)
Currency translation gains/(losses)	328.9	88.7	–	–	417.6
Reclassifications from long term to short term	2,159.9	(2,159.9)	–	–	–
Other movements	(39.2)	(1.0)	–	–	(40.2)
At 30 September 2022	(9,614.5)	(29,663.6)	(3,987.2)	14,881.3	**(28,384.0)**
As of 1 October 2020	(7,070.0)	(25,783.5)	(2,389.0)	5,757.0	**(29,485.5)**
Effect of business combination	(1,522.1)	(787.5)	(373.3)	322.0	(2,360.9)
Cashflow movements	(4,056.4)	(5,977.3)	1,044.8	4,598.5	(4,390.4)
Additions/(reductions)	–	–	(854.6)	–	(854.6)
Currency translation gains/(losses)	68.5	(38.1)	–	–	30.4
Reclassifications from long term to short term	1,683.1	(1,683.1)	–	–	–
Other movements	(14.7)	–	–	–	(14.7)
At 30 September 2021	(10,911.6)	(34,269.5)	(2,572.1)	10,677.5	**(37,075.7)**

During the financial year ended 30 September 2022, the Group completed a number of important transactions:

- Closing of the Group's new Asian syndicated revolving credit and term loan facilities of USD2.4 billion-equivalent in October 2021. Similar to previous year, the facilities include a sustainability-linked loan structure, with an updated set of KPIs.
- Refinancing of its European multi-currency syndicated revolving credit facilities totalling USD5.3 billion in March 2022. Similar to previous year, the facilities include a sustainability-linked loan structure, with an updated set of KPIs.
- Refinancing of its Japanese yen term loan credit facility (Samurai loan) with a total value of JPY93.75 billion (USD790 million-equivalent at closing exchange rate) in March 2022. In line with the Group's European and Asian revolving credit facilities, and a first for its Samurai loan, the Group structured the three-year tranche as a sustainability-linked loan.
- Closing of a nine-month liquidity facility of USD2.3 billion-equivalent in March 2022.
- Closing of a USD800 million five-year loan agreement, guaranteed by the Government of Germany, acting through the German Export Credit Agency, in September 2022.

The Group was in compliance with all its corporate and financial covenants as at 30 September 2022.

32.1 Terms and debt repayment schedule

The terms and conditions of the outstanding debt (excluding short-term bank borrowings) as at 30 September 2022 are as follows:

Principal		Interest rate	Maturity	Floating/fixed rate debt	< 1 year USD'M	1-5 years USD'M	> 5 years USD'M	Total USD'M
CNH	1,117.6	Hibor + 0.90%	2022 – October	Floating	157.6	–	–	157.6
CNH	4,601.6	3.40%	2022 – October	Fixed	645.4	–	–	645.4
USD	300.0	Libor + 1.10%	2022 – October	Floating	300.0	–	–	300.0
USD	288.0	Libor + 1.20%	2023 – October	Floating	–	288.0	–	288.0
USD	810.5	Libor + 1.20%	2024 – October	Floating	–	810.5	–	810.5
JPY	84,750.0	JPY TONA + 0.85%	2025 – March	Floating	–	585.6	–	585.6
JPY	9,000.0	JPY TONA + 1.00%	2025 – March	Floating	–	62.2	–	62.2
USD	3,270.0	SOFR + 0.80%	2025 – March	Floating	–	1,050.0	–	1,050.0
USD	800.0	SOFR + 1.15%	2027 – September	Floating	160.0	640.0	–	800.0
USD	375.0	SOFR + 1.40%	2027 – September	Floating	–	375.0	–	375.0
EUR	125.0	EURIBOR + 0.85%	2027 – September	Floating	–	122.4	–	122.4
Committed unsecured syndicated loans					1,263.0	3,933.7	–	**5,196.7**
USD	57.5	5.53%	2023 – March	Fixed	57.5	–	–	57.5
USD	53.0	5.55%	2023 – May	Fixed	53.0	–	–	53.0
EUR	101.5	3.50%	2024 – February	Fixed	–	99.4	–	99.4
CNH	700.0	5.00%	2024 – December	Fixed	–	98.2	–	98.2
USD	35.0	4.01%	2025 – March	Fixed	–	35.0	–	35.0
USD	67.0	5.72%	2025 – May	Fixed	–	67.0	–	67.0
EUR	8.5	4.00%	2026 – February	Fixed	–	8.3	–	8.3
USD	37.5	3.87%	2026 – April	Fixed	–	37.5	–	37.5
USD	83.0	4.17%	2027 – March	Fixed	–	83.0	–	83.0
USD	48.5	4.41%	2028 – April	Fixed	–	–	48.5	48.5
USD	20.0	5.86%	2028 – May	Fixed	–	–	20.0	20.0
USD	200.0	6.00%	2028 – September	Fixed	–	–	200.0	200.0
USD	85.0	4.60%	2030 – March	Fixed	–	–	85.0	85.0
USD	117.5	4.89%	2031 – April	Fixed	–	–	117.5	117.5
USD	200.0	6.33%	2036 – July	Fixed	7.6	29.7	123.1	160.4
Private placements					118.1	458.1	594.1	**1,170.3**
USD	488.1	5.25%	2023 – March	Fixed	468.0	–	–	468.0
CHF	165.0	2.25%	2023 – May	Fixed	167.7	–	–	167.7
CHF	55.0	3.25%	2024 – September	Fixed	–	55.9	–	55.9
USD	500.0	5.88%	2025 – September	Fixed	–	493.8	–	493.8
EUR	500.0	3.88%	2026 – February	Fixed	–	488.7	–	488.7
USD	160.0	–	2026 – July	Fixed	–	95.8	–	95.8
Listed bonds					635.7	1,134.2	–	**1,769.9**
USD	465.0	Libor + 1.0%	2022 – November	Floating	89.6	–	–	89.6
USD	50.0	Libor + 0.5%	2022 – November	Floating	9.7	–	–	9.7
USD	225.7	Libor + 4.25%	2023 – March	Floating	225.7	–	–	225.7
USD	139.5	Libor + 0.53%	2024 – July	Floating	–	139.5	–	139.5
USD	139.5	1.09%	2024 – July	Fixed	–	139.5	–	139.5
USD	21.0	1.79%	2024 – July	Fixed	–	21.0	–	21.0
USD	5,459.4	Various	Various	Floating	4,866.5	–	–	4,866.5
Securitisation programmes					5,191.5	300.0	–	**5,491.5**
USD	462.5	SOFR +1.80%	2023 – May	Floating	250.0	–	–	250.0
USD	105.0	SOFR +2.00%	2024 – May	Floating	–	105.0	–	105.0
USD	50.0	5.87%	2023 – January	Fixed	49.9	–	–	49.9
GBP	128.6	5.00%	2023 – July	Fixed	128.6	–	–	128.6
EUR	66.7	2.65%	2024 – May	Fixed	32.6	29.9	–	62.5
USD	600.0	5.13%	2024 – October	Fixed	–	593.2	–	593.2
USD	750.0	5.00%	2026 – January	Fixed	–	730.0	–	730.0
USD	197.1	Various	Various	Various	126.9	–	1.0	127.9
Other short term loans					64.3	–	–	64.3
Puma Energy financing (not guaranteed by other Trafigura entities)					652.3	1,458.1	1.0	**2,111.4**
Other Loans					1,313.6	1,518.2	217.1	3,048.9
Total					9,174.2	8,802.3	812.2	**18,788.7**

For non-current assets pledged under loans and borrowings agreements, refer to note 19.

G. Notes to consolidated financial statements

33. Provisions

Accounting policy

The Group recognises provisions for liabilities and onerous contracts that have been incurred as of the balance sheet date and can be reliably estimated. A provision is recognised when (i) the Group has a present obligation (legal or constructive) as a result of a past event; (ii) it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation; and (iii) an estimate can be made of the amount of the obligation.

Claims, disputes and legal proceedings

Provisions for claims, disputes and legal proceedings are recorded if it is probable that the Group will be liable in a proceeding, for the estimated amount at which the liability can be settled. If no reliable estimate can be made, a disclosure will be made for claims, disputes or legal proceedings, for which the amount to be settled is expected to be significant.

Restoration, rehabilitation and decommissioning

Restoration, rehabilitation and decommissioning costs arising from the installation of plant and other site preparation work, discounted to their net present value, are provided for and capitalised at the time such an obligation arises. The costs are charged to the Consolidated Statement of Income over the life of the operation through depreciation of the asset and the unwinding of the discount on the provision.

Onerous contracts

A provision for onerous contracts is recognised when the expected benefits to be derived by the Group from a contract are lower than the unavoidable cost of meeting its obligations under the contract. The provision is measured at the present value of the lower of the expected cost of terminating the contract and the expected net cost of continuing with the contract. Before a provision is established, the Group recognises any impairment loss on the assets associated with that contract.

Key accounting estimate and judgement

Provisions

The amount recognised as a provision, including tax, legal, restoration and rehabilitation, contractual and other exposures or obligations, is the best estimate of the consideration required to settle the related liability, including any related interest charges, taking into account the risks and uncertainties surrounding the obligation. The Group assesses its liabilities and contingencies based upon:

- Best information available (for example, relating to timing and scope of the obligation, future cost level, legal assessment and established precedents),
- Relevant tax laws, and
- Other appropriate requirements.

Reference is also made to note 38 – Commitments and contingencies.

Restoration, rehabilitation and decommissioning costs

A provision for future restoration, rehabilitation and decommissioning costs requires estimates and assumptions to be made around the relevant regulatory framework, the magnitude of the possible disturbance and the timing, extent and costs of the required closure and rehabilitation activities. To the extent that the actual future costs differ from these estimates, adjustments will be recorded and the Consolidated Statement of Income could be affected. The provisions, including the estimates and assumptions contained therein, are reviewed regularly by management.

	Decommissioning, rehabilitation and restoration	Employee benefits	Other	**Total**
	USD'M	USD'M	USD'M	**USD'M**
Opening balance 1 October 2021	277.7	64.3	107.9	449.9
Additions	22.7	2.6	109.2	134.5
Reversals	(9.8)	(1.5)	(9.3)	(20.6)
Amounts charged against provisions	(19.5)	(26.4)	(13.7)	(59.6)
Unwind of discount	7.3	–	0.2	7.5
Remeasurements and other movements	(25.3)	(6.2)	(6.0)	(37.5)
Closing balance 30 September 2022	253.1	32.8	188.3	**474.2**
Non-current	225.0	30.0	135.6	390.6
Current	28.1	2.8	52.7	83.6
Closing balance 30 September 2022	253.1	32.8	188.3	**474.2**

	Decommissioning, rehabilitation and restoration	Employee benefits	Other	**Total**
	USD'M	USD'M	USD'M	**USD'M**
Opening balance 1 October 2020	218.5	75.7	77.3	371.5
Additions	21.7	2.6	12.8	37.1
Reversals	(9.4)	–	(0.6)	(10.0)
Additions through business combinations	7.7	8.2	28.0	43.9
Amounts charged against provisions	(7.9)	(13.0)	(9.3)	(30.2)
Unwind of discount	34.6	–	0.2	34.8
Remeasurements and other movements	12.5	(9.2)	(0.5)	2.8
Closing balance 30 September 2021	277.7	64.3	107.9	**449.9**
Non-current	266.2	58.0	86.5	410.7
Current	11.5	6.3	21.4	39.2
Closing balance 30 September 2021	277.7	64.3	107.9	**449.9**

Provisions for decommissioning, rehabilitation and restoration costs are recognised as a result of the environmental commitment the Group has made with local authorities and its obligations to undertake site reclamation and remediation in connection with its mining and downstream activities.

Included in Other are provisions for litigation and disputes, and onerous contracts.

34. Other non-current liabilities

	2022	2021
	USD'M	USD'M
Non-financial hedged items	5.4	84.9
Other	516.5	467.0
Total	**521.9**	551.9

For further information on the non-financial hedged items, please refer to note 40.2.

35. Trade and other payables

Accounting policy

Trade and other payables represent liabilities for goods and services provided by suppliers to the Group prior to the end of the financial year that are unpaid. They are presented as current liabilities unless payment is not due within 12 months after the reporting period.

Trade and other payables are initially recognised at their fair value and subsequently measured at amortised cost using the effective interest method.

Accrued costs and expenses

Accrued cost and expenses relate to purchases and expenses made before the year end that have not been invoiced at the balance sheet date. Reasons for such delays include the need to determine final pricing, quantity and quality analysis. All are typical of the industry in which the Group operates.

Provisional pricing features

Trade and other receivables and trade and other payables related to commodity contracts, including provisional pricing features, are measured at fair value through profit or loss applying a level 2 valuation. The related net changes in fair value are presented under material, transportation and storage.

	2022 USD'M	2021 USD'M
Trade creditors	5,367.9	5,255.7
Accrued costs and expenses	17,192.2	16,620.9
Related parties	107.9	18.4
Other creditors	2,981.5	919.6
Total	**25,649.5**	22,814.6

The Group's exposure to currency and liquidity risk related to trade and other payables is disclosed in note 39.3.

Total trade and other payables related to contracts including provisional pricing features amount to USD8.7 billion (30 September 2021: USD9.1 billion).

Other creditors primarily relate to collateral for OTC derivatives.

36. Other current liabilities

	2022 USD'M	2021 USD'M
Non-financial hedged items	89.5	222.8
Deferred revenue	679.3	426.4
Other	793.3	777.9
Total	**1,562.1**	1,427.1

Refer to note 40.2 for further information on the non-financial hedged items.

As per 30 September 2022, Other includes payables relating to the receipt of certain commodities that are due to be repaid within one year. At 30 September 2021, the Other balance includes amounts payable resulting from the acquisition of Puma Energy. Please refer to note 7.1.

37. Offsetting of financial assets and liabilities

Accounting policy

Financial assets and liabilities are offset and the net amount presented in the Consolidated Statement of Financial Position if, and only if, the Group has a legal right to offset the amounts and intends either to settle on a net basis or to realise the asset and settle the liability simultaneously.

In accordance with IAS 32, the Group reports financial assets and liabilities on a net basis in the Consolidated Statement of Financial Position only if there is a legally enforceable right to set off the recognised amounts and there is intention to settle on a net basis, or to realise the asset and settle the liability simultaneously. The financial assets and liabilities subject to offsetting, enforceable master netting and similar agreements as at 30 September 2022 and 2021 were as follows:

	Amounts eligible for set off under netting agreements				
2022	Gross amount USD'M	Amounts offset USD'M	Net amount USD'M	Amounts not subject to netting agreements USD'M	Total presented in the Consolidated Statement of Financial Position USD'M
Related parties	1,415.1	(78.1)	1,337.0	–	1,337.0
Derivative assets	11,358.4	(5,899.9)	5,458.5	2,845.7	8,304.2
Related parties	(186.0)	78.1	(107.9)	–	(107.9)
Derivative liabilities	(15,000.7)	5,899.9	(9,100.8)	(1,533.8)	(10,634.6)

	Amounts eligible for set off under netting agreements				
2021	Gross amount USD'M	Amounts offset USD'M	Net amount USD'M	Amounts not subject to netting agreements USD'M	Total presented in the Consolidated Statement of Financial Position USD'M
Related parties	250.7	(16.9)	233.8	–	233.8
Derivative assets	10,250.9	(8,498.5)	1,752.4	1,189.7	2,942.1
Related parties	(226.1)	16.9	(209.2)	–	(209.2)
Derivative liabilities	(12,651.8)	8,498.5	(4,153.3)	(974.2)	(5,127.5)

For the financial assets and liabilities subject to enforceable master netting or similar arrangements above, each agreement between the Group and the counterparty allows for net settlement of the relevant financial assets and liabilities in the ordinary course of business. Where practical reasons may prevent net settlement, financial assets and liabilities may be settled on a gross basis. However, each party to the master netting or similar agreement will have the option to settle all such amounts on a net basis in the event of default of the other party.

G. Notes to consolidated financial statements

38. Commitments and contingencies

The Company and its subsidiaries are party to a number of legal claims and proceedings arising out of their business operations. The Company believes that the ultimate resolution of these claims and proceedings will not, in the aggregate, have a material adverse effect on the Group's financial position, income or cash flows. Such legal claims and proceedings, however, are subject to inherent uncertainties and the outcome of individual matters is unpredictable. It is possible that the Group could be required to make expenditures, in excess of established provisions, in amounts that cannot be reasonably estimated.

The total contingent liabilities related to trade finance instruments, such as letters of credit and guarantees, as at 30 September 2022 amount to USD9,980.7 million (30 September 2021: USD10,477.8 million).

The Group had outstanding commitments at the end of 30 September 2022 and 30 September 2021 as follows:

	2022 USD'M	2021 USD'M
Service arrangement contracts	1,880.1	1,157.0
Long-term lease commitments – not yet started	476.8	270.6
Short-term lease contracts	515.7	63.4
Subtotal commitments	**2,872.6**	1,491.0
Assets under construction	114.4	132.6
Total commitments	**2,987.0**	1,623.6

	2022 USD'M	2021 USD'M
Less than one year	995.1	633.4
Later than one year and less than five years	1,301.3	841.7
Later than five years	576.2	15.9
Commitments excluding assets under construction	**2,872.6**	1,491.0

Guarantees include guarantees to trading partners in the normal course of business.

39. Financial risk management objectives and policies

The Group is exposed to a number of different financial risks arising from normal business exposures as well as its use of financial instruments, including market risks relating to commodity prices, foreign currency exchange rates, interest rates and equity prices; credit risk; and liquidity risk.

Prudently managing these risks is an integral element of the Group's business and has been institutionalised since the Group's foundation. Risk management guidelines are established at senior management level. The various risks the Group is exposed to are managed through a combination of internal procedures, such as strict control mechanisms and policies, as well as external third parties such as the derivative, insurance and bank markets. As a rule, the Group actively manages and lays off where possible a large majority of the risks inherent to its activity. The Group's conservative risk management process is designed to:

- Provide a full and accurate awareness of risks throughout the Group;
- Professionally evaluate and monitor these risks through a range of risk metrics;
- Limit risks via a dynamic limit setting framework;
- Manage risks using a wide range of hedging instruments and strategies; and
- Ensure a constant dialogue between trading desks, risk managers and senior management.

The three main reinforcing components of the Group's risk management process are the Chief Risk Officer, the Market Risk Management Committee and the trading teams.

The Chief Risk Officer is independent of the revenue-producing units and reports to the Chief Operating Officer and the Management Committee. The Chief Risk Officer has primary responsibility for assessing and monitoring the Group's market risks. The Chief Risk Officer's team liaises directly with the trading teams to analyse new opportunities and ensure that risk assessments adapt to changing market conditions. The Chief Risk Officer's team also ensures the Group's risk management capabilities incorporate ongoing advances in technology and risk management modelling capabilities.

The Market Risk Management Committee, which comprises members of the Management Committee and the Chief Risk Officer, is responsible for applying the Group's risk management capabilities towards improving the overall performance of the Group. In the reporting period, the Market Risk Management Committee met at least weekly to discuss and set risk and concentration limits, review changing market conditions and analyse new market risks and opportunities.

The Group's trading teams provide deep expertise in hedging and risk management in the specific markets each team operates in. While the trading teams have front line responsibility for managing the risks arising from their activities, the Group's process ensures a strong culture of escalation and accountability, with well-defined limits, automatic notifications of limit overages and regular dialogue with the Chief Risk Officer and Market Risk Management Committee.

39.1 Market risk

Market risk is the risk of loss in the value of the Group's positions as a result of changes in market prices. The Group holds positions primarily to ensure the Group's ability to meet physical supply commitments to the Group's customers, to hedge exposures arising from these commitments and to support the Group's investment activities. The Group's positions change due to changing customer requirements and investment opportunities. The value of the Group's positions is accounted for at fair value and therefore fluctuates on a daily basis due to changes in market prices. Categories of market risk the Group is exposed to include:

- Commodity price risk, resulting from exposures to changes in spot prices, forward prices and volatilities of commodities, such as crude oil, petroleum products, natural gas, base metals, coal and iron ore.
- Currency rate risk, resulting from exposures to changes in spot prices, forward prices and volatilities of currency rates.
- Interest rate risk, resulting from exposures to changes in the level, slope and curvature of yield curves, the volatilities of interest rates, and credit spreads.
- Equity price risk, resulting from exposures to changes in prices and volatilities of individual equities and equity indices.

The Group hedges a large majority of price risks arising from its activities. When there is a difference in the characteristics of available hedging instruments and the corresponding commodity price exposures, the Group remains exposed to a residual price risk referred to as basis risk. Dynamically managing the basis risk that arises from the Group's activities requires specialist skills and is a core focus of the Group's trading and risk management teams.

Value at Risk

Value at Risk (VaR) is a statistical estimate of the potential loss in value of the Group's positions and unsold in-transit material due to adverse market movements. The Group calculates VaR over a one-day time horizon with a 95 percent confidence level. The Group uses an integrated VaR model that captures risks including commodity prices, interest rates, equity prices and currency rates. The Group's integrated VaR model facilitates comparison of VaR across portfolios comprised of a range of different risk exposures. The Group believes average VaR over the year reflects the most representative understanding of the Group’s sensitivity to such risks.

Average market risk VaR (one-day 95 percent) during the year was USD199.8 million (1.33 percent of Group equity) compared to USD47.9 million in the previous financial year (0.45 percent of Group equity). The Group's Management Committee has established guidance to maintain VaR (one-day 95 percent) below one percent of Group equity. This guidance was exceeded in FY2022 due to the extreme and exceptional volatility experienced following the start of the war in Ukraine. Actions were swiftly taken to bring back the VaR within acceptable risk limits, including but not limited to reducing stocks and traded volumes. Thanks to these efforts, the average VaR in the second half of the year was USD142.9 million (0.95 percent of Group equity), with further reduction in the fourth quarter of the year to USD115.8 million, 0.77 percent of Group equity.

The Group is aware of the inherent limitations to VaR and therefore uses a variety of risk measures and risk management techniques to create a robust risk management process. Limitations of VaR include:

- VaR does not estimate potential losses over longer time horizons where the aggregate moves may be extreme.
- VaR does not take account of the liquidity of different risk positions and therefore does not estimate the losses that might arise if the Group liquidated large positions over a short period of time.
- VaR is based on statistical analysis of historical market data. If this historical data is not reflective of futures market prices movements, VaR may not provide accurate predictions of future possible losses.

The Group's VaR calculation covers its trading businesses in the crude oil, refined oil products, petrochemical, natural gas, metals, concentrates, coal, iron ore and freight markets, and assesses the open-priced positions that are those subject to price risk, including inventories of these commodities. The Group's VaR model is based on historical simulations, with full valuation of more than 5,000 market risk factors.

VaR is calculated based on simultaneously shocking these risk factors. More recent historical price data is more heavily weighted in these simulations, which enables the VaR model to adapt to more recent market conditions and improves the accuracy of the Group's estimates of potential losses.

The Group's VaR model utilises advanced statistical techniques that incorporate the non-normal price dynamics that are an important feature of commodity markets. The Group's VaR model is continuously and automatically calibrated and back-tested to ensure that its out-of-sample performance adheres to well-defined targets. In addition, the Group's VaR model is regularly updated to ensure it reflects the current observed dynamics of the markets the Group is active in.

The Group has made a significant, ongoing investment in risk management systems, including a reporting system that automatically distributes customised risk reports throughout the Group on a daily basis. These reports provide up-to-date information on each team’s risk position using industry standard measures, including 95 percent and 99 percent VaR and performance indicators such as Sharpe ratios.

All trading books have well-defined VaR risk limits. Management and the trading teams are automatically notified whenever a book nears its risk limit, as well as whenever a VaR limit breach occurs. In addition, the Group's deals desk management team is automatically notified whenever statistically anomalous changes occur in the profit and loss of any deal.

For senior management, the daily reports provide a comprehensive view of the Group's risk, classified according to various risk factors. These reports emphasise the risk diversification created by the Group’s varied activities and highlight any excessive risk concentrations.

G. Notes to consolidated financial statements

39.2 Credit risk

Credit risk is the risk of financial loss to the Group if a customer or counterparty to a financial instrument or physical contract fails to meet its contractual obligations, and arises principally from the Group's receivables from customers and investment in debt and equity securities.

The Group has a formalised credit process with credit officers in key locations around the world. Strict credit limits are set up for each counterparty on the basis of detailed financial and business analysis. These limits are constantly monitored and revised in light of counterparty or market developments and the amount of exposure relative to the size of the Group's Consolidated Statement of Financial Position. The Group makes extensive use of the banking and insurance markets to cover any counterparty or country risks that are in excess of its credit limits.

The risk management monitoring and decision-making functions are centralised and make extensive use of the Group's integrated bespoke IT system. The Group conducts transactions with the following major types of counterparties:

- Physical commodity counterparties spread across the vertical chains for both oil and bulk (e.g. producers, refiners/smelters and end-users). Sales to investment grade and non-investment grade counterparties are made on open terms up to internally approved credit limits. Exposures above such limits are subject to payment guarantees.
- Payment guarantee counterparties (e.g. prime financial institutions from which the Group obtains payment guarantees).
- Hedge counterparties comprising a number of prime financial institutions and physical participants in the relevant markets. There is no significant concentration of risk with any single counterparty or group of counterparties. Collateral is obtained from counterparties when the Group's exposure to them exceeds approved credit limits. It is the Group's policy to have ISDA Master Agreements or ISDA-based Long-Form Confirmation Agreements in place with all hedging counterparties.

The Group trades in all major geographic regions. Where appropriate, guarantees, insurance and letters of credit are used to reduce payment or performance risk. The Group has gross credit exposure in locations across the world with a concentration in emerging markets. Most of this exposure is transferred to third parties, while the Group retains between 10 percent and 20 percent on average of the individual exposures.

The Group's maximum exposure to credit risk, without considering netting agreements or without taking into account of any collateral held or other credit enhancements, is equal to the carrying value of its financial assets as indicated in the Consolidated Statement of Financial Position plus the guarantees to third parties and associates.

The Group has amounts and guarantees outstanding related to countries that are affected by sanctions currently imposed by the United States and the European Union. The Group analysed the sanctions and exposures and concluded that these do not materially impact the Group's positions.

39.2.1 Concentration of credit risk

Concentrations of credit risk exist when changes in economic, industry or geographical factors similarly affect the Group's counterparties whose aggregate credit exposure is significant in relation to the Group's total credit exposure. The carrying amount of financial assets represents the maximum credit exposure. The Group determines concentrations of credit risk by monitoring the country profile of its third-party trade receivables on an on-going basis.

The Group has a diverse customer base, with no customer representing more than 1.8 percent of its revenues over the 12-month period ended 30 September 2022 (FY2021: 2.5 percent).

Please refer to note 26 for the aging of trade and other receivables at the reporting date.

39.2.2 Financial assets that are not past due

Trade and other receivables that are not past due are creditworthy debtors with good payment records with the Group. Cash and cash equivalents and derivatives that are not past due are placed with or entered into with reputable financial institutions or companies with high credit ratings and no history of default. The credit quality of trade and other receivables is assessed based on a strict credit policy. The Group has monitored customer credit risk by grouping trade and other receivables based on their characteristics.

Based on the Group's monitoring of customer credit risk, the Group believes that, except as indicated in note 26, no material expected credit loss allowance is necessary in respect of trade receivables not past due.

39.2.3 Impairment of financial assets

Information regarding impairment of financial assets is disclosed in note 14 (Impairment) and note 26 (Trade and other receivables).

39.2.4 Guarantees

The Group's policy is to provide financial guarantees only to wholly owned subsidiaries and trading partners in the normal course of business. As part of the Group's ordinary physical commodity trading activities, Trafigura Group Pte. Ltd. may act as guarantor by way of issuing guarantees accepting responsibility for subsidiaries' contractual obligations.

39.3 Liquidity risk

Liquidity risk is the risk that the Group is unable to meet its payment obligations when due or that it is unable, on an on-going basis, to borrow funds in the market on an unsecured or secured basis at an acceptable price to fund actual or proposed commitments.

The Group's approach to managing liquidity is to ensure, as far as possible, that it will always have sufficient cash and cash equivalents and ready sources of committed funding available to meet anticipated and unanticipated funding needs. Sound financial management with a focus on liquidity has been instrumental to the Group's success. The Group has demonstrated the ability to raise the appropriate types of financing to match the needs of the business and to tap various investor bases (e.g. syndicated loan markets, trade finance markets, bond markets, private placement markets and securitisation), maturities and geographies.

The Group manages its treasury and liquidity risks maintaining a strong liquidity position through the following:

- Targeting immediately available cash on hand of a minimum of USD2.0 billion under normal conditions (higher in the case of extreme volatility);
- Maintaining transactional lines which allow the Group to mark-to-market financing to the value of the underlying physical assets. Mark-to-market financing is performed weekly (or intra-weekly in the case of extreme volatility) and provides an additional source of liquidity that is not available to competitors, which are financed purely from revolving credit facilities and/or capital markets securities;
- Committed unsecured credit facilities;
- Maintaining headroom under transactional trade finance lines and committed revolving credit facilities; and
- Reasonable distribution of profit (in order to generate retained earnings) and subordination of repurchased, but not yet paid, equity.

The maturity analysis of the Group's financial liabilities based on the contractual terms is as follows:

	0-1 years USD'M	1-5 years USD'M	> 5 years USD'M	**Total USD'M**
30 September 2022				
Financial liabilities				
Current and non-current loans and borrowings	29,663.6	8,802.3	812.2	39,278.1
Trade and other payables	25,649.5	–	–	25,649.5
Expected interest payments on committed lines until maturity	554.8	736.6	84.6	1,376.0
Derivative financial liabilities	7,910.9	2,710.7	13.0	10,634.6
Total financial liabilities	63,778.8	12,249.6	909.8	**76,938.2**

	0-1 years USD'M	1-5 years USD'M	> 5 years USD'M	**Total USD'M**
30 September 2021				
Financial liabilities				
Current and non-current loans and borrowings	34,269.8	10,279.4	631.9	45,181.1
Trade and other payables	22,814.6	–	–	22,814.6
Expected interest payments on committed lines until maturity	318.3	614.7	154.2	1,087.2
Derivative financial liabilities	4,323.2	767.8	39.6	5,130.6
Total financial liabilities	61,725.9	11,661.9	825.7	**74,213.5**

39.4 Interest rate risk

Despite borrowing mostly floating rate debt, the Group is not exposed to significant interest rate risk because most of its debt is short term (ranging from a few weeks to a few months) and each new commercial transaction is priced based on current interest rate levels. Interest rate risk of the Group is mainly applicable to the long-term debt of the Group, which is mostly floating rate.

From time to time, the Group enters into interest rate derivative transactions to lock in current interest rate levels. For instance, interest rate swaps provide a method of reducing the Group's exposure to floating interest rates. To realise the desired matching of derivative results with the hedged interest rate payments, cash flow hedge accounting is applied and the derivatives are designated as hedging instruments. The derivatives are carried on balance sheet and their effectiveness is tested on a quarterly basis.

Interest rate benchmark reform

In August 2020, the IASB issued Interest Rate Benchmark Reform Phase 2, Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 (the Phase 2 Amendments). The Phase 2 Amendments are effective from the 2022 financial year onwards for Trafigura.

Trafigura has set up an internal working group to monitor market developments and manage transition to new alternative benchmark rates. The internal working group has identified various workstreams that are catering to all the aspects of transition.

Financial instruments and relevant agreements linked to discontinued benchmarks have already been transitioned to alternative benchmark rates as at the end of the year and the Group is in the process of mitigating the remaining financial instruments and agreements that are linked to other IBORs not yet transitioned on or before the expected cessation date for respective benchmarks. USD London Inter-bank Offered rate (LIBOR) is the most significant IBOR for the Group.

Below is the table reflecting the significant LIBOR exposures that were yet to be transitioned as at 30 September 2022:

	Interest rate Benchmark	Notional USD'M	Assets/ (Liabilities) USD'M
	USD LIBOR	–	1,475.1
Non-derivative financial assets	EUR IBOR	–	234.6
	USD LIBOR	–	(8,274.2)
Non-derivative financial liabilities	EUR IBOR	–	(199.5)
Interest-rate swaps	USD LIBOR	2,853.1	111.8

All the derivative contracts not transitioned to the new alternative benchmark rate by the end of transition period will be transitioned through ISDA fall-back protocol as the Group and all the bank counterparties that the Group trades with have agreed to adhere to ISDA fall-back protocols.

39.5 Currency risk

The Group has few exposures to foreign currency risk on its trading activities and those that do exist are hedged out. The Group does not use financial instruments to hedge the translation risk related to equity and earnings of foreign subsidiaries and non-consolidated companies.

The Group uses cross-currency swaps to hedge currency risk on the principal and related payments of foreign currency denominated loans and bonds for which cash flow hedge accounting is applied. The hedge relationship is expected to be highly effective due to the matching of critical terms between the underlying hedged item and the associated hedge instrument.

The periods when the cash flows are expected to occur are similar to the periods when the cash flows on the foreign currency denominated loans and bonds occur as indicated in notes 31 and 39.3. Ineffectiveness may arise (i) if the underlying interest reference rate is divergent to the underlying reference rate in the Group's debt agreements; (ii) to the extent that the hedging instrument is already in the money or out of the money at the point of designation (compared to the hypothetical derivative that must be created on market); (iii) when the timing of the hedging instrument goes beyond the hedged item and it is not considered highly probable that the hedged item will be refinanced beyond its current maturity date; or (iv) if the hedging instrument is for an amount greater than the hedged item.

G. Notes to consolidated financial statements

39.6 Capital management

The Group's policy is to maintain a strong capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business.

The Company's immediate parent, Trafigura Beheer B.V., is exclusively owned by employees of the Group. This shareholding arrangement leads to an alignment of the long-term interests of the Group and its management team. By virtue of having its own capital at risk, senior and middle management are incentivised to take a long-term view of the Group's overall performance and to protect its capital.

The Group's capital management aims to ensure that it meets financial covenants attached to the interest-bearing loans and borrowings that define capital structure requirements. Breaches in meeting the financial covenants would permit the lenders to immediately call loans and borrowings. There have been no breaches in the financial covenants of any loans and borrowing in the current period.

The Group monitors its capital adequacy using an adjusted debt-to-equity ratio, which is adjusted debt divided by the Group's equity. For this purpose, the adjusted debt metric represents the Group's total non-current and current debt less cash, deposits, readily marketable inventories (including purchased and pre-paid inventories which are being released), debt related to the Group's receivables securitisation programme and the non-recourse portion of loans from third parties.

The Company's long-term average target adjusted debt-to-equity ratio is 1.0x. A negative adjusted debt figure means that the combined adjustments are larger than the debt amount. The Company's adjusted net debt-to-equity ratio at the end of the reporting period was as follows:

	2022 USD'M	2021 USD'M
Non-current loans and borrowings	9,614.5	10,911.6
Current loans and borrowings	29,663.6	34,269.5
Total debt	**39,278.1**	45,181.1
Adjustments		
Cash and cash equivalents	14,881.3	10,677.5
Deposits	642.0	460.0
Inventories (including purchased and pre-paid inventories)	23,873.6	30,508.8
Receivables securitisation debt	5,390.7	5,150.6
Non-recourse debt	1,607.1	555.4
Adjusted total debt	**(7,116.6)**	(2,171.2)
Group equity	**15,078.6**	10,545.6
Adjusted debt to Group equity ratio at the end of the year	**(0.47)**	(0.21)

40. Hedging activities and derivatives

The Group utilises derivative financial instruments (shown separately in the Consolidated Statement of Financial Position) to hedge its primary market risk exposures, which are primarily risks related to commodity price movements and, to a lesser extent, exposure to foreign currency exchange rates and interest rate movements. Commodity derivative contracts may be utilised to hedge against commodity price risk exposures in relation to physical purchase and sales contracts, including inventory. Commodity swaps, options and futures are used to manage price and timing risks in conformity with the Group's risk management policies.

Accounting policy

Derivative financial instruments

Derivative instruments, such as physical contracts to sell or purchase commodities that do not meet the own use exemption, are initially recognised at fair value when the Group becomes a party to the contractual provisions of the instrument, and are subsequently remeasured at fair value at the end of each reporting period. Any attributable transaction costs are recognised in the Consolidated Statement of Income as incurred. Derivatives are carried as financial assets when the fair value is positive and as financial liabilities when the fair value is negative.

Gains and losses on derivative instruments for which hedge accounting is not applied are recognised in materials, transportation and storage costs.

Hedge accounting

Generally, the Group does not apply hedge accounting, but in some instances, it may elect to apply hedge accounting. Those derivatives qualifying and designated as hedges are either:

(i) A **cash flow hedge** of the change in cash flows to be received or paid relating to a recognised asset or liability or a highly probable transaction, or

(ii) A **fair value hedge** of the change in fair value of a recognised asset or liability or an unrecognised firm commitment.

At the inception of a hedge relationship, the Group formally designates and documents the hedge relationship to which it wishes to apply hedge accounting and the risk management objective and strategy for undertaking the hedge.

The documentation includes identification of the hedging instrument, the hedged item, the nature of the risk being hedged and how the Group will assess whether the hedging relationship meets the hedge effectiveness requirements (including the analysis of sources of hedge ineffectiveness and how the hedge ratio is determined). A hedging relationship qualifies for hedge accounting if it meets all of the following effectiveness requirements:

- There is 'an economic relationship' between the hedged item and the hedging instrument.
- The effect of credit risk does not 'dominate the value changes' that result from that economic relationship.
- The hedge ratio of the hedging relationship is the same as that resulting from the quantity of the hedged item that the Group actually hedges and the quantity of the hedging instrument that the Group actually uses to hedge that quantity of hedged item.

If the hedge ratio for risk management purposes is no longer optimal but the risk management objective remains unchanged and the hedge continues to qualify for hedge accounting, the hedge relationship will be re-calibrated by adjusting either the volume of the hedging instrument or the volume of the hedged item so that the hedge ratio aligns with the ratio used for risk management purposes. Any hedge ineffectiveness is calculated and accounted for at the time of the hedge relationship re-calibration.

When a hedging instrument expires, or is sold or terminated, or when a hedge no longer meets the criteria for hedge accounting, any cumulative deferred gain or loss and deferred costs of hedging in equity are reclassified to the Consolidated Statement of Income when the underlying hedged item is realised in the Consolidated Statement of Income.

Cash flow hedge

The effective portion of the gain or loss on the hedging instrument is recognised in other comprehensive income in the cash flow hedge reserve, while any ineffective portion is recognised immediately in the Consolidated Statement of Income. The cash flow hedge reserve is adjusted to the lower of the cumulative gain or loss on the hedging instrument and the cumulative change in fair value of the hedged item.

The Group uses forward currency contracts as hedges against its exposure to foreign currency risk in forecast transactions and firm commitments, as well as forward commodity contracts for its exposure to volatility in the commodity prices. The ineffective portion relating to foreign currency contracts and commodity contracts is recognised in materials, transportation and storage costs.

The amounts accumulated in other comprehensive income are accounted for depending on the nature of the underlying hedged transaction. If the hedged transaction subsequently results in the recognition of a non-financial item, the amount accumulated in equity is removed from the separate component of equity and included in the initial cost or other carrying amount of the hedged asset or liability. This is not a reclassification adjustment and will not be recognised in other comprehensive income for the period. This also applies where the hedged forecast transaction of a non-financial asset or non-financial liability subsequently becomes a firm commitment for which fair value hedge accounting is applied.

For any other cash flow hedges, the amount accumulated in other comprehensive income is reclassified to profit or loss as a reclassification adjustment in the same period or periods during which the hedged cash flows affect profit or loss.

If cash flow hedge accounting is discontinued, the amount that has been accumulated in other comprehensive income must remain in accumulated other comprehensive income if the hedged future cash flows are still expected to occur. Otherwise, the amount will be immediately reclassified to profit or loss as a reclassification adjustment. After discontinuation, once the hedged cash flow occurs, any amount remaining in accumulated other comprehensive income must be accounted for depending on the nature of the underlying transaction as described above.

Fair value hedge

The Group elects to apply fair value hedge accounting to hedge certain risk components of non-financial hedged items. When applicable, the Group designates derivative hedging instruments as fair value hedges in relationship to the hedged item. The hedged item may be individual risk components, which are separately identifiable and reliably measurable.

The hedged item is accounted for at fair value through profit and loss, and reflected in the Consolidated Statement of Financial Position as either a recognised asset or liability or an unrecognised firm commitment. Each identified risk component of the hedged item will be revalued at each period with its corresponding benchmark accounted for at fair value and recognised through profit and loss. Further, it is reflected on the Consolidated Statement of Financial Position as either a recognised asset or liability or an unrecognised firm commitment.

A change in the fair value of derivatives designated as a fair value hedge is reflected together with the change in the fair value of the hedged item in the Consolidated Statement of Income.

If the hedged item is derecognised, the unamortised fair value is recognised immediately in profit or loss.

Current versus non-current classification

Derivative instruments that are not designated as effective hedging instruments are classified as current or non-current, or separated into current and non-current portions based on an assessment of the facts and circumstances (i.e. the underlying contractual cash flows). Where the Group will hold a derivative as an economic hedge (and does not apply hedge accounting) for a period beyond 12 months after the reporting date, the derivative is classified as non-current (or separated into current and non-current portions).

Key accounting estimate and judgement

Valuation of financial assets, including derivative and level 3 instruments

Derivative instruments are carried at fair value and the Group evaluates the quality and reliability of the assumptions and data used to measure fair value in the three hierarchy levels (levels 1, 2 and 3) as prescribed by IFRS 13. Fair values are determined in the following ways: externally verified via comparison to quoted market prices in active markets (level 1); by using models with externally verifiable inputs (level 2); or by using alternative procedures such as comparison to comparable instruments and/or using models with unobservable market inputs requiring the Group to make market-based assumptions (level 3). For more details, please refer to note 41, which includes an overview of the fair value hierarchy and applied valuation methods.

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by re-assessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

	2022 USD'M	2021 USD'M
Physical forwards	5,550.3	1,846.5
OTC derivatives	1,052.5	543.6
Futures	66.6	95.1
Interest-rate swaps	263.5	25.9
Cross-currency swaps	2.2	10.2
Other financial derivatives	1,369.1	432.2
Derivative assets	**8,304.2**	2,953.5
Non-current	1,125.2	331.8
Current	7,179.0	2,621.7
Derivative assets	**8,304.2**	2,953.5

	2022 USD'M	2021 USD'M
Physical forwards	5,899.1	3,291.1
OTC derivatives	3,190.6	1,535.7
Futures	91.8	10.7
Interest-rate swaps	39.2	20.6
Cross-currency swaps	281.2	51.3
Other financial derivatives	1,132.7	221.2
Derivative liabilities	**10,634.6**	5,130.6
Non-current	2,723.7	804.3
Current	7,910.9	4,326.3
Derivative liabilities	**10,634.6**	5,130.6

G. Notes to consolidated financial statements

40.1 Cash flow hedge accounting

In some instances, the Group has applied cash flow hedge accounting to certain highly probable cash flows. These cash flows relate to the following hedged items:

- Purchases of electricity consumed in the smelting process and redelivery for electricity not consumed;
- Sales of mining production; and
- Operating expenditure, interest payments, repayment of foreign currency corporate loans and other forecasted purchases and sales.

The designated hedge derivatives are recognised at fair value. Movements in the fair value of the hedge derivatives are being deferred through other comprehensive income to the extent that they are deemed to be entered in an effective hedge relationship with cash flows that are yet to be reflected in the Consolidated Statement of Income. Any fair value movements that are not considered to be an effective hedge are recognised directly through the Consolidated Statement of Income.

The effectiveness of the economic relationship between the hedging instruments and the hedged item has been assessed at the inception of the hedge accounting designation and is reassessed at least on an annual basis. The hedge ratio is determined by the ratio that provides a strong relationship between movements in the fair value of the hedged item and hedging instruments at the inception of the hedge accounting relationship. Ineffectiveness will occur due to time spread between the hedged item and the hedging instrument as well as due to the basis risk.

The overview of the cash flow hedges is as follows:

			2022	2021	2022 USD'M	2021 USD'M
	Maturity	Equivalent	Notionals		Fair values	
Cross-currency/interest swaps hedging interest payments	0–5 years	USD'M	4,918.5	2,880.1	(177.0)	(48.0)
Gas and fx futures/swaps hedging future purchases and sales of LNG	0–1 year	various	–	160.0	–	(13.7)
Fx swaps hedging future non-USD loan transaction and opex payments	0–3 years	USD'M	2,309.6	2,348.6	(273.2)	21.4
LME futures hedging future sales and mining production	0–2 years	DMT	9,425.0	137,407.3	(17.0)	(13.1)
Electricity swaps hedging future purchase of electricity	0–8 years	AUD'M	470.7	531.6	55.0	(124.9)
Commodity swaps hedging future sales of metals	0–3 years	DMT	3,504.0	4,476.0	(41.2)	(24.9)
Electricity swaps hedging future redelivery of electricity	0–1 year	EUR'M	148.1	–	24.0	–
Total					**(429.4)**	(203.2)

	Ineffectiveness recognised through statement of income		Gain/(loss) on cash flow hedges through other comprehensive income	
	2022 USD'M	2021 USD'M	**2022 USD'M**	2021 USD'M
Cross-currency/interest swaps hedging interest payments	1.8	(0.2)	230.1	30.8
Gas and fx futures/swaps hedging future purchases and sales of LNG	–	(0.3)	6.2	29.2
Fx swaps hedging future non-USD loan transaction and opex payments	(1.3)	(6.1)	(213.1)	(61.7)
LME futures hedging future sales and mining production	3.9	(0.1)	(2.2)	(45.1)
Electricity swaps hedging future purchase of electricity	5.6	–	199.4	(32.4)
Oil related instruments hedging future purchases, sales and cost	–	–	–	(1.0)
Commodity swaps hedging future sales of metals	–	–	(16.2)	(24.9)
Total	**10.0**	(6.7)	**204.2**	(105.1)
Cash flow hedge reserve on equity-accounted investees			4.3	0.7
Tax on cash flow hedge reserve			(70.7)	8.7
Cash flow hedge reserve movement in statement of changes in equity			**137.8**	(95.7)

Other comprehensive movements in the Consolidated Statement of Changes in Equity include USD4.3 million positive movement of cash flow hedge reserves from equity-accounted investees (FY2021: USD0.7 million positive).

40.2 Fair value hedge accounting

In some instances, the Group elects to apply fair value hedge accounting to certain physical forward contracts described in the table below (the hedged items) and the corresponding paper hedge positions (the hedging instruments). Under the strict rules of hedge accounting, the Group is required to match each paper hedge position with the corresponding physical contract position. The intention is that a movement in fair value of a physical contract is accounted against the corresponding (and opposite) movement in fair value of the related paper hedges: both movements (increase and decrease) are recorded in the Consolidated Statement of Income (specifically to the line materials, transportation and storage), leading to a neutral result. It is important to note that the fair value of the physical contracts does not include any trading margin or any form of potential profit of the physical contracts.

The Group has elected to apply fair value hedge accounting to non-financial hedged items or certain risk components of non-financial hedged items. These non-financial hedged items relate to firm commitments with respect to tolling agreements, a transportation agreement, offtake agreements and bareboat charter and time charter agreements, among others.

	Tolling agreements	Transportation agreements	Offtake agreements	Bareboat and time charter agreements
Nature of forward contract (=hedged item)	Convert crude to refined products	Transport crude from Permian Basin to Gulf Coast	Offtake LNG in the US, Middle East and Asia	Freight lease agreement
Main counterparty of forward contract/ Types of contracts	Buckeye Texas Processing LLC and Magellan Processing LP	Cactus II Pipeline LLC	Cheniere Marketing LLC; Freeport LNG Marketing LLC; Brunei Energy Services and Trading SDN BHD; Pavilion Energy Trading & Supply PTE LTD; Oman LNG LLC; Petronas LNG LTD; and others	Asset classes: Very Large Crude Carriers, Suexmax, Aframax and Long Range vessels
Maturity of forward contract	Completing in FY2023	Ranging from FY2023 to FY2025	Ranging from FY2023 to FY2033	Ranging from FY2023 to FY2034
Trading strategy	Process crude into refined products	Transport crude from Permian Basin to Gulf Coast	Purchase LNG, transport, transform back into natural gas, sell natural gas in Europe/Asia	Freight lease agreement to generate freight income from external counterparties
Nature of paper hedge (=hedging instrument)	Hedging spread exposure (crude vs refined products) with futures and swaps	Hedging spread exposure (Permian Basin crude vs Gulf Coast crude) with futures and swaps	1) Hedging spread exposure (LNG in the US vs natural gas in Europe/Asia) with futures and swaps 2) Hedging Gas Slope with futures and swaps	Hedging freight routes with Freight Forward Agreements

40.2.1 Hedged items

The Group's tolling agreements represent non-financial hedged items, which the Group has entered into for fractionation services to convert crude feedstock into various crude refined products. The derivative hedging instruments (hedges consisting of futures and swaps) are entered into to hedge the spread exposures, referred to as the hedged risk, between the purchase of crude feedstock and the sale of crude refined products.

The Group's transportation agreement represents a non-financial hedged item, which the Group has entered into for the transportation of crude oil from the Permian Basin of Texas to the Gulf Coast. The derivative hedging instruments (hedges consisting of futures and swaps) are entered into to hedge the spread exposures, referred to as the hedged risk, between the purchase of inland crude oil barrels and the sale of those barrels on the Gulf Coast.

The Group's offtake agreements represent a non-financial hedged item, which the Group has entered into for the purchase of liquefied natural gas (LNG) from the United States with a number of counterparties. The derivative hedging instruments (hedges consisting of futures and swaps) are entered into to hedge the spread exposures, referred to as the hedged risk, between purchasing LNG from the US and selling LNG to its expected destination markets. Additionally, some Asian and Middle East LNG supply contracts that also represent a non-financial hedged item are further covered in the scope of hedge accounting. The LNG price in these contracts is indexed to Brent against a coefficient. The coefficient is referred to as the Gas Slope and is driven by the correlation between Brent and Asian LNG market. The derivative hedging instruments (hedges consisting of futures and swaps) are entered into to hedge the Gas Slope, referred to as the hedged risk.

The Group's bareboat and time charter agreements represent non-financial hedged items, which the Group has entered into for the purpose of transporting commodities and generating freight revenue. The derivative hedging instruments are entered to hedge freight exposure on the different bareboat and time charter contracts.

40.2.2 Hedging instruments

When applicable, the Group designates derivative hedging instruments as fair value hedges in relationship to the associated hedged items. The maturity profiles of the hedging instruments are as follows:

- Tolling agreements: varies from one month to one year.
- Transportation agreement: varies from one month to three years.
- Offtake agreements: varies from one month to three years.
- Bareboat and time charter agreements: varies from one month to three years.

The designated hedge derivatives are accounted for at fair value through profit and loss. The identified hedged items are accounted for at fair value and recognised in materials, transport and storage within the Consolidated Statement of Income. The fair value is reflected in the Consolidated Statement of Financial Position as either a recognised asset or liability. The fair value is determined using benchmarks best representing the designated hedged item. Specifically, in the case of LNG, the fair value of the hedged item also considers unobservable inputs.

40.2.3 Economic relationship

IFRS 9 requires the existence of an economic relationship between the hedged item and the hedging instrument. At designation and at the start of each reporting period, critical terms of both hedged items and hedge instruments in a hedge relationship are reviewed to ascertain the expectation that the value of the hedging instrument and the value of the hedged item would move in opposite directions as a result of the common underlying and therefore meet the risk management objective of the hedge relationship.

G. Notes to consolidated financial statements

40.2.4 Hedge effectiveness assessment

At each reporting date or on significant changes in circumstances a quantitative hedge effectiveness assessment is performed. The fair values of both hedged items and hedging instruments are measured and the net difference of the changes is the hedge ineffectiveness amount. The hedge ineffectiveness amount is analysed by its various sources (for example: basis differences, location differences, timing differences, quantity or notional amount differences, currency basis and forward points, credit risk or other risks) where applicable. Specific factors that may affect ineffectiveness are a mismatch in the designated hedge period and the maturity period of the hedging instrument and a differential of the various benchmarks for the pricing of the hedging instruments and the hedged items.

In the case of LNG specifically, a material portion of the hedge ineffectiveness can be attributed to the fact that physical LNG was pricing at a higher discount against the TTF price index than compared to the previous year. This difference in pricing can be explained by the relative lower liquidity of the TTF index since the war in Ukraine, which led to significant price moves, sometimes decorrelated with the underlying physical market. Further in LNG, the hedged item designated includes foreign currency exposure. However, the foreign currency hedges have not been designated into the hedge relationship, giving rise to additional ineffectiveness. The fair value of the foreign exchange hedges that have not been designated can be seen in the table below. The ineffectiveness in the 2022 financial year amounted to a loss of USD1,076.0 million (FY2021: gain of USD62.4 million).

The fair value adjustment on the non-financial hedged items is presented in the Consolidated Statement of Financial Position under the following categories:

	30 September 2022		30 September 2021	
	USD'M	**USD'M**	USD'M	USD'M
	Other non-current assets (Note 24)	**Other current assets (Note 28)**	Other non-current assets (Note 24)	Other current assets (Note 28)
Non-financial hedged items – Tolling agreements	–	24.4	21.5	69.1
Non-financial hedged items – Transportation agreement	–	–	–	–
Non-financial hedged items – Offtake agreements	3,795.1	2,897.4	579.3	2,085.6
Non-financial hedged items – Bareboat charter agreements	26.5	143.1	4.8	–
Non-financial hedged items – Storage agreements	–	–	–	–
Closing balance of the hedged item	**3,821.6**	**3,064.9**	605.6	2,154.7

	30 September 2022		30 September 2021	
	USD'M	**USD'M**	USD'M	USD'M
	Other non-current liabilities (Note 34)	**Other current liabilities (Note 36)**	Other non-current liabilities (Note 34)	Other current liabilities (Note 36)
Non-financial hedged items – Tolling agreements	–	–	–	–
Non-financial hedged items – Transportation agreement	3.9	77.3	83.4	198.8
Non-financial hedged items – Offtake agreements	–	–	–	–
Non-financial hedged items – Bareboat charter agreements	1.5	10.0	0.1	15.2
Non-financial hedged items – Storage agreements	–	2.2	1.4	8.8
Closing balance of the hedged item	**5.4**	**89.5**	84.9	222.8
Net balance of the hedged item (+ = asset/ - = liability)	**6,791.6**		2,452.6	

The following table summarises the movements in the non-financial hedged items and the related derivatives recognised in the Consolidated Statement of Income:

Fair value hedge accounting	**2022 USD'M**	2021 USD'M
Opening balances of the derivatives marked as hedges	**(2,397.0)**	471.1
Fair value movement included in the hedge relationship	(8,668.4)	(2,684.0)
Hedges for which hedge relationship matured	3 582.8	(139.9)
Hedges not designated in hedge relationship	18.5	(44.2)
Closing balance of the derivatives marked as hedges	**(7,464.1)**	(2,397.0)
Opening balance of the hedged item	**2,452.6**	(643.8)
Fair value movement included in the hedge relationship	7,592.1	2,746.4
Release of fair value adjustment due to matured hedge relationship	(3,253.1)	350.0
Closing balance of the hedged item	**6,791.6**	2,452.6
Lifetime to date net gain/(loss)	(672.5)	55.6
Year to date net gain/(loss)	(728.1)	228.3

41. Fair value

Accounting policy

The Group measures financial instruments, such as derivatives and certain non-derivative financial assets, at fair value at each balance sheet date.

Fair value 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 measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximising the use of relevant observable inputs and minimising the use of unobservable inputs.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities.

Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable.

Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable.

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by reassessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

For the purpose of fair value disclosures, the Group has determined classes of assets and liabilities on the basis of the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.

41.1 Fair values versus carrying amounts

The fair values of inventories, financial assets and liabilities, together with the carrying amounts shown in the Consolidated Statement of Financial Position, are as follows:

30 September 2022	Carrying value USD'M	Fair value USD'M
Assets		
Listed equity securities – Fair value through OCI	0.9	0.9
Listed equity securities – Fair value through profit or loss	63.2	63.2
Listed debt securities – Fair value through profit or loss	203.0	203.0
Unlisted equity investments – Fair value through profit or loss	130.1	130.1
Unlisted equity investments – Fair value through OCI	198.3	198.3
Other investments – Fair value through profit or loss	–	–
Loans receivable*	307.5	307.5
Inventories	22,583.6	22,583.6
Trade and other receivables*	27,630.5	27,630.5
Non–financial hedged items	6,886.5	6,886.5
Derivatives	8,304.2	8 304.2
Deposits*	642.0	642.0
Cash and cash equivalents*	14,881.3	14,881.3
Total financial assets and inventories	**81,831.1**	**81,831.1**
Liabilities		
Loans and borrowings		
Floating rate borrowings*	33,708.4	33,708.4
Fixed rate borrowings	5,569.7	5,262.4
Trade and other payables*	25,649.5	25,649.5
Non–financial hedged items	94.9	94.9
Derivatives	10,634.6	10,634.6
Total financial liabilities	**75,657.1**	**75,349.8**

30 September 2021	Carrying value USD'M	Fair value USD'M
Assets		
Listed equity securities – Fair value through OCI	2.7	2.7
Listed equity securities – Fair value through profit or loss	68.7	68.7
Listed debt securities – Fair value through profit or loss	277.3	277.3
Unlisted equity investments – Fair value through profit or loss	133.5	133.5
Unlisted equity investments – Fair value through OCI	242.4	242.4
Other investments – Fair value through profit or loss	862.2	862.2
Loans receivable*	362.4	362.4
Inventories	29,653.5	29,653.5
Trade and other receivables*	24,748.1	24,748.1
Non–financial hedged items	2,760.3	2,760.3
Derivatives	2,953.5	2,953.5
Deposits*	460.0	460.0
Cash and cash equivalents*	10,677.5	10,677.5
Total financial assets and inventories	**73,202.1**	**73,202.1**
Liabilities		
Loans and borrowings		
Floating rate borrowings*	40,161.2	40,161.2
Fixed rate borrowings	5,019.8	5,128.2
Trade and other payables*	22,690.0	22,690.0
Non–financial hedged items	307.7	307.7
Derivatives	5,130.6	5,130.6
Total financial liabilities	**73,309.3**	**73,417.7**

* Management has determined that these carrying amounts reasonably approximate their fair values because these are mostly short term in nature and are re-priced regularly.

G. Notes to consolidated financial statements

41.2 Fair value hierarchy

The table below analyses financial instruments and other assets and liabilities carried at fair value, by valuation method. The different levels have been defined as follows:

- **Level 1:** quoted prices (unadjusted) in active markets for identical assets or liabilities.
- **Level 2:** inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).
- **Level 3:** inputs for the asset or liability that are not based on observable market data (unobservable inputs).

Regarding financial instruments: Level 1 classifications primarily include futures and natural gas physical forwards with a maturity of less than one year. Level 2 classifications primarily include swaps and physical forward transactions which derive their fair value primarily from exchange quotes and readily observable broker quotes. Level 3 classifications primarily include physical forward transactions which derive their fair value predominately from calculations that use broker quotes and applicable market-based estimates surrounding location, quality and credit differentials. In circumstances where Trafigura cannot verify fair value with observable market inputs (Level 3 fair values), it is possible that a different valuation model could produce a materially different estimate of fair value.

It is Trafigura's policy to hedge significant market risk, therefore sensitivity to fair value movements is limited. Trafigura manages its market risk using the Value at Risk (VaR) as disclosed in note 39.1.

Financial assets and inventories	Level 1 USD'M	Level 2 USD'M	Level 3 USD'M	Total USD'M
30 September 2022				
Listed equity securities – Fair value through OCI	0.9	–	–	0.9
Listed equity securities – Fair value through profit or loss	63.2	–	–	63.2
Listed debt securities – Fair value through profit or loss	0.3	–	202.7	203.0
Unlisted equity investments – Fair value through profit or loss	–	–	130.1	130.1
Unlisted equity investments – Fair value through OCI	–	–	198.3	198.3
Other investments – Fair value through profit or loss	–	–	–	–
Futures	66.6	–	–	66.6
OTC derivatives	–	969.1	83.4	1,052.5
Physical forwards	2,924.6	798.2	1,827.5	5,550.3
Cross–currency swaps	–	2.2	–	2.2
Interest-rate swaps	–	263.5	–	263.5
Non-financial hedged items	–	3,264.3	3,622.2	6,886.5
Other financial derivatives	–	1,369.1	–	1 369.1
Inventories	–	22,583.6	–	22,583.6
Total	3,055.6	29,250.0	6,064.2	**38,369.8**

Financial assets and inventories	Level 1 USD'M	Level 2 USD'M	Level 3 USD'M	Total USD'M
30 September 2021				
Listed equity securities – Fair value through OCI	2.7	–	–	2.7
Listed equity securities – Fair value through profit or loss	68.7	–	–	68.7
Listed debt securities – Fair value through profit or loss	30.5	–	246.8	277.3
Unlisted equity investments – Fair value through profit or loss	–	–	133.5	133.5
Unlisted equity investments – Fair value through OCI	–	–	242.4	242.4
Other investments – Fair value through profit or loss	–	–	862.2	862.2
Futures	95.1	–	–	95.1
OTC derivatives	–	543.6	–	543.6
Physical forwards	274.6	656.5	915.4	1,846.5
Cross-currency swaps	–	10.2	–	10.2
Interest-rate swaps	–	25.9	–	25.9
Non-financial hedged items	–	679.0	2,081.3	2,760.3
Other financial derivatives	–	432.2	–	432.2
Inventories	–	29,653.5	–	29,653.5
Total	471.6	32,000.9	4,481.6	**36,954.1**

Financial liabilities	Level 1 USD'M	Level 2 USD'M	Level 3 USD'M	Total USD'M
30 September 2022				
Futures	91.8	–	–	91.8
OTC derivatives	–	3,162.2	28.4	3,190.6
Physical forwards	4,206.4	1,077.1	615.6	5,899.1
Cross-currency swaps	–	281.2	–	281.2
Interest-rate swaps	–	39.2	–	39.2
Non-financial hedged items	–	94.9	–	94.9
Other financial derivatives	–	1,132.7	–	1,132.7
Fixed-rate borrowings	–	5,569.7	–	5,569.7
Total	4,298.2	11,357.0	644.0	**16,299.2**
Net financial assets/(liabilities) and inventories	(1,242.6)	17,893.0	5,420.2	**22,070.6**

Financial liabilities	Level 1 USD'M	Level 2 USD'M	Level 3 USD'M	Total USD'M
30 September 2021				
Futures	10.7	–	–	10.7
OTC derivatives	–	1,410.8	124.9	1,535.7
Physical forwards	1,330.5	1,277.0	683.6	3,291.1
Cross-currency swaps	–	51.3	–	51.3
Interest-rate swaps	–	20.6	–	20.6
Non-financial hedged items	–	307.7	–	307.7
Other financial derivatives	–	221.2	–	221.2
Fixed-rate borrowings	–	5,019.8	–	5,019.8
Total	1,341.2	8,308.4	808.5	**10,458.1**
Net financial assets/(liabilities) and inventories	(869.6)	23,692.5	3,673.1	**26,496.0**

The movements in the level 3 hierarchy can be summarised as follows:

USD'M	Physical forwards/ Derivatives	Equity/ Debt securities	Firm commitments	Other investments	Total
1 October 2021	106.9	622.6	2,081.3	862.3	**3,673.1**
Invested	–	28.6	–	–	28.6
Total gain/(loss) recognised in Consolidated Statement of Income	1,180.6	(37.1)	4,153.0	628.3	5,924.8
Total gain/(loss) recognised in Consolidated Statement of Comprehensive Income	166.7	(43.8)	–	–	122.9
Disposals	–	(36.7)	–	–	(36.7)
Reclassification	–	(2.5)	–	112.0	109.5
Total realised	(187.3)	–	(2,612.1)	(1,602.6)	(4,402.0)
30 September 2022	1,266.9	531.1	3,622.2	–	**5,420.2**

USD'M	Physical forwards/ Derivatives	Equity/ Debt securities	Firm commitments	Other investments	Total
1 October 2020	6.9	487.9	(309.8)	–	**185.0**
Invested	–	91.9	–	1,841.3	1,933.2
Total gain/(loss) recognised in Consolidated Statement of Income	218.3	57.0	2,611.6	327.3	3,214.2
Total gain/(loss) recognised in Consolidated Statement of Comprehensive Income	(37.7)	(14.2)	–	–	(51.9)
Disposals	–	–	–	–	–
Reclassification	–	–	–	–	–
Total realised	(80.6)	–	(220.5)	(1,306.3)	(1,607.4)
30 September 2021	106.9	622.6	2,081.3	862.3	**3,673.1**

There were no transfers between fair value hierarchy levels in the financial year ended 30 September 2022 (or in the financial year ended 30 September 2021). Materially all level 3 physical forwards are settled in the next year. See note 23.3 for equity/debt securities and other investments.

The overview of the fair value hierarchy and applied valuation methods can be specified as follows:

Listed equity securities – Fair value through OCI		**2022 USD'M**	2021 USD'M
– Level 1	Assets	0.9	2.7
	Liabilities	–	–
Valuation techniques and key inputs:	Quoted prices in an active market		
Significant unobservable inputs:	None		

Listed equity securities – Fair value through profit and loss		**2022 USD'M**	2021 USD'M
– Level 1	Assets	63.2	68.7
	Liabilities	–	–
Valuation techniques and key inputs:	Quoted prices in an active market.		
Significant unobservable inputs:	None		

Listed debt securities – Fair value through profit and loss		**2022 USD'M**	2021 USD'M
– Level 1	Assets	0.3	30.5
	Liabilities	–	–
Valuation techniques and key inputs:	Quoted prices in an active market.		
Significant unobservable inputs:	None		

Futures		**2022 USD'M**	2021 USD'M
– Level 1	Assets	66.6	95.1
	Liabilities	91.8	10.7
Valuation techniques and key inputs:	Quoted prices in an active market.		
Significant unobservable inputs:	None		

Physical forwards		**2022 USD'M**	2021 USD'M
– Level 1	Assets	2,924.6	274.6
	Liabilities	4,206.4	1,330.5
Valuation techniques and key inputs:	Quoted prices in an active market		
Significant unobservable inputs:	None		

OTC derivatives		**2022 USD'M**	2021 USD'M
– Level 2	Assets	969.1	543.6
	Liabilities	3,162.2	1,410.8
Valuation techniques and key inputs:	Reference prices. Inputs include observable quoted prices sourced from traded reference prices or recent traded price indices in an active market for identical assets or liabilities.		
Significant unobservable inputs:	None		

Physical forwards		**2022 USD'M**	2021 USD'M
– Level 2	Assets	798.2	656.5
	Liabilities	1,077.1	1,277.0
Valuation techniques and key inputs:	Reference prices. Inputs include observable quoted prices sourced from traded reference prices or recent traded price indices in an active market for identical assets or liabilities.		
Significant unobservable inputs:	None		

Cross-currency swaps		**2022 USD'M**	2021 USD'M
– Level 2	Assets	2.2	10.2
	Liabilities	281.2	51.3
Valuation techniques and key inputs:	Discounted cash flow model. Inputs include observable quoted prices sourced from exchanges or recent traded price indices in an active market for identical assets or liabilities. Prices are adjusted by a discount rate that captures the time value of money and counterparty credit considerations.		
Significant unobservable inputs:	None		

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Interest-rate swaps		2022 USD'M	2021 USD'M
– Level 2	Assets	263.5	25.9
	Liabilities	39.2	20.6
Valuation techniques and key inputs:	Discounted cash flow model. Inputs include observable quoted prices sourced from exchanges or recent traded price indices in an active market for identical assets or liabilities. Prices are adjusted by a discount rate that captures the time value of money and counterparty credit considerations.		
Significant unobservable inputs:	None		

Non-financial hedged items		2022 USD'M	2021 USD'M
– Level 2	Assets	3,264.3	679.0
	Liabilities	94.9	307.7
Valuation techniques and key inputs:	Reference prices. Inputs include observable quoted prices sourced from traded reference prices or recent traded price indices in an active market for identical assets or liabilities.		
Significant unobservable inputs:	None		

Other financial derivatives		2022 USD'M	2021 USD'M
– Level 2	Assets	1,369.1	420.7
	Liabilities	1,132.7	218.0
Valuation techniques and key inputs:	Discounted cash flow model. Inputs include observable quoted prices sourced from exchanges or traded reference indices in an active market for identical assets or liabilities. Prices are adjusted by a discount rate that captures the time value of money and counterparty credit considerations.		
Significant unobservable inputs:	None		

Inventories		2022 USD'M	2021 USD'M
– Level 2	Assets	22,583.6	29,653.5
	Liabilities	–	–
Valuation techniques and key inputs:	Reference prices. Quoted prices in an active market, adjusted with a premium/discount for quality and/or location.		
Significant unobservable inputs:	None		

Fixed-rate borrowings		2022 USD'M	2021 USD'M
– Level 2	Assets	–	–
	Liabilities	5,569.7	5,019.8
Valuation techniques and key inputs:	Discounted cash flow model. Cash flows discounted at current borrowing rates for similar instruments.		
Significant unobservable inputs:	None		

Listed debt securities – Fair value through profit or loss		2022 USD'M	2021 USD'M
– Level 3	Assets	202.7	246.8
	Liabilities	–	–
Valuation techniques and key inputs:	Discounted cash flow model. The resultant asset is a discounted cash flow of the underlying throughput.		
Significant unobservable inputs:	– Forecast throughput – Discount rates using weighted average cost of capital – Market illiquidity – Operating cost and capital expenditures		

Unlisted equity investments – Fair value through profit or loss		2022 USD'M	2021 USD'M
– Level 3	Assets	130.1	133.5
	Liabilities	–	–
Valuation techniques and key inputs:	Valuations obtained from the asset managers of the funds.		
Significant unobservable inputs:	– Market illiquidity		

Unlisted equity investments – Fair value through OCI		2022 USD'M	2021 USD'M
	Assets	198.3	242.4
	Liabilities	–	–
Valuation techniques and key inputs:	Valuations obtained from the asset managers of the funds.		
Significant unobservable inputs:	– Market illiquidity		

Other investments – fair value through profit or loss		2022 USD'M	2021 USD'M
– Level 3	Assets	–	862.2
	Liabilities	–	–
Valuation techniques and key inputs:	Discounted cash flow model, based on expected cash flows from all contractually linked agreements to the structured entity.		
Significant unobservable inputs:	– Expected cash flows relate to anticipated quantity and timing of oil deliveries, based on specific contractual arrangements with the structured entity – Discount rates using weighted average use of capital, risk adjusted to factor in market volatility in the oil price and risks specific to the counterparty and contracts		

OTC derivatives		2022 USD'M	2021 USD'M
– Level 3	Assets	83.4	–
	Liabilities	28.4	124.9
Valuation techniques and key inputs:	Discounted valuation of cashflows generated based on unobservable inputs.		
Significant unobservable inputs:	Total load consumption forecast, scaling factor		

Physical forwards		2022 USD'M	2021 USD'M
– Level 3	Assets	1,827.5	915.4
	Liabilities	615.6	683.6
Valuation techniques and key inputs:	Valuation model based on market assumptions and reference prices. Key input is the definition of the observable risk position that forms the basis for the valuation of these physical forwards.		
Significant unobservable inputs:	The definition of the observable risk position		

Non-financial hedged items		2022 USD'M	2021 USD'M
– Level 3	Assets	3,622.2	2,081.3
	Liabilities	–	–
Valuation techniques and key inputs:	Valuation model based on market assumptions and reference prices. Key input is the market liquefaction fee curve that is defined using (1) observable quoted prices sourced from traded reference prices or recent traded price indices in an active market for identical assets or liabilities, (2) observable risk positions, (3) assumptions on ratios attributed to the different observable risk positions.		
Significant unobservable inputs:	The identification of observable risk positions and ratios attributed to them		

42. Related parties

In the normal course of business, the Group enters into various transactions with related parties, including fixed price commitments to sell and to purchase commodities, forward sale and purchase contracts, agency agreements and management service agreements. Outstanding balances at period end are unsecured and settlement occurs in cash. There have been no guarantees provided or received for any related-party receivables or payables.

All transactions between the Company and its subsidiaries are eliminated on consolidation along with any unrealised profits and losses between its subsidiaries, associates and joint ventures.

42.1 Transactions with key management personnel

42.1.1 Key management personnel compensation

In addition to their salaries, the Group also provides non-cash benefits to directors and executive officers. Executive officers also participate in the Group's share participation programme (please refer to note 11). Compensation of key management personnel, including all members of the Board of Directors and the Management Committee, comprised the following:

	2022 USD'M	2021 USD'M
Short-term employee benefits	5.3	5.5
Post-employment benefits	0.6	0.5
Share-based payments	16.3	15.6
Total	**22.2**	21.6

42.1.2 Key management personnel and director transactions

As at 30 September 2022, loans receivable from the members of the Board of Directors and the Management Committee total USD15.9 million (FY2021: USD14.3 million). Interest is charged on the loans at three-month term SOFR plus 0.26 percent (credit adjustment spread) plus 1.5 percent and loans are repayable within one to three years.

42.2 Other related party transactions

Related-party receivables/(payables)	2022 USD'M	2021 USD'M
Trafigura Control Holdings Pte. Ltd.	3.2	2.2
Porto Sudeste do Brasil S.A.	(48.8)	19.0
Guangxi Jinchuan Non-ferrous Metals Co., Ltd	200.3	303.1
Empresa Minera del Caribe S.A. (Emincar)	226.6	249.5
Trafigura Beheer B.V.	15.1	12.8
Nayara Energy Limited	69.3	1.9
ITG S.à r.l.	1,041.2	8.4
Terrafame Oy	132.9	163.6
Trafigura Liaoning Port International trading (Liaoning) Co. Ltd.	(71.7)	6.9
Others	14.2	(54.4)
Total	**1,582.3**	713.0

	2022 USD'M	2021 USD'M
Sales	3,218.6	8,429.9
Purchases	3,682.2	5,069.3
Interest income	24.4	72.3
Cost recharge income /(expense)	(12.0)	26.7

Transactions between related parties are made on commercial terms.

The table below summarises the nature of relationship and nature of transactions entered with the related party:

Party	Nature of relationship	Nature of transaction
Empresa Minera del Caribe S.A. (Emincar)	Equity-accounted investee	Financing and trading agreement
ITG S.à r.l.	Equity-accounted investee	Multimodal logistics, warehousing and storage
Guangxi Jinchuan Non-ferrous Metals Co., Ltd	Equity-accounted investee	Trading agreement
Terrafame Oy	Associate	Financing and trading agreement
Nayara Energy Limited	Equity-accounted investee	Financing and trading agreement
Porto Sudeste do Brasil S.A.	Equity-accounted investee	Loans and cost recharges
Trafigura Beheer B.V.	Parent company	Loans and cost recharges
Trafigura Liaoning Port International trading (Liaoning) Co. Ltd.	Equity-accounted investee	Trading agreement
Trafigura Control Holdings Pte. Ltd.	Parent company	Equity participation plan

G. Notes to consolidated financial statements

43. Hyperinflationary economies

Accounting policy

When the economy of a country in which the Group operates is deemed hyperinflationary and the functional currency of a Group entity is the currency of that hyperinflationary economy, the financial statements of such Group entities are adjusted so that they are stated in terms of the measuring unit current at the end of the reporting period. This involves restatement of income and expenses to reflect changes in the general price index from the start of the reporting period and restatement of non-monetary items in the statement of financial position to reflect current purchasing power as at the period end using a general price index from the date when they were first recognised. Comparative amounts are not adjusted. Any differences arising were recorded in equity on adoption.

The Group is primarily exposed to hyperinflationary economy in Argentina. The financial statements of the subsidiaries in this country are first adjusted for the effect of inflation with any gain or loss on the net monetary position recorded in the related functional lines in the Consolidated Statement of Income and then translated into USD.

With the effect from 1 July 2018, the Argentine economy is considered to be hyperinflationary in accordance with the criteria in IAS 29, Financial reporting in hyperinflationary economies. Accordingly, the financial statements include restatements for changes in the general purchasing power of the Argentine peso. These restatements are made for all Group entities that have the Argentine peso as the functional currency.

On the application of IAS 29, the Group used a conversion coefficient derived from official wholesale price and consumer price indices published by the National Institute of Statistics and Censuses (INDEC, in its Spanish acronym). The index rates and corresponding conversion coefficients applied are as follows:

Year	**Index, % (December 2010 = 100)**	Conversion coefficient
30 September 2020	1,026.9	278.7
30 September 2021	1,565.7	182.8
30 September 2022	2,861.5	100.0

Monetary assets and liabilities are not restated because they are already expressed in terms of the monetary unit current as at 30 September 2022. Non-monetary assets and liabilities (items that are not already expressed in terms of the monetary unit as at 30 September 2022) are restated by applying the above index.

The impact of USD23.5 million was recorded in other comprehensive income (FY2021: USD13.7 million), of which the most significant impact is from Argentina. The pre-tax gain for the year of USD17.1 million is included in finance income (FY2021: gain of USD9.2 million).

44. Consolidated subsidiaries

For entities where legal shareholding is less than 50 percent, the Group has consolidated based on the definition of control under IFRS. Certain entities with a percentage of effective economic interest below 50 percent are held through intermediate holding companies controlled by the Group.

Principal consolidated operating subsidiaries	Location	**% Owned 2022**	% Owned 2021
C.I. Trafigura Coal Colombia S.A.S.	Colombia	100.0%	100.0%
C.I. Trafigura Petroleum Colombia S.A.S.	Colombia	100.0%	100.0%
Catalina Huanca Sociedad Minera S.A.C.	Peru	100.0%	100.0%
Trafigura Renewables S.à r.l.(formerly known as Cloudbreak Investments S.à r.l.)	Luxembourg	100.0%	100.0%
Cortes Holding S.à r.l.	Luxembourg	100.0%	100.0%
Cortes Investments S.à r.l.	Luxembourg	100.0%	100.0%
Edenfield Procurement DMCC	United Arab Emirates	100.0%	100.0%
Energy Infrastructure Investments S.A.R.L	Luxembourg	96.7%	93.4%
Galena Asset Management B.V.	The Netherlands	100.0%	100.0%
Galena Asset Management SA	Switzerland	100.0%	100.0%
Hull Ocean Going Barges UK Ltd	United Kingdom	96.7%	93.4%
Impala Holdings Limited	Malta	100.0%	100.0%
Impala Middle East General Warehousing L.L.C.	United Arab Emirates	100.0%	100.0%
Impala Terminals Burnside LLC	United States	100.0%	100.0%
Impala Terminals Colombia S.A.S	Colombia	100.0%	100.0%
Impala Terminals Middle East FZE	United Arab Emirates	100.0%	100.0%
Impala Terminals UK Ltd.	United Kingdom	100.0%	100.0%
IWL (Luxembourg) S.à r.l.	Luxembourg	100.0%	100.0%
IWL Holdings (Luxembourg) S.à r.l.	Luxembourg	100.0%	100.0%
Leeuwin Trading Sàrl (formerly known as Leeuwin Holding Co. Ltd.)	Switzerland	100.0%	100.0%
Lykos (China) Co., Ltd.	China	100.0%	100.0%
NGL Equipments, S.A. de C.V.	Mexico	100.0%	100.0%
NN2 Newco Limited	United Kingdom	100.0%	98.5%
Nyrstar Belgium NV	Belgium	100.0%	98.5%
Nyrstar Budel BV	The Netherlands	100.0%	98.5%
Nyrstar Canada (Holdings) Ltd	Canada	100.0%	100.0%
Nyrstar Clarksville Inc	United States	100.0%	98.5%
Nyrstar Finance International AG	Switzerland	100.0%	98.5%
Nyrstar France SAS	France	100.0%	98.5%
Nyrstar Hobart Pty Ltd	Australia	100.0%	98.5%
Nyrstar Holdings PLC	Malta	100.0%	100.0%
Myra Falls Mine Ltd. (formerly known as Nyrstar Myra Falls Ltd)	Canada	100.0%	100.0%
Nyrstar Netherlands (Holdings) BV	The Netherlands	100.0%	98.5%
Nyrstar Port Pirie Pty Ltd	Australia	100.0%	98.5%
Nyrstar Sales & Marketing AG	Switzerland	100.0%	98.5%
Nyrstar Tennessee Mines – Gordonsville LLC	United States	100.0%	98.5%
Nyrstar Tennessee Mines – Strawberry Plains LLC	United States	100.0%	98.5%
Petromining S.A.	Argentina	100.0%	100.0%
Puma Energy (Australia) Assets Holdings Pty Ltd	Australia	96.7%	93.4%
Puma Energy (Australia) Bitumen Pty Ltd	Australia	96.7%	93.4%
Puma Energy B.V.	The Netherlands	96.7%	93.4%
Puma Energy Bahamas S.A.	Bahamas	96.7%	93.4%
Puma Energy Caribe LLC	United States	96.7%	93.4%
Puma Energy Holdings (Luxembourg) S.à r.l	Luxembourg	96.7%	93.4%
Puma Energy Holdings Pte Ltd	Singapore	96.7%	93.4%
Puma Energy Investments Holdings Pte. Ltd.	Singapore	96.7%	93.4%
Puma Energy PNG Limited	Papua New Guinea	96.7%	93.4%
Puma Energy PNG Refining Limited	Papua New Guinea	96.7%	93.4%
Puma Energy Supply & Trading Pte. Ltd.	Singapore	96.7%	93.4%
Puma International Financing S.A.	Luxembourg	96.7%	93.4%
Seal Sands Gas Transportation Limited	United Kingdom	100.0%	100.0%
Shipstern Holdings S.à r.l.	Luxembourg	100.0%	100.0%

Principal consolidated operating subsidiaries	Location	% Owned 2022	% Owned 2021
Sociedad Portuaria Impala Terminals Barrancabermeja S.A.	Colombia	100.0%	100.0%
Teesside Gasport Limited	United Kingdom	100.0%	100.0%
TFG Marine Pte. Ltd.	Singapore	75.0%	75.0%
TPTE Holding Limited	Malta	100.0%	100.0%
Trafigura Argentina S.A.	Argentina	100.0%	100.0%
Trafigura Asia Trading Pte. Ltd.	Singapore	100.0%	100.0%
Trafigura Canada Limited	Canada	100.0%	100.0%
Trafigura CGR Limited	Malta	100.0%	100.0%
Trafigura Chile Limitada	Chile	100.0%	100.0%
Trafigura Energy Colombia S.A.S.	Colombia	100.0%	100.0%
Trafigura Energy (Zhejiang) Co., Ltd.	China	100.0%	100.0%
Trafigura Eurasia LLC	Russian Federation	100.0%	100.0%
Trafigura Funding S.A.	Luxembourg	100.0%	100.0%
Trafigura Hamriyah FZE	United Arab Emirates	100.0%	100.0%
Trafigura Holding Sàrl	Switzerland	100.0%	100.0%
Trafigura Holdings Limited	Malta	100.0%	100.0%
Trafigura Holdings Pte. Ltd.	Singapore	100.0%	100.0%
Trafigura Holdings S.à r.l.	Luxembourg	100.0%	100.0%
Trafigura India Private Limited	India	100.0%	100.0%
Trafigura Investment (China) Co., Ltd.	China	100.0%	100.0%
Trafigura Limited	United Kingdom	100.0%	100.0%
Trafigura Maritime Logistics Pte. Ltd.	Singapore	100.0%	100.0%
Trafigura Maritime Ventures Limited	Malta	100.0%	100.0%
Trafigura Metales Basicos S.A.C.	Peru	100.0%	100.0%
Trafigura Mexico, S.A. de C.V.	Mexico	100.0%	100.0%
Trafigura Mongolia LLC	Mongolia	100.0%	100.0%
Trafigura Nat Gas Limited	Malta	100.0%	100.0%
Trafigura PE Holding Limited	Malta	100.0%	100.0%
Trafigura Peru S.A.C.	Peru	100.0%	100.0%
Trafigura Pte Ltd	Singapore	100.0%	100.0%
Trafigura Services Australia Pty Ltd	Australia	100.0%	100.0%
Trafigura Services South Africa (Pty) Ltd	South Africa	100.0%	100.0%
Trafigura Smelting Investments Limited	Malta	100.0%	100.0%
Trafigura Storage Investments Ltd	Malta	100.0%	100.0%
Trafigura Hydrogen (Australia) Pty Ltd(formerly known as Trafigura Terminals (Perth) Pty Ltd)	Australia	100.0%	100.0%
Trafigura Trading (Europe) Sàrl	Switzerland	100.0%	100.0%
Trafigura Trading (Hainan) Co., Ltd.	China	100.0%	100.0%
Trafigura Trading (UK) Limited	United Kingdom	100.0%	100.0%
Trafigura Trading (Yangshan) Co., Ltd.	China	100.0%	100.0%
Trafigura Trading LLC	United States	100.0%	100.0%
Trafigura Ukraine LLC	Ukraine	100.0%	100.0%
Trafigura US Inc.	United States	100.0%	100.0%
Trafigura Ventures Trading Ltd	Mauritius	100.0%	100.0%
Trafigura Ventures V B.V.	The Netherlands	100.0%	100.0%
Urion Holdings (Malta) Limited	Malta	100.0%	100.0%

45. Subsequent events

Accounting policy

If the Group receives information after the reporting period, but prior to the date of authorisation for issue, about conditions that existed at the end of the reporting period, the Group will assess if the information affects the amounts that it recognises in the Group's Consolidated Financial Statements. The Group will adjust the amounts recognised in its financial statements to reflect any adjusting events after the reporting period and update the disclosures that relate to those conditions in the light of the new information. For non-adjusting events after the reporting period, the Group will not change the amounts recognised in its Consolidated Financial Statements but, if material, will disclose the nature of the non-adjusting event and an estimate of its financial effect, or a statement that such an estimate cannot be made, if applicable.

In the first quarter of the 2023 financial year, Trafigura has entered into a USD3 billion four-year loan partly guaranteed under the Untied Financial Loan program (UFK) of the government of the Federal Republic of Germany acting through the German Export Credit Agency (ECA) Euler Hermes Aktiengesellschaft. The loan will support a new commitment by Trafigura to deliver substantial volumes of gas to Securing Energy for Europe (SEFE), which was recently recapitalised by the German government, over the next four years.

46. Board of Directors

The Board of Directors	
Mark Irwin	José Larocca
Pierre Lorinet	Sipko Schat
Andrew Vickerman	Mike Wainwright
Jeremy Weir	

Singapore, 7 December 2022.

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Trafigura Group Pte. Ltd. and the companies in which it directly or indirectly owns investments in are separate and distinct entities.
In this publication, the collective expressions 'Trafigura', 'Trafigura Group', 'the Company' and 'the Group' may be used for convenience where reference is made in general to those companies. Likewise, the words 'we', 'us', 'our' and 'ourselves' are used in some places to refer to the companies of the Trafigura Group in general. These expressions are also used where no useful purpose is served by identifying any particular company or companies.

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