Why Linde
Why Linde

Outline

1. Introduction to Industrial Gases
2. Introduction to Linde
   2.1 Overview
   2.2 Gases
   2.3 Engineering
3. Strategy
4. Capital Allocation Policy
5. Through an ESG Lens
6. Summary
7. Appendix
Introduction to Industrial Gases
Industrial Gases – Primary Products

— Atmospheric Gases
  - Nitrogen
  - Oxygen
  - Argon
  - Rare gases:
    - Krypton
    - Neon
    - Xenon

— Process Gases
  - Hydrogen
  - Carbon dioxide
  - Helium
  - Carbon monoxide
  - Acetylene
  - Propane
  - Propane

\[ \text{N}_2 \quad \text{O}_2 \quad \text{Ar} \quad \text{Ne} \quad \text{Kr} \quad \text{H}_2 \quad \text{CO}_2 \quad \text{C}_2\text{H}_2 \quad \text{He} \quad \text{CO} \quad \text{C}_3\text{H}_8 \]
Industrial Gases – Introduction

What Are Industrial Gases?

- Most common industrial gases are oxygen, nitrogen, hydrogen, carbon dioxide and argon
- Atmosphere consists of 78% nitrogen, 21% oxygen, 1% argon and traces of neon, krypton and xenon

How Are They Produced?

- Atmospheric Gases: produced when air is purified, compressed, cooled, distilled and condensed
- Process Gases: produced or recovered from natural gas or as by-products of chemical production

Where Are They Used?

<table>
<thead>
<tr>
<th>Consumer Related</th>
<th>Industry Related</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare</td>
<td>Chemicals &amp; Energy</td>
</tr>
<tr>
<td>Food &amp; Beverage</td>
<td>Manufacturing</td>
</tr>
<tr>
<td>Electronics</td>
<td>Metals &amp; Mining</td>
</tr>
</tbody>
</table>

Who Are the Global Players?

- Linde
- Air Liquide
- Messer
- Taiyo Nippon Sanso

Industrial Gas Market Size: $100+ Billion
Industrial Gases – Distribution Modes

- Pipeline On-site
- Merchant
- Packaged
- Truck
- Cylinder Truck
- Filling Plant

CUSTOMER TYPE
- On-site
- Merchant
- Packaged

Volume & Capital Intensity
- High
- Low

# of Transactions
- Low
- High

Air Separation Unit
## Industrial Gases – Product Overview

<table>
<thead>
<tr>
<th>Products</th>
<th>Primary Sources</th>
<th>Feedstock</th>
<th>Distribution Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen</td>
<td></td>
<td>Air + Power</td>
<td>Packaged Merchant On-site</td>
</tr>
<tr>
<td>Nitrogen</td>
<td></td>
<td>Air + Power</td>
<td>Packaged Merchant On-site</td>
</tr>
<tr>
<td>Argon</td>
<td></td>
<td>Air + Power</td>
<td>Packaged Merchant On-site</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>SMR, ATR, POX¹ and Electrolysis</td>
<td>Hydrocarbons/Power or Crude Hydrogen</td>
<td>Packaged Merchant On-site</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>By-product</td>
<td>Crude Carbon Dioxide</td>
<td>Packaged Merchant On-site</td>
</tr>
<tr>
<td>Helium</td>
<td>Helium Reserve</td>
<td>Hydrocarbons Fields</td>
<td>Packaged Merchant On-site</td>
</tr>
<tr>
<td>Rare Gases</td>
<td>Air Separation</td>
<td>Air + Power</td>
<td>Packaged Merchant On-site</td>
</tr>
</tbody>
</table>

¹ SMR: Steam Methane Reformer; ATR: Auto Thermal Reformer; POX: Partial Oxidation.
Linde Overview

A leader in an attractive industry with products & services critical to customers
Our Vision
To be the best performing global industrial gases and engineering company, where our people deliver innovative and sustainable solutions for our customers in a connected world.

Our Mission
Making our world more productive.

Our Values
Safety, Integrity, Community, Inclusion, Accountability
Linde Overview

### 2023 Key Facts

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales ($B)</td>
<td>33</td>
</tr>
<tr>
<td>EBIT ($B)</td>
<td>9</td>
</tr>
<tr>
<td>EBIT Margin</td>
<td>27.6%</td>
</tr>
<tr>
<td>OCF ($B)</td>
<td>9</td>
</tr>
<tr>
<td>ROC</td>
<td>25.4%</td>
</tr>
<tr>
<td>FTEs (’000)</td>
<td>66</td>
</tr>
</tbody>
</table>

### 2023 Revenue by Segment

- **Gases**
  - Americas: 44%
  - APAC: 26%
  - EMEA: 20%
- **Other**
  - Engineering: 7%
- **Total**: 100%

Source: 2023 Public filing, non-GAAP figures.

1. Includes Linde Advanced Material Technologies, GIST and Global Helium & Rare Gases.
Historical Performance

Consistently Outperforming Peers and the Market

1. Pre-2019 (merger) data uses predecessor company Praxair, Inc.
2. Competitors include Air Liquide, Air Products & Taiyo Nippon Sanso.
Integrated Supply Model

Contracts Types

**On-site: 15 – 20 years**
- Take-or-pay, guaranteed return
- Cost pass-through

**Merchant: 3 – 7 years**
- Creates network density
- Contracts & services
- Scale, efficient production, distribution & low-cost energy

**Packaged: 1 – 3 years**
- Creates network density
- Bundle offerings & services

Sales by Distribution Mode¹

[Chart showing distribution mode percentages]

Network Density Drives Leading Returns

[Map showing Linde worldwide distribution]

Sales by End Markets

**Consumer Related End Markets**
*More Resilient*
- Healthcare
  - 17%
  - Hospitals
  - Medical Offices and Clinics
  - Homecare Customers
  - Diagnostic Facilities (MRI)
- Food & Beverage
  - 9%
  - Beverage Companies
  - Food & Frozen Food Producers
  - Agricultural Produce & Fish Farmers
- Electronics
  - 9%
  - Semiconductor Fabricators
  - Solar Panel Manufacturers
  - Display / LED Manufacturers

**Industrial Related End Markets**
*More Cyclical*
- Chemicals & Energy
  - 22%
  - Oil Companies
  - Chemical Companies
  - Syngas Users
- Manufacturing
  - 22%
  - Automotive & Aerospace OEMs
  - Pulp & Paper Producers
  - Consumer Goods Manufacturers
  - Battery Manufacturers
- Metals & Mining
  - 14%
  - Steelmakers
  - Metal Recovery & Recycling Companies
  - Mining Companies

**A Well-Balanced Portfolio**

Gases Geographic Segments

AMERICAS
Sales: $14.3B
EBIT: $4.2B
OPM: 30%

EMEA
Sales: $8.5B
EBIT: $2.5B
OPM: 29%

APAC
Sales: $6.6B
EBIT: $1.8B
OPM: 28%

North America
– Linde Gases US
– Canada
– Linde Gas & Equipment

Latin America
– North Latin America
– South Latin America

Lincare

Europe West
Europe East (incl ME)
Europe North
UK/Ireland
Africa

Greater China
South Pacific
South Korea
ASEAN & South Asia

Source: 2023 Public filings, non-GAAP figures.
EBIT: Earnings Before Interest and Taxes, OPM: Operating Profit Margin.
Defensive Business Model...
...Provides Significant Downside Protection

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**Defensive sales:**

- Resilient end-markets and global footprint diversifies risk
- Long-term supply agreements with high-quality customers and fixed fee elements
- Steady rental payments (e.g. tanks, cylinders, equipment)

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1. 2022 sales excluding Linde Engineering.
Linde Engineering

World-Class Engineering capabilities to execute large projects
## Engineering Overview

### Business Model
- **Key enabler** for onsite projects (sale of gas)
- **T-EPC**, selective E, E&P, EPC based on risk and profitability
- Full plant **lifecycle services**
- **Components** business

### Technology
- **Holistic blue and green** hydrogen offerings
- **Best-in-class** air gases technologies
- **Decarbonization** innovations
- Partnering with **customers**

### Execution
- **World-class** execution capabilities around the world
- Ability to **incorporate** any (licensed) technology
- **Outstanding** track record
- **Efficient** processes, tools & optimized organization

### People
- Acknowledged **experts** in core disciplines
- Highly **skilled, innovative** and **talented** engineers
- Strong loyalty, knowhow retention
- **Empowered** leaders

### Offering
- Air Separation Units
- Hydrogen and Syngas
- Petrochemicals
- Natural Gas

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T-EPC: Technology - Engineering, Procurement and Construction.
Strategy

Delivers on average 10%+ EPS growth plus clean energy
Linde Strategy
Underpinned by Safety, Compliance, People and Sustainability

Our Strategy...

OPTIMIZE
Base

CAPITALIZE
Growth

PRIORITIZE
Clean Energy

... And Its Execution

— Pricing
— Productivity
— Density
— Innovation
— Secular Growth
— Backlog
— Technology Advantage
— Partnerships
— Opportunity Pipeline

Deliver 10%+ Annual EPS Growth
Capitalize Growth
High-Quality Project Backlog $8.5B+¹

SOP Backlog² $3.6B

- Contractual growth
- Secure cash flow
- Double-digit IRR
- High-quality customers
- Primarily engineering & procurement services

SOG Backlog³ $4.9B

- Contractual growth
- Secure cash flow
- Double-digit IRR
- High-quality customers
- Increases network density

> $2B in Decarbonization Projects

¹. As of December 2023.
². 3rd party sale of plant backlog. Represents future sales, secured under a signed agreement.
³. Sale of gas backlog. Represents project investments (CAPEX), supported by a long-term supply agreement.
Clean Energy Transition

Today’s Energy Market

>80% is Fossil Fuel based (coal, oil & natural gas)

… with CO₂ footprint

Clean Energy Market

Blue Hydrogen (incl. ammonia & methanol)

Grey H₂ production with CO₂ capture and permanent storage

Green Hydrogen (incl. ammonia & methanol)

Water electrolysis powered by renewable energy with no CO₂ emission

Carbon Solutions

CO₂ capture from industrial processes with permanent CO₂ storage

A Growth Opportunity in Linde’s Wheelhouse

1. Clean Energy (CE) is associated with minimal or no emissions, especially greenhouse gases like CO₂ which are responsible for climate change. Renewable Energy (i.e., wind, solar, hydro, biomass) is critical to CE, as is Carbon Capture and Storage (CCS). At Linde we use/limit this term only in relation to hydrogen and CCS. By 2030, the Clean Energy market is expected to be $130B (based on 38MMT of H₂ demand for new uses).
<table>
<thead>
<tr>
<th>Clean Energy Technology</th>
<th>Full Portfolio to Support Decarbonization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Production</strong></td>
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<tr>
<td>Blue and Green Hydrogen</td>
<td></td>
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<tr>
<td>Electrolysis – PEM, AEL</td>
<td></td>
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<tr>
<td>SOEC</td>
<td></td>
</tr>
<tr>
<td>Blue / Green Ammonia Synthesis</td>
<td>Ammonia Cracking</td>
</tr>
<tr>
<td>Distribution</td>
<td></td>
</tr>
<tr>
<td>H₂ Liquefaction Scale-Up</td>
<td>50 tpd</td>
</tr>
<tr>
<td>200 tpd</td>
<td></td>
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<tr>
<td>H₂ Transportation incl. Carrier</td>
<td></td>
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<tr>
<td><strong>Refueling</strong></td>
<td></td>
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<tr>
<td>H₂ Refueling</td>
<td></td>
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<tr>
<td><strong>Carbon Avoidance</strong></td>
<td></td>
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<tr>
<td>Flexible Air Separation</td>
<td></td>
</tr>
<tr>
<td>Linde Sustainable Olefin Technology incl. e-Furnace</td>
<td>Coolbrook Roto Dynamic Reactor</td>
</tr>
<tr>
<td><strong>Carbon Capture</strong></td>
<td></td>
</tr>
<tr>
<td>HISORP® CC, Amine Wash (Pre-Combustion Capture &amp; PCC)</td>
<td>Direct Air Capture</td>
</tr>
<tr>
<td>EDHOX™ for Ethylene Production</td>
<td></td>
</tr>
</tbody>
</table>

Leading Technologies Enable Linde & Customers to Avoid or Capture and Store CO₂
Capabilities Throughout the Value Chain

**Production**
- SMR, ATR, POX...
- Electrolysis
  - Grey H₂
  - Blue H₂
  - Green H₂

...with CCS

**Distribution, Storage & Service**
- Pipelines
- Liquefaction
- Trailers
- Underground storage
- Tanks
- H₂ refueling stations

**Markets**

**Industry**
- Chemicals industry
- Fertilizer
- Steel

**Power**
- Power generation
- NH₃ co-firing

**Mobility**
- Aviation
- Buses
- Marine fuel
- Rail
- Trucks

SMR: Steam Methane Reformer; ATR: Autothermal Reformer; POX: Partial Oxidation; CCS: Carbon Capture and Storage.
Linde’s Clean Energy Opportunity

Well Positioned to Invest >$50B Globally

Decarbonize Linde

- Decarbonize current Linde assets e.g., SMRs, ATRs, POX
- Consistent with sustainability goals: 35% reduction by 2035, Net Zero by 2050
  - Blue hydrogen

Decarbonize Customer

- Decarbonize customer processes e.g., Petrochemicals, Refining, Steel, Power Generation
  - Blue & green H₂, O₂, H₂ storage, CO₂ capture & transportation

New Markets

- Enable new markets e.g., clean ammonia, sustainable fuels, mobility, carbon management
  - Blue/green H₂, N₂, O₂, H₂ storage, CO₂ capture & transportation

Investment Opportunity Over the Next Decade

SMR: Steam Methane Reformer; POX: Partial Oxidation; ATR: Autothermal Reformer; HRS: Hydrogen Refueling Stations.
Capital Allocation Policy

Good stewards of capital – no surprises
Capital Allocation Policy

Mandate
Maintain A / A2 Credit Rating
Annually increase dividend

Priority
Invest in the Business

Surplus Cash
Share Buybacks

Key Drivers

- Double digit returns
- Reputable customers
- Competitive customer assets
- Strong terms and conditions
- Core geographies

Risk / Reward

Unlevered, post tax,
low double digit returns

WACC: Weighted Average Cost of Capital.
Through an ESG Lens

We help our customers avoid more than 2x our own GHG emissions
Environmental

~2.3x
Linde Applications Enable More Than 2x Carbon Productivity

39.9 million Emitted
MT CO₂e
Linde GHG footprint

16.3 million MT CO₂e Scope 1 GHG emissions: 11.4 million MT from hydrogen production, 4.9 million from other GHG emissions, driving and natural gas use

23.6 million MT CO₂e Scope 2 indirect GHG emissions emitted mainly from the power consumed at air separation plants

90 million Total
MT CO₂e benefits
enabled by Linde applications

51.2 million Avoided
MT CO₂e

14 million MT CO₂e avoided from coatings for thermal barriers for industrial gas turbine and jet engine efficiency

63 million MT CO₂e avoided from H₂ for ultra-low sulfur diesel (ULSD)

12 million MT CO₂e avoided from O₂ for steelmaking

3 million MT CO₂e avoided from Kr in windows and Ar in welding

Values are based on 2022 reported and consolidated results from Linde plc subsidiaries following Linde plc reporting standards. CO₂e = CO₂ equivalents.
Environmental
Road to Climate Neutrality*

2028
35% Reduction of GHG Intensity¹
Status: Ahead of Goal

Achievements include:
— Realized steady GHG intensity reduction since 2018
— Increased active procurement of renewable and low carbon energy
— Commenced discussions for several "blue and green" hydrogen projects

2035
35% Reduction of Absolute GHG Emissions
Status: Reduction Underway

Activities include:
— Developing several CCS² projects
— Investigating renewable feedstocks
— Achieved reduction toward goal in first year

2035 goal approved by:

2050
Climate Neutral³

Status: Roadmap in Place

Activities include:
— Deploy widespread use of CCS and renewable feedstocks
— Transition fleet to zero emissions
— Target sourcing of ~100% renewable / low-carbon power
— Address remainder through negative emissions projects

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¹ Greenhouse gas (GHG) emissions / Adj. EBITDA.
² Carbon capture and sequestration.
³ Requires strong policy and regulatory support.

* Aligned with the Paris Accords. Targets relate to all of Linde’s Scope 1 and Scope 2 emissions.
Sustainable Development
Making Our World More Productive, Sustainably

Recognitions & Awards

Dow Jones Sustainability World Index
— Included in DJSI World for 21 consecutive years

S&P Global Corporate Sustainability Assessment
— 100th Percentile in Chemicals; #1 in Industrial Gases

CDP
— Linde named to 'A-list' for both climate change and water security

S&P Sustainability Yearbook 2023

Science-Based Target Approval
— Linde's 2035 climate change goal validated by SBTi

Terra Carta Seal: Sustainable Markets Initiative

FTSE4Good Index
— Constituent for 8th consecutive year

World's Most Ethical Companies
— Ethisphere Institute

Bloomberg 2023 Gender-Equality Index

Achievements

Diverted more than 200 million pounds of waste from landfills

On track to achieve 30% representation of women globally by 2030

Saved approximately 400 million gallons of water through sustainability initiatives

Helped customers avoid approximately 90 million metric tonnes of equivalent carbon dioxide

Provided philanthropic support to more than 1,000 organizations globally

Benefited 300,000 people through employee community engagement projects

Sourced more than 1/3 of electricity from low-carbon and renewable sources

Best-in-class safety performance

1. Values are based on 2022 Linde reported and consolidated results.
Social Responsibility

29% of 2022 Charitable giving funded Diversity-related initiatives

Awarded >$1.75 million in scholarships and university programs in 2022

12 Employee Resource Groups with >1,000 members

First all-women operated packaged gases filling plant in India

Collaboration with external organizations to advance diversity

60,000 Total volunteer hours as part of 2022 community engagement efforts

759 Sites participated in Linde’s Zero Waste Program in 2022

30% Reduction in Lost Workday Cases from 2018 to 2021

Values are based on 2022 Linde reported and consolidated results.
Governance

— **Annual Election** of Directors
— **Separate Chairman and CEO** roles & a lead Independent Director
— **Board diversity:**
  - Board is 40% diverse by gender & ethnicity
  - Appropriate **mix of newer & longer-tenured Directors**
— **Significant stock ownership guidelines** for Directors and Executives

— **Clawback policy & prohibition on hedging or pledging** Linde stock
— **Dedicated Board committees** focused on:
  - **Environment** – Sustainability Committee
  - **Social** – Human Capital Committee
  - **Governance** – Nomination & Governance Committee, and Audit Committee
Summary

The best performing global industrial gases and engineering company
Linde Because…

— Leader in an attractive industry with products & services critical to customers
— Unrivalled network density across all supply modes
— Enabling energy transition, ~$50B investment opportunity pipeline globally
— World-class capabilities with proven track record of execution
— Providing customers with solutions that avoid >2X our GHG emissions
— Best-in-class financial performance with unwavering capital discipline
— Exceptional team with business owner mentality

... Focused on Consistently Creating Value for Stakeholders
Appendix
5-Year Financial Performance

Industry Leading Results Where It Matters Most

Source: Competitor filings and Factset. ROC calculated on a similar basis to Linde. (1) Non-GAAP measures – see appendix or prior year presentations for reconciliations. (2) Operating cash flow starts 2019 due to no 2018 proforma for Linde plc. Competitor 1 pending 2023 results. Used consensus estimates for 2023 (dotted line)
5-Year Total Shareholder Return\(^{(1)}\) (TSR)

Source: Competitor filings and Factset.

\(^{(1)}\) Measures change in stock price plus dividends paid.

Linde, one of only 12 members in S&P 500 (and only in sector) with positive alpha 5 consecutive years

**A Company for All Seasons**
Historical Performance*

*Information prior to merger (2019) is considered of Praxair.

Sales ($B)

Operating Cash Flow ($B)

EPS ($)

Dividend ($)
Making our world more productive

Thank you