# Creditreform Corporate Issuer / Issue Rating

Linde plc

Creditreform Rating

| Rating object | Rating information | |
|---|---|---|
| **Linde plc**<br><br>Creditreform ID: FNR0000132133<br>Incorporation: 1879<br>Based in: Woking, Surrey, United Kingdom<br>Main (Industry): Industrial Gases and Engineering<br>CEO: Sanjiv Lamba | Corporate Issuer Rating:<br>A / stable | Type:<br>Initial rating<br>Unsolicited<br>Public rating |
| | LT LC Senior Unsecured Issues:<br>A / stable | Short-term rating:<br>L2 |
| <u>Rating objects:</u><br>Long- and short-term Corporate Issuer Rating: Linde plc<br>Long-and short-term Corporate Issuer Rating: Linde Finance B.V.<br>Long-term Local Currency (LT LC) Senior Unsecured Issues of Linde plc<br>Long-term Local Currency (LT LC) Senior Unsecured Issues of Linde Finance B.V. | Rating date: 18 July 2024<br>Monitoring until: withdrawal of the rating<br>Rating methodology: CRA "Corporate Ratings"<br>CRA "Non-Financial Corporate Issue Ratings"<br>CRA "Corporate Short-Term Ratings"<br>CRA "Rating Criteria and Definitions"<br>Rating history: www.creditreform-rating.de | |

**Content**




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## Summary


Linde plc (hereinafter referred to as Linde or the Company) is a leading global industrial gases and engineering company, renowned for its innovative solutions and services. Formed through the merger of Linde AG and Praxair, Inc. in October 2018, Linde plc operates in over 80 countries. The Company produces, sells, and distributes atmospheric, process, and specialty gases to a diverse group of industries, including aerospace, chemicals, food and beverage, electronics, energy, healthcare, manufacturing, metals, and mining. Linde's Engineering business offers its customers an extensive range of gas production and processing services, including supplying plant components and services directly to customers.

With more than 66,000 employees, the Company reported sales of USD 32.854 million in 2023 (2022: USD 33.364 million) and a net income of USD 6.341 million (2022: USD 4.281 million). Approximately 90% of its 2023 sales were generated from industrial gases operations in the Americas, EMEA, and APAC, while the remaining 10% was attributable to the Linde Engineering segment and Global Other operations.


### Rating result

The current unsolicited corporate issuer rating of A attests Linde plc a high level of credit worthiness and a low default risk. The rating assessment is based on the fundamentally sound operating and financial performance of Linde in recent years, which is reflected in a very stable overall result of our financial ratio analysis. Despite the challenging market environment, including volatile energy and commodity prices, the Company has delivered a strong operating performance in 2023, enabling high margins through successful price increases and cost reduction programs. Further important factors for this assessment include Linde's strong market position, which is built on a stable earnings base and long-term customer relationships, as well as a high degree of product, industry, and geographical diversification. The Company's financial stability is underlined by its strong cash flow, relatively low debt levels, and good access to capital markets.

Risk factors include intense competition and significant pressure to innovate, which requires high levels of investment. Additionally, inflation-related price increases, the subdued growth and economic outlook, increasing debt levels, and shareholder remuneration currently have a dampening effect on the rating. Despite these challenges, we consider Linde's operations to be fundamentally promising and sustainable for the future.

### Outlook

The one-year outlook for the rating is stable. The outlook provides an assessment of Linde's ability to achieve its strategic and operational targets based on its existing capital structures and its further economic development in line with the Company's forecasts. The stable outlook also reflects the expectation that Linde will take appropriate measures to protect its credit quality in the event of a significant macroeconomic downturn with an impact on the Company's earnings and cash flow generation.

**Reference:**

The relevant rating factors (key drivers) mentioned in this section are predominantly based on internal analyses, evaluations from the rating process, the derived valuations of the analysts participating in the rating and, if applicable, other rating committee members. The fundamental external sources used are specified in the sections "Regulatory requirements" and "Rules on the presentation of credit ratings and rating outlooks".

**Excerpts from the financial key figures analysis 2023:**
+ EBITDA, EBIT, EAT
+ Equity ratio still at a solid level
+ Net total debt / EBITDA
+ Return on investment

- Sales
- Short-term capital lock-up
- Ratio of interest expenses to total debt

**General rating factors** summarize the key issues which – according to the analysts as of the date of the rating – have a significant or long-term impact on the rating, whether positive (+) or negative (-).

**Current rating factors** are the key factors which, in addition to the underlying rating factors, have an impact on the current rating.

## Relevant rating factors

Table 1: Financials I Source: Linde plc Annual Report 2023, standardized by CRA

| Linde plc<br>Selected key figures of the financial statement analysis<br>Basis: Annual accounts and report of 31.12. (US-GAAP) | CRA standardized figures[1] | |
|---|---|---|
| | 2022 | 2023 |
| Sales (USD million) | 33,364 | 32,854 |
| EBITDA (USD million) | 9,927 | 12,020 |
| EBIT (USD million) | 5,723 | 8,204 |
| EAT (USD million) | 4,281 | 6,341 |
| EAT after transfer (USD million) | 4,147 | 6,199 |
| Total assets (USD million) | 54,744 | 55,422 |
| Equity ratio (%) | 42.07 | 40.70 |
| Capital lock-up period (days) | 32.77 | 33.55 |
| Short-term capital lock-up (%) | 24.77 | 26.29 |
| Net total debt / EBITDA adj. (Factor) | 2.74 | 2.38 |
| Ratio of interest expenses to total debt (%) | 0.87 | 1.46 |
| Return on investment (%) | 8.15 | 11.83 |

### General rating factors

+ One of the world's largest suppliers of industrial gases
+ Diversified portfolio (by geography, sector and product)
+ Leadership in the development of new technologies and efficient production processes
+ No significant seasonal fluctuations
+ High barriers to entry
+ Good access to capital markets
+ Very stable overall result of our financial ratio analysis over the last few years

– High pressure to innovate and invest
– Intense competition
– High exposure to global economic conditions and trade relations
– Increased exposure to energy and commodity prices
– Raw material supply disruptions
– Interest rate and foreign exchange risk

### Current rating factors

+ Solid equity, balanced asset and financing structure
+ Strong operating performance in 2023
+ High operating margins
+ Solid operating cash generation
+ Successful price increases in all geographic segments
+ Activities related to cost reduction programs

[1] For analytical purposes, CRA adjusted the original values in the financial statements in the context of its financial ratio analysis. For example, when calculating the analytical equity ratio, deferred tax assets, goodwill (entirely or partly), and internally generated intangible assets are subtracted from the original equity, whilst deferred tax liabilities are added. Net total debt considers all balance sheet liabilities. Therefore, the key financial figures shown often deviate from the original values of the company.

- Inflationary environment leading to increases in energy, raw material and interest costs
- Charges related to intercompany reorganization
- Rising net debt
- High investment requirements
- Higher distribution of profit in the form of dividends and share repurchases
- Restrained political-economic and business outlook in both Europe and the USA
- (Geo-)political and macroeconomic risks

**Prospective rating factors** are factors and possible events which – according to the analysts as of the date of the rating – would most likely have a stabilizing or positive effect (+), or a weakening or negative effect (-) on future ratings if they occurred. This is not an exhaustive list of possible future events with potential relevance for future ratings. Circumstances can arise that are not included in the list of prospective factors, whose effects are impossible to assess at the time of the rating, either because these effects are uncertain or because the underlying events are deemed unlikely to occur.

### Prospective rating factors

+ Strengthening and expanding market position
+ M&A activities in line with a focused country portfolio
+ Highly adaptable to technological advances
+ Cash flow growth due to higher margins

- Increasing regulatory restrictions
- Rising global trade barriers
- Growing geopolitical risks

**ESG factors** are factors related to environment, social issues, and governance. For more information, please see the section "Regulatory requirements". CRA generally takes ESG relevant factors into account when assessing the rating object and discloses them when they have a significant influence on the creditworthiness of the rating object, leading to a change in the rating result or the outlook.

### ESG-factors

CRA generally takes ESG factors (environment, social and governance) into account within its rating decisions. In the case of Linde plc we have not identified any ESG factors with significant influence.

Sustainability is at the heart of Linde's global operations. The Company's commitment extends beyond reducing its carbon footprint to accelerating the global decarbonization efforts of its customers. Linde aims to be a leader in sustainability, supporting its customers, communities and the planet. With this in mind, Linde has set ambitious targets to achieve climate neutrality. By 2028, the Company plans to invest more than USD 1 billion in decarbonization projects, triple the production of clean hydrogen, and expand electrolysis for green hydrogen. The Company's targets include improving greenhouse gas intensity by 35% and increasing the use of renewable and low-carbon energy sources to over 50%.

By 2035, Linde aims to reduce absolute greenhouse gas emissions by 35% compared to the 2021 baseline. This includes improving the efficiency of steam methane reformers (SMRs), investing in carbon capture and storage (CCS) and significantly increasing the use of low-carbon energy sources. By 2050, Linde aims to achieve climate neutrality by reducing its emissions by 4% per year to reach net zero, thus contributing to the global goal of limiting global warming to 1.5 degrees Celsius.

The Company tracks its progress against the Sustainable Development Goals (SDSs 2028) and its '35 by 35' commitment to reduce its scope 1 and 2 emissions by 35% by 2035. In 2022, Linde achieved a reduction of 2.8% compared to the 2021 baseline, demonstrating good progress in energy efficiency and low-carbon electricity procurement.

Safety and health are an integral part of Linde's operations, as reflected in its 2028 targets with a focus on operational, vehicle and product safety. In 2022, Linde's Lost workday case rate (LWCR) was 0.19 and the total recordable case rate (TRCR) was 0.49, both significantly better than the industry average. The commercial vehicle incident rate (CVIR) was 2.24 per million kilometers.

Diversity and inclusion are also priorities for Linde, which aims to achieve 30% female representation across all professional levels by 2030. In 2022, women made up 28% of Linde's global professional workforce, up from 27% in 2021. Female managers accounted for 18% of the workforce.

In 2022, Linde increased its environmental and climate-related philanthropic spending by 116%, contributing approximately USD 1.2 million to support global and regional environmental programs, thus reinforcing its commitment to climate change initiatives.

In terms of governance, Linde pursues a stringent strategy to ensure long-term success. The Board of Directors annually reviews corporate plans and oversees non-financial issues such as safety, environmental responsibility, compliance, and talent management. The Company's code of conduct defines expected behaviors and reporting channels, upholding high standards for diversity, inclusion, safety, health, environmental quality, human rights, social responsibility, and anti-corruption efforts.

Overall, Linde plc demonstrates a strong commitment to sustainable development and responsibility toward society and the environment. The Company's ambitious environmental, social and governance targets and actions underline its leadership in promoting a sustainable future.

A general valid description of Creditreform Rating AG, as well as a valid description of corporate ratings for understanding and assessing ESG factors in the context of the credit rating process, can be found here.

### Best-case scenario: A

Please note:

The scenarios are based on information available at the time of the rating. Within the forecast horizon, circumstances may occur that could lead to a change of the rating out of the indicated range.

In our best-case scenario for one year, we assume a rating of A. We expect the Company's business development to proceed as planned, with no unforeseen burdens on earnings during the current financial year. Against the backdrop of a challenging and uncertain market environment, and in view of Linde's increased debt and the associated higher interest burden, we do not anticipate any significant improvement in the Company's key financial ratios that would lead to an upgrade within one year. In the assumed scenario, the assessment of the Company's net assets and financial position corresponds to the previous assessment.

### Worst-case scenario: A-

In our worst-case scenario for one year, we assume a rating of A-. We anticipate that Linde will miss its sales and earnings targets due to deteriorating market conditions. Financial ratios are expected to deteriorate. A further increase in debt, e.g., in connection with additional acquisitions or unforeseen financial requirements, as well as interest rate risks, could have a negative impact. Nevertheless, even in such a case, the Company's solid foundational structures should mitigate the potential negative effects to a certain extent.

## Business development and outlook

Table 2: The development of business of Linde plc I Source: Annual Report 2023, reported information

| Linde plc | | | | |
|---|---|---|---|---|
| **USD million** | **2022** | **2023** | **Δ** | **Δ %** |
| Sales | 33,364 | 32,854 | -510 | -1.5 |
| EBITDA | 9,927 | 12,020 | 2,093 | 21.1 |
| EBIT | 5,723 | 8,204 | 2,481 | 43.4 |
| EBT | 5,715 | 8,155 | 2,440 | 42.7 |
| EAT | 4,284 | 6,341 | 2,057 | 48.0 |

In 2023, Linde plc experienced a steady upturn in a global economic environment still characterized by geopolitical tension, inflation, and supply chain issues. With sales of USD 32,854 million (2022: USD 33,364 million), the Company achieved EBITDA of USD 12,020 million (2022: USD 9,927 million), EBIT of USD 8,204 million (2022: USD 5,723 million), and consolidated net income of USD 6,341 million (2022: USD 4,281 million) in 2023, demonstrating significant earnings growth despite a slight decline in sales. This once again highlights the Company's growth potential in recent years.

The decline in sales was influenced by several factors, including cost pass-through, which represents the contractual billing of energy cost variances primarily to local customers, and volume decreases, particularly in the electronics and metals and mining end sectors. Additional factors included currency effects and the divestiture of the GIST business, partially offset by the acquisition of nexAir, LLC. Price increases in all geographic segments compensated for these influences by 6%.

Cost of sales decreased significantly by 10%, from USD 19,450 million in 2022 to USD 17.492 million in 2023. The corresponding percentage of sales fell from 58% to 53% respectively, driven by higher prices and lower cost pass-through. Selling, general, and administrative expenses increased by 6% to USD 3,295 million (2022: USD 3,107 million), mainly due to higher costs, including the acquisition of nexAir.

Nevertheless, other operating income (expenses) - net improved significantly, with a charge of USD 40 million in 2023 compared to USD 1,091 million in 2022, which was heavily impacted by the deconsolidation and impairment of Russian subsidiaries. Operating income showed a strong increase of 43% to USD 8,204 million compared to USD 5,723 million in the previous year. This growth was primarily due to higher prices, savings from productivity initiatives, and lower depreciation and amortization related to merger-related intangible assets. Additionally, no significant costs related to the Russia-Ukraine conflict were incurred in 2023, further improving the operating income.

The financial result was up from USD -8 million in 2022 to USD -49 million in 2023. While income from equity investments fell from USD 172 million to USD 167 million compared to the previous year, and net pension and OPEB[2] benefits dropped from USD 237 million to USD 164 million due to higher interest costs, reported net interest expense rose from USD 63 million to USD 200 million in 2023. The increase was mainly due to higher interest rates on debt and included devaluation effects of around USD 28 million from hyperinflationary countries. After tax payments,

[2] Postretirement Benefits Other Than Pensions

Linde's net income for 2023 amounted to USD 6,341 million, representing a 48% increase compared to USD 4,281 million in 2022.

In 2023, the Company's acquisitions totaled USD 953 million, significantly higher than the USD 110 million in 2022 and USD 88 million in 2021. The acquisition of nexAir, LLC for USD 866 million was a strategic move to expand Linde's geographical presence in the USA. Previously, the Company had held a 23% stake in nexAir, and the acquisition of the remaining 77% was completed in a cash transaction. This acquisition contributed USD 408 million to sales in 2023.

The business activities of Linde are divided into two main product lines: Industrial Gases and Engineering. The Industrial Gases segment is managed on a geographical basis and comprises the Americas, EMEA (Europe, Middle East and Africa), and APAC (Asia and South Pacific) regions. The Engineering segment operates globally and provides equipment for air separation and other industrial gas applications. The Other segment includes corporate costs and a number of smaller businesses that individually do not meet the quantitative thresholds for separate disclosure.

Table 3: The development of reportable segments in 2023 I Source: Linde Annual Report 2023

| **Linde plc according to reportable segments** | | | | | | |
|---|---|---|---|---|---|---|
| USD million | **Sales** | | | **Operating Profit** | | |
| | **2022** | **2023** | **Δ %** | **2022** | **2023** | **Δ %** |
| Americas | 13,874 | 14,304 | 3.1 | 3,732 | 4,244 | 13.7 |
| EMEA | 8,443 | 8,542 | 1.2 | 2,013 | 2,486 | 23.5 |
| APAC | 6,480 | 6,559 | 1.2 | 1,670 | 1,806 | 8.1 |
| Engineering | 2,762 | 2,160 | -21.8 | 555 | 491 | -11.5 |
| Other | 1,805 | 1,289 | -28.6 | -66 | 43 | 165.2 |
| **Total** | **33,364** | **32,854** | **-1.5** | **7,904** | **9,070** | **14.8** |

The performance of the various business areas was mixed during the fiscal year 2023. In the Americas, sales increased by 3% due to higher prices and acquisitions, while cost past-through reduced sales by 6%. In the EMEA region, sales rose by 1% thanks to price increases, despite lower volumes, cost pass-through, and net divestments. In the APAC region, sales growth of 1% was the result of volume and price increases, despite negative currency effects. Engineering sales fell by 22% as a result of project delays and sanctions against Russia. Sales in the Other segment dropped by 29% following divestitures, which were partially offset by volume and price increases. Operating profit for all segments, except Engineering, developed positively. In the Americas region operating profit increased by 14%, in EMEA by 24%, and in APAC by 8%, while it declined by 12% in the Engineering segment. This was due to lower sales, partially compensated by higher margins from the winding down of completed or suspended sanctioned projects in Russia. In the "Other" segment, operating profit rose by 165%, driven by higher prices in the global helium and coatings businesses and lower corporate costs, which more than offset the impacts of divestitures and lower volumes.

In the first quarter of 2024, Linde continued its positive trend, but again suffered a slight decline in sales, in particular, cost pass-through of 2% and volume reductions of 1%. However, these effects were partially mitigated by price increases of 2%. Reported operating profit rose by 8% to USD 2,095 million as higher prices and productivity initiatives more than compensated for the impact of cost inflation and lower volumes. As a result of the higher operating profit, net profit increased by 7% compared to the same period last year, amounting to USD 1,665 million.

Table 4: The development of business of Linde plc I Source: Linde Report First-Quarter 2024, reported information

| Linde plc | | | | |
|---|---|---|---|---|
| USD million | Q1 2023 | Q1 2024 | Δ | Δ % |
| Sales | 8,193 | 8,100 | -93 | -1,1 |
| EBITDA | 2,881 | 3,044 | 163 | 5.7 |
| EBIT | 1,933 | 2,095 | 162 | 8.4 |
| EBT | 1,982 | 2,128 | 146 | 7.4 |
| EAT | 1,552 | 1,665 | 113 | 7.3 |

For the full year 2024, the Company forecasts adjusted diluted earnings per share in the range of USD 15.30 to USD 15.60 (2023: USD 14.20), an increase of 8% to 10% year-on-year. Capital expenditures for the full year 2024 are expected to be between USD 4.0 billion and USD 4.5 billion (2023: USD 3.8 billion) to support both growth and maintenance needs, including the contractually agreed sale of a USD 4.9 billion gas project backlog. Achievement of these targets is subject to economic conditions and (geo-)political factors. In particular, Russia's war of aggression in Ukraine has had global repercussions, leading to increased uncertainty in international markets. Furthermore, political events such the US elections could lead to market volatility and changes in business dynamics. Trade conflicts, geopolitical disputes, and international tension could disrupt global supply chains and affect the confidence of market participants. Nevertheless, we believe that the Company is well positioned to achieve its growth targets and strengthen its market position through strategic initiatives and solid business fundamentals. A continued focus on innovation, efficiency improvements and the exploration of new markets will enable Linde to maintain its competitive position and secure long-term growth, even in a challenging environment.

## Structural risk

Linde plc, a public limited company incorporated under the laws of Ireland, is a leading global industrial gases and engineering company with its registered office in Dublin, Republic of Ireland, and its principal executive offices in Woking, United Kingdom and Danbury, United States. On 18 January 2023, shareholders approved an intercompany reorganization which resulted in the delisting of Linde plc's shares from the Frankfurt Stock Exchange. On 1 March 2023, the Company (formerly known as Rounderway plc) was delisted from the NYSE and the FSE, and the new Linde plc was listed on the NYSE. Shareholders received one new share for each old share, with 490,766,972 new shares issued. Historical treasury shares were cancelled, reducing treasury shares and retained earnings by approximately USD 15 billion. On 7 November 2023, Linde plc moved its listing from the NYSE to the Nasdaq, and continues to trade under the ticker symbol "LIN". The Company's shares are widely held, with a free float of 75.47%[3]. Major institutional investors include Vanguard Group with 9.47%, BlackRock, Inc. with 7.9% and Capital Group Companies, Inc. with 7.16%.

The governance of Linde is overseen by a Board of Directors, which is responsible for setting the Company's strategic direction and ensuring the implementation of its policies. The Board comprises 10 members, including the CEO, independent directors and representatives of major

[3] LINDE PLC EO -,001: aktueller Kurs und Nachrichten - FAZ.NET

shareholders. A number of committees, including the audit, executive, nomination and governance, human capital, and sustainability committees are supported the Board’s activities. This governance framework ensures a clear segregation of supervisory, management and strategic functions.

Linde's corporate structure is characterized by a complex network of subsidiaries and joint ventures. As of 31 March 2024, the Group included approximately 600 consolidated subsidiaries operating in approximately 45 countries in Europe, the Middle East and Africa, around 20 countries in Asia and the South Pacific, and approximately 20 countries in North and South America. The parent company, Linde plc, acts as the central holding entity, overseeing and managing its various subsidiaries. These subsidiaries are organized into several key segments: Americas, EMEA, APAC, Engineering and Other Businesses. This structure allows Linde to address the specific needs of different regions while maintaining a consistent global strategy.

Each segment operates with a degree of autonomy tailored to regional market demands, regulatory environments, and economic conditions. This decentralized approach allows Linde to be responsive and flexible, although it also requires robust coordination and communication across different business units.

One of Linde's key structural risks is its exposure to different regulatory and political environments. With operations in more than 80 countries, Linde must navigate a complex web of local laws, regulations and geopolitical risks. For instance, changes in environmental regulations can have a significant impact on Linde's operations, particularly given its involvement in the production and distribution of industrial gases. To mitigate these risks, Linde has established comprehensive compliance and risk management systems, ensuring adherence to local regulations and proactive identification of potential legal and political issues.

Linde is also exposed to financial risks, including currency fluctuations, interest rate changes, and credit risks associated with its global operations. The Company employs sophisticated financial management strategies to hedge against these risks, including the use of derivatives and maintaining a balanced debt portfolio.

Moreover, the industrial gases market is highly competitive, with key players such as L’ Air Liquide S.A., Air Products and Chemicals, Inc., Messer Group GmbH, Mitsubishi Chemical Holdings Corporation, as well as a large number of small and medium-sized independent industrial gases companies. Linde's ability to maintain its market position depends on continuous innovation, operational efficiency, and strategic investment. The Company invests heavily in R&D to develop new products and technologies, such as hydrogen energy solutions and carbon capture technologies, which are critical to long-term sustainability and growth.

Linde's organizational complexity also presents integration and operational risks, particularly when acquiring new businesses or entering into joint ventures. Successful integration requires the effective management of cultural differences, the alignment of business processes, and the realization of synergies. Linde's experience and established integration frameworks have generally enabled it to manage these risks effectively.

Overall, while Linde faces significant structural risks due to its global footprint, diverse regulatory environment and competitive market, its robust governance framework, strategic risk management practices and strong market position contribute to mitigating these risks. The Company's proactive approach to addressing environmental and geopolitical challenges further enhances its ability to navigate the complexities of the global industrial gases industry.

## Business risk

Linde plc, the largest industrial gases company globally, serves a wide range of industries including aerospace, chemicals, food and beverage, electronics, energy, healthcare, manufacturing, and metals. The Company produces and distributes atmospheric, process, and specialty gases, and designs, engineers, and builds equipment for gas production and processing. Linde's geographic management structure and extensive production and distribution networks provide a competitive edge in delivering reliable and cost-effective services.

Linde's main products include atmospheric gases (oxygen, nitrogen, argon, rare gases) and process gases (carbon dioxide, helium, hydrogen, electronic gases, specialty gases, acetylene). The Company utilizes advanced cryogenic air separation and non-cryogenic technologies such as vacuum pressure swing adsorption (VPSA) and membrane separation to produce these gases. Linde is also a leader in hydrogen production, with technologies for gray, blue, and green hydrogen, focusing on sustainable energy solutions.

The Company’s business model emphasizes the geographical distribution of its production facilities due to the uneconomical nature of transporting gases over long distances. With approximately 350 production plants, the Company operates significant production facilities in the Americas. The EMEA region hosts roughly 275 plants, while the APAC region has approximately 230. The Company employs three basic distribution methods for industrial gases: on-site or tonnage, merchant or bulk liquid, and packaged or cylinder gases. On-site plants cater to high-volume customers through pipeline supply, merchant gases are delivered by tanker trucks, and packaged gases are distributed in cylinders. These integrated distribution methods ensure efficient and cost-effective delivery tailored to customers’ needs.

Linde's Engineering segment designs and builds plants for the production and processing of gases worldwide. The segment focuses on air separation, hydrogen, synthesis, olefin and natural gas plants, using Linde's process engineering expertise to deliver efficient and sustainable solutions. These plants support third party customers as well as Linde's own industrial gas operations.

An extensive network of production plants, pipeline complexes, distribution centers and delivery vehicles supports Linde's market position. However, the Company is exposed to market risks such as fluctuations in energy and raw material costs. Energy, primarily in the form of electricity, natural gas and diesel fuel, is the single largest cost item in the production and distribution of industrial gases. Linde seeks to mitigate these costs through customer contract management and operational efficiency. Major customer contracts typically include escalation and pass-through clauses to recover energy and raw material costs. Despite these measures, cost volatility could have an adverse effect on Linde's financial position or operational results.

For raw materials like carbon dioxide, carbon monoxide, helium, hydrogen, and specialty gases, Linde relies on external sources. Disruptions in the supply of these materials could affect Linde's ability to meet its contractual supply commitments. Additionally, the Company faces financial risks from interest rate and currency exchange rate fluctuations. Linde manages these risks using derivative financial instruments, including interest rate swaps, currency swaps, forward contracts, and commodity contracts, primarily with major banking institutions to minimize credit risk.

The Company’s extensive portfolio of patents and trademarks is also critical to maintaining its competitive advantage. However, claims or disputes related to an infringement of intellectual property rights could result in costly litigation and affect the Company's market position. Linde actively monitors and protects its intellectual property rights to safeguard its innovations and technologies.

Another significant risk for Linde is cybersecurity, based on its reliance on information technology systems and networks for its business and operations. The Company addresses these risks through advanced security technologies, internal controls, network and data center resiliency, and recovery processes. The Company has implemented a Zero Trust principle for security enhancements and maintains a Standard Operating Procedure for Global Security Incident Response. Despite these measures, Linde's systems remain vulnerable to sophisticated cyberattacks, which could result in business interruptions, loss or disclosure of confidential information, and legal or regulatory actions.

Overall, we assess Linde's business risk as moderate. The Company faces a broad spectrum of strategic, operational, market, and legal challenges. However, with a robust risk management framework in place, Linde is well positioned to navigate these complexities effectively. By leveraging its technological leadership, extensive distribution networks, and diversified market presence, Linde aims to sustain its growth and maintain its status as the world's leading industrial gases company. Business risk is influenced by the ongoing need for high levels of investment and innovation, as well as increasing competition. At the same time, Linde's forward-looking business model, with its broad product portfolio and strong market relevance, has a stabilizing effect on the risk assessment.

## Financial risk

For the purposes of its financial ratio analysis, Creditreform Rating AG ("CRA") adjusted the original values in the financial statements. The following representations and calculations are based predominantly on these adjustments.

Overall, Linde had good balance sheet structure and a solid financial profile as of 31 December 2023. The CRA calculated adjusted equity amounted to USD 22,559 million, a 2.1% decline from USD 23,032 million in 2022, which was influenced by offsetting effects such as lower retained earnings of USD 8,845 million (2022: USD 20,541 million) and reduced in deducted treasury shares of USD -3,133 million (2022: USD -14,737 million) as a result of the reorganization within the Group. However, with an equity ratio of 40.7% (2022: 42.07%), Linde's capital structure remains robust.

Linde's financing strategy involves securing long-term funding through public notes, debentures, and commercial paper supported by a long-term bank credit agreement. The Company funds its international operations with a mix of local borrowing and intercompany funding to minimize costs and centralize currency exchange risks. Additionally, Linde uses financial derivatives to manage interest rate exposure as needed. As of 31 December 2023, in addition to cash and cash equivalents of USD 4,664 million (2022: USD 5,436 million), Linde had unsecured and undrawn revolving credit facilities of USD 5 billion maturing in December 2027 and a 364-day revolving credit agreement of USD 1.5 billion.

As of 31 December 2023, long- and short-term financial debt totaled USD 18,907 million (2022: USD 17,561 million), of which USD 13,161 million was attributable to medium and long-term financial debt and USD 5,746 million to short-term financial debt.

Net debt increased by USD 2,118 million to USD 14,243 million compared to the previous year (2022: USD 12,125 million). The change is essentially attributable to a rise in bank debt of USD 1,346 million and a decline in cash and cash equivalents of USD 772 million. The main sources of funds in 2023 were cash flow from operating activities totaling USD 9,305 million (2022: USD 8,864 million) and net debt issuance of USD 1,060 million (2022: USD 4,475 million). Major uses of funds included capital expenditure of USD 3,787 million (2022: USD 3,173 million), net purchases of ordinary shares of USD 3,925 million (2022: USD 5,132 million), and dividends of USD 2,482 million (2022: USD 2,344 million).

Linde's financing and maturity structure is balanced, although the rise in interest rates in the financing area in the past fiscal year were reflected in higher interest expense and an increased interest expense to debt ratio of 1.46% (2022: 0.87%). Despite the upturn in net debt, the CRA's ratio of total net debt to EBITDA adjusted improved from 2.74 to a solid 2.38, largely due to a strong EBITDA improvement.

In the first quarter of 2024, reported cash flow from operating activities totaled USD 1.954 billion (Q1 2023: USD 1.908 billion), an increase of 2% compared to the same period of the previous year. After capital expenditure of USD 1,048 million, reported free cash flow was USD 906 million, thus below the prior year's level of USD 1,079 million, yet still demonstrating the Company's ability to finance investments internally. During the first quarter of 2024, Linde paid out USD 1,694 million to shareholders through dividends and share buybacks, net of issues. Cash and cash equivalents rose to USD 4,848 million (31.12.2023: USD 4,664 million). Reported net debt amounted to USD 15.471 million, corresponding to an increase of 5% compared to the end of 2023 (31.12.2023: USD 14.709 million).

Overall, we do not see any significant financial risks in the short and medium term, despite the high capital expenditure requirements. This assessment is based on the Company's good access to the financial markets, solid liquidity, and robust cash flow. Linde's healthy capital structure and diversified financing sources should enable the Company to overcome current challenges and effectively pursue its strategic goals. However, a further significant increase in net financial debt without a corresponding EBITDA growth could have a negative impact on the company's creditworthiness.

## Further ratings

In addition to the rating of Linde plc, the following Issuer and its issues (see below), have been rated.

- Linde Finance B.V.

Due to the corporate, strategic, liability, financial, economic and performance-related interdependencies of Linde Finance B.V. (a wholly owned subsidiary of Linde plc, which has been consolidated into the Group's annual accounts), we derive the unsolicited issuer ratings of this subsidiary from the unsolicited issuer rating of Linde plc and set it equal to its rating of A / stable. Based on the long-term issuer rating, and taking into account our liquidity analysis, the short-term rating of the Linde plc and Linde Finance B.V. has been set to L2 (standard mapping), which corresponds to a high level of liquidity.

The rating objects of the issue ratings are exclusively long-term senior unsecured issues, denominated in euro, issued by Linde plc and Linde Finance B.V., which are included in the list of ECB-eligible marketable assets.

The long-term local currency senior unsecured notes issued by Linde plc and Linde Finance B.V. are assigned an unsolicited rating of A / stable following a review of the relevant Debt Issuance Program (DIP) with the latest prospectus dated May 8, 2024, and the notice of the additional parent guarantee dated September 6, 2019. The ratings are based on the (respective) corporate issuer ratings.

Long-term local currency senior unsecured notes issued by Linde plc and the above-mentioned subsidiary, which have similar conditions to the current DIP, denominated in euro and included in the list of ECB-eligible marketable assets, generally receive the same ratings as the current LT LC senior unsecured notes issued under the DIP. Notes issued in any currency other than euro, or other types of debt instruments, have not yet been rated by CRA. For a list of all currently valid ratings and additional information, please consult the website of Creditreform Rating AG.

Table 5: Overview of CRA Ratings I Source: CRA

| Rating Category | Details | |
|---|---|---|
| | Date of rating committee | Rating |
| Linde plc | 18.07.2024 | A / stable / L2 |
| Linde Finance B.V. | 18.07.2024 | A / stable / L2 |
| Long-term Local Currency (LC) Senior Unsecured Issues issued by Linde plc | 18.07.2024 | A / stable |
| Long-term Local Currency (LC) Senior Unsecured Issues issued by Linde Finance B.V. | 18.07.2024 | A / stable |
| Other | -- | n.r. |

## Financial ratio analysis

Table 6: Financial key ratios |Source: Linde plc annual report 2023, structured by CRA

| Asset structure | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|
| Fixed asset intensity (%) | 78.53 | 78.91 | 73.61 | 74.54 |
| Asset turnover | -- | 0.57 | 0.63 | 0.59 |
| Asset coverage ratio (%) | 78.36 | 76.78 | 74.80 | 73.24 |
| Liquid funds to total assets | 6.40 | 5.15 | 9.93 | 8.42 |
| **Capital structure** | | | | |
| Equity ratio (%) | 49.63 | 48.23 | 42.07 | 40.70 |
| Short-term debt ratio (%) | 23.43 | 25.50 | 28.98 | 27.16 |
| Long-term debt ratio (%) | 11.91 | 12.36 | 12.99 | 13.89 |
| Capital lock-up period (in days) | 41.47 | 41.52 | 32.77 | 33.55 |
| Trade-accounts payable ratio (%) | 5.28 | 6.39 | 5.47 | 5.45 |
| Short-term capital lock-up (%) | 25.24 | 17.94 | 24.77 | 26.29 |
| Gearing | 0.89 | 0.97 | 1.14 | 1.25 |
| Leverage | -- | 2.04 | 2.22 | 2.42 |
| **Financial stability** | | | | |
| Cash flow margin (%) | -- | 26.17 | 24.25 | 29.28 |
| Cash flow ROI (%) | -- | 14.71 | 14.78 | 17.35 |
| Total debt / EBITDA adj. | 3.68 | 2.94 | 3.31 | 2.78 |
| Net total debt / EBITDA adj. | 3.21 | 2.65 | 2.74 | 2.38 |
| ROCE (%) | 8.37 | 13.68 | 15.30 | 21.79 |
| Total debt repayment period | -- | 2.79 | 4.18 | 3.61 |
| **Profitability** | | | | |
| Gross profit margin (%) | 100.00 | 100.00 | 100.00 | 100.00 |
| EBIT interest coverage | 12.25 | 23.00 | 20.66 | 17.09 |
| EBITDA interest coverage | 28.03 | 43.42 | 35.84 | 25.04 |
| Ratio of personnel costs to total costs (%) | 0.00 | 0.00 | 0.00 | 0.00 |
| Ratio of material costs to total costs (%) | 0.00 | 0.00 | 0.00 | 0.00 |
| Cost income ratio (%) | 86.98 | 83.20 | 83.04 | 75.18 |
| Ratio of interest expenses to total debt (%) | 0.99 | 0.80 | 0.87 | 1.46 |
| Return on investment (%) | 4.82 | 7.44 | 8.15 | 11.83 |
| Return on equity (%) | -- | 14.89 | 17.81 | 27.42 |
| Net profit margin (%) | 9.64 | 12.86 | 12.83 | 19.30 |
| Operating margin (%) | 13.17 | 16.96 | 17.15 | 24.97 |
| **Liquidity** | | | | |
| Cash ratio (%) | 27.34 | 20.20 | 34.26 | 30.98 |
| Quick ratio (%) | 66.46 | 59.25 | 69.01 | 68.84 |
| Current ratio (%) | 91.65 | 82.68 | 91.05 | 93.74 |

## Appendix

### Rating history

The rating history is available under the following link.

Table 7: Corporate Issuer Rating of Linde plc

| Event | Rating created | Publication date | Result |
|---|---|---|---|
| Initial rating | 18.07.2024 | www.creditreform-rating.de | A / stable |

Table 8: Corporate Issuer Rating of Linde Finance B.V.

| Event | Rating created | Publication date | Result |
|---|---|---|---|
| Initial rating | 18.07.2024 | www.creditreform-rating.de | A / stable |

Table 9: LT LC Senior Unsecured Issues issued by Linde plc

| Event | Rating created | Publication date | Result |
|---|---|---|---|
| Initial rating | 18.07.2024 | www.creditreform-rating.de | A / stable |

Table 10: LT LC Senior Unsecured Issues issued by Linde Finance B.V.

| Event | Rating created | Publication date | Result |
|---|---|---|---|
| Initial rating | 18.07.2024 | www.creditreform-rating.de | A / stable |

Table 10: Short-term issuer ratings of Linde plc and Linde Finance B.V.

| Event | Rating created | Publication date | Result |
|---|---|---|---|
| Initial rating | 18.07.2024 | www.creditreform-rating.de | L2 |

### Regulatory requirements

The rating[4] was not endorsed by Creditreform Rating AG (Article 4 (3) of the CRA-Regulation).

The present rating is, in the regulatory sense, an unsolicited rating, that is public. The analysis was carried out on a voluntary basis by Creditreform Rating AG, which was not commissioned by the Issuer or any other third party to prepare the present rating.

The rating is based on the analysis of published information and on internal evaluation methods for the assessment of companies and issues. The rating object was informed of the intention of creating or updating an unsolicited rating before the rating was determined.

The rating object participated in the creation of the rating as follows:

| **Unsolicited Corporate Issuer / Issue Rating** | |
|---|---|
| With rated entity or related third party participation | No |
| With access to internal documents | No |
| With access to management | No |

[4] In these regulatory requirements the term "rating" is used in relation to all ratings issued by Creditreform Rating AG in connection to this report. This may concern several companies and their various issues.

A management meeting did not take place within the framework of the rating process.

The documents and information gathered were sufficient to meet the requirements of Creditreform Rating AG's rating methodologies.

The rating was conducted based on the following rating methodologies and the basic document.

| Rating methodology | Version number | Date |
|---|---|---|
| Corporate Ratings | 2.4 | July 2022 |
| Corporate Short-Term Ratings | 1.0 | June 2023 |
| Non-financial Corporate Issue Ratings | 2.0 | March 2024 |
| Rating Criteria and Definitions | 1.3 | January 2018 |

The documents contain a description of the rating categories and a definition of default.

The rating was carried out by the following analysts:

| Name | Function | Mail-Address |
|---|---|---|
| Natallia Berthold | Lead-analyst | N.Berthold@creditreform-rating.de |
| Christina Sauerwein | Analyst | C.Sauerwein@creditreform-rating.de |

The rating was approved by the following person (person approving credit ratings, PAC):

| Name | Function | Mail-Address |
|---|---|---|
| Philipp Beckmann | PAC | P.Beckmann@creditreform-rating.de |

On 18 July 2024, the analysts presented the rating to the rating committee and the rating was determined. The rating result was communicated to the company on 18 July 2024. There has not been a subsequent change to the rating.

The rating will be monitored until Creditreform Rating AG withdraws the rating. The rating can be adjusted as part of the monitoring, if crucial assessment parameters change.

In 2011, Creditreform Rating AG was registered within the European Union according to EU Regulation 1060/2009 (CRA-Regulation). Based on this registration, Creditreform Rating AG is allowed to issue credit ratings within the EU and is bound to comply with the provisions of the CRA-Regulation.

### ESG-factors

You can find out whether ESG factors were relevant to the rating in the upper section of this rating report "Relevant rating factors".

A general valid description for Creditreform Rating AG, as well as a valid description of corporate ratings for understanding and assessing ESG factors in the context of the credit rating process, can be found here.

### Conflict of interests

No conflicts of interest were identified during the rating process that might influence the analyses and judgements of the rating analysts involved or any other natural person whose services are placed at the disposal or under the control of Creditreform Rating AG and who are directly involved in credit rating activities or in approving credit ratings and rating outlooks.

Creditreform Rating AG guarantees that the provision of ancillary services does not cause a conflict of interest with its rating activities and discloses in the final rating report which ancillary services were provided for the rating object or for third parties associated with it. The following ancillary services were provided for this rating object or for related third parties:

No ancillary services in the regulatory sense were provided for this rating.

The final list of rating-related and credit services can be viewed on the Creditreform Rating AG website at https://www.creditreform-rating.de/de/wir-ueber-uns/regulatorische-anforderungen.html#nebendienstleistungen."

**Rules on the presentation of credit ratings and rating outlooks**

The approval of credit ratings and rating outlooks follows our internal policies and procedures. In line with our "Rating Committee Policy", all credit ratings and rating outlooks are approved by a rating committee based on the principle of unanimity.

To prepare this credit rating, Creditreform Rating AG has used following substantially material sources:

Corporate issuer rating:

1. Annual report
2. Website
3. Internet research

Corporate issue rating:

1. Corporate issuer rating incl. information used for the corporate issuer rating
2. Documents on issues / instruments

There are no other attributes and limitations of the credit rating or rating outlook other than those displayed on the Creditreform Rating AG website. Furthermore, Creditreform Rating AG considers as satisfactory the quality and extent of information available on the rated entity. With respect to the rated entity, Creditreform Rating AG regarded available historical data as sufficient.

Between the time of disclosure of the credit rating to the rated entity and the public disclosure, no amendments were made to the credit rating.

The Basic Data Information Card indicates the principal methodology or version of methodology that was used in determining the rating, with a reference to its comprehensive description.

In cases where the credit rating is based on more than one methodology or where reference only to the principal methodology might cause investors to overlook other important aspects of the credit rating, including any significant adjustments and deviations, Creditreform Rating AG explains this fact in the credit rating report and indicates how the different methodologies or other aspects are taken into account in the credit rating. This information is integrated in the credit rating report.

The meaning of each rating category, the definition of default or recovery and any appropriate risk warning, including a sensitivity analysis of the relevant key rating assumptions such as mathematical or correlation assumptions, accompanied by worst-case scenario credit ratings and best-case scenario credit ratings are explained.

The date at which the credit rating was initially released for distribution and the date when it was last updated, including any rating outlooks, is indicated clearly and prominently in the Basic Data Information Card as a "rating action"; initial release is indicated as "initial rating", other updates are indicated as an "update", "upgrade" or "downgrade", "not rated", "confirmed", "selective default" or "default".

In the case of a rating outlook, the time horizon is provided during which a change in the credit rating is expected. This information is available within the Basic Data Information Card.

In accordance with Article 11 (2) EU-Regulation (EC) No 1060/2009, a registered or certified credit rating agency shall make available, in a central repository established by ESMA, information on its historical performance data including the rating transition frequency and information about credit ratings issued in the past and on their changes. Requested data are available at the ESMA website.

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