Making our world more productive

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
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?

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

CUSTOMER TYPE
- On-site
- Merchant
- Packaged

Air Separation Unit → Pipeline → Merchant
Air Separation Unit → Truck → Merchant
Air Separation Unit → Cylinder Truck → Packaged

Volume & Capital Intensity
- High
- Low

# of Transactions
- High
- Low

Filling Plant
# 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>Air Separation</td>
<td>Air + Power</td>
<td>Packaged</td>
</tr>
<tr>
<td>Nitrogen</td>
<td></td>
<td></td>
<td>Merchant</td>
</tr>
<tr>
<td>Argon</td>
<td></td>
<td></td>
<td>On-site</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>SMR, ATR, POX(^1) and Electrolysis</td>
<td>Hydrocarbons/Power or Crude Hydrogen</td>
<td>National</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>By-product</td>
<td>Crude Carbon Dioxide</td>
<td></td>
</tr>
<tr>
<td>Helium</td>
<td>Heium Reserve</td>
<td>Hydrocarbons Fields</td>
<td>Global</td>
</tr>
<tr>
<td>Rare Gases</td>
<td>Air Separation</td>
<td>Air + Power</td>
<td></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

2022 Key Facts

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Sales ($B)</td>
<td>33</td>
</tr>
<tr>
<td>EBIT ($B)</td>
<td>8</td>
</tr>
<tr>
<td>EBIT Margin</td>
<td>23.7%</td>
</tr>
<tr>
<td>OCF ($B)</td>
<td>9</td>
</tr>
<tr>
<td>ROC</td>
<td>22.9%</td>
</tr>
<tr>
<td>FTEs (‘000)</td>
<td>65</td>
</tr>
</tbody>
</table>

2022 Revenue by Segment

- **Gases**: 42%
- **Americas**: 20%
- **EMEA**: 25%
- **APAC**: 8%
- **Engineering**: 5%
- **Other¹**: 8%

Global Company With High-quality Results

Source: 2022 Public filing, non-GAAP figures.
1. Includes Linde Advanced Material Technologies, GIST and Global Helium & Rare Gases.
Linde Gases

Resilience and Growth

2.2
Historical Performance

Results 1993 – 2022

<table>
<thead>
<tr>
<th>CAGR</th>
<th>Linde(^1)</th>
<th>Key Competitors(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>EPS</td>
<td>11%</td>
<td>8%</td>
</tr>
<tr>
<td>Dividend</td>
<td>13%</td>
<td>9%</td>
</tr>
<tr>
<td>OCF</td>
<td>11%</td>
<td>7%</td>
</tr>
</tbody>
</table>

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 Mode

- Onsite: 33%
- Packaged: 27%
- Merchant: 26%
- Other: 14%

Network Density Drives Leading Returns

- ASU plant: 450+
- CO₂ plant: 100+
- HyCO plant: 150+
- PKG plant: 800+

### Sales by End Markets

#### Consumer Related End Markets

<table>
<thead>
<tr>
<th>End Market</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Healthcare</strong></td>
<td>16%</td>
</tr>
<tr>
<td>Hospitals</td>
<td></td>
</tr>
<tr>
<td>Medical Offices and Clinics</td>
<td></td>
</tr>
<tr>
<td>Homecare Customers</td>
<td></td>
</tr>
<tr>
<td>Diagnostic Facilities (MRI)</td>
<td></td>
</tr>
</tbody>
</table>

#### Industrial Related End Markets

<table>
<thead>
<tr>
<th>End Market</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemicals &amp; Energy</strong></td>
<td>25%</td>
</tr>
<tr>
<td>Oil Companies</td>
<td></td>
</tr>
<tr>
<td>Chemical Companies</td>
<td></td>
</tr>
<tr>
<td>Syngas Users</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>End Market</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manufacturing</strong></td>
<td>19%</td>
</tr>
<tr>
<td>Automotive &amp; Aerospace OEMs</td>
<td></td>
</tr>
<tr>
<td>Pulp &amp; Paper Producers</td>
<td></td>
</tr>
<tr>
<td>Consumer Goods Manufacturers</td>
<td></td>
</tr>
<tr>
<td>Battery Manufacturers</td>
<td></td>
</tr>
</tbody>
</table>

#### Electronics

<table>
<thead>
<tr>
<th>End Market</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electronics</strong></td>
<td>9%</td>
</tr>
<tr>
<td>Semiconductor Fabricators</td>
<td></td>
</tr>
<tr>
<td>Solar Panel Manufacturers</td>
<td></td>
</tr>
<tr>
<td>Display / LED Manufacturers</td>
<td></td>
</tr>
</tbody>
</table>

#### Metals & Mining

<table>
<thead>
<tr>
<th>End Market</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Metals &amp; Mining</strong></td>
<td>14%</td>
</tr>
<tr>
<td>Steelmakers</td>
<td></td>
</tr>
<tr>
<td>Metal Recovery &amp; Recycling Companies</td>
<td></td>
</tr>
<tr>
<td>Mining Companies</td>
<td></td>
</tr>
</tbody>
</table>

**A Well Balanced Portfolio**

Source: 2022 public filings. Total sales excluding Linde Engineering sales. Balance of 7% relates to ‘Other End Markets’.
Gases Geographic Segments

**AMERICAS**
- Sales: $13.9B
- EBIT: $3.7B
- OPM: 27%

**EMEA**
- Sales: $8.4B
- EBIT: $2.0B
- OPM: 24%

**APAC**
- Sales: $6.5B
- EBIT: $1.7B
- OPM: 26%

**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: 2022 Public filings, non-GAAP figures.
EBIT: Earnings Before Interest and Taxes, OPM: Operating Profit Margin.
Defensive Business Model...  
...Provides Significant Downside Protection

By End Market

- Health-care: 16%
- Electronics: 9%
- Food & Beverage: 10%
- Chemicals & Energy: 25%
- Metals & Mining: 14%
- Manufacturing: 16%
- Other: 7%

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)

By Geography

- APAC: 38% (62% Defensive), 71% (29% Cyclical)  
- Americas: 61% (29% Defensive), 39% (71% Cyclical)  
- EMEA: 52% (39% Defensive), 48% (61% Cyclical)

~66% of Sales\(^1\) are Defensive

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

Integrator of Technologies

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 $9B+\textsuperscript{1}

SOP Backlog\textsuperscript{2} $3.5B

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

SOG Backlog\textsuperscript{3} $5.7B

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

> $2B in Decarbonization Projects

1. As of December 2022.
2. 3\textsuperscript{rd} 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.
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).
## Full Suite of Technologies to Support Energy Transition

**Blue and Green Hydrogen**

<table>
<thead>
<tr>
<th>Production</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMR, ATR, POX + Carbon Capture technologies</td>
<td>SOEC</td>
</tr>
<tr>
<td>Electrolysis – PEM, AEL</td>
<td></td>
</tr>
</tbody>
</table>

**Distribution**

<table>
<thead>
<tr>
<th>H₂ Liquefaction Scale-Up</th>
<th>50 tpd</th>
<th>200 tpd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue / Green Ammonia Synthesis</td>
<td>Ammonia Cracking</td>
<td></td>
</tr>
<tr>
<td>H₂ Transportation incl. Carrier</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Refueling**

| H₂ Refueling |

**Carbon Solutions**

**Upstream Carbon Reduction**

| Flexible Air Separation |
| Dry Reforming |

**In-Plant Carbon Reduction**

| PSA, Membrane, Cryogenic, Amine Wash |

**Downstream Carbon Reduction**

| PSA, Amine Wash, Oxyfuel |

---

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

Production
- SMR, ATR, POX...
- Electrolysis
- ...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

Grey H₂  Blue H₂  Green H₂

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
- Carbon capture & transportation

Decarbonize Customer
- Decarbonize customer processes e.g., Petrochemicals, Refining, Steel, Power Generation
- Blue & green H₂, O₂, H₂ storage, CO₂ capture & transportation
- ASUs, ATRs, electrolyzers, carbon capture & transportation, caverns

New Markets
- Enable new markets e.g., clean ammonia, sustainable fuels, mobility, carbon management
- Blue/green H₂, N₂, O₂, H₂ storage, CO₂ capture & transportation
- ASUs, ATRs, electrolyzers, H₂ liquefiers, carbon capture & transportation, caverns, HRS

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.

Disciplined Investment Approach

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

38.8 million Emitted

MT CO₂e

Linde GHG footprint

16.8 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

22 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*

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

* Aligned with the Paris Accords. Targets relate to all of Linde’s Scope 1 and Scope 2 emissions.

¹. Greenhouse gas (GHG) emissions / Adj. EBITDA.
². Carbon capture and sequestration.
³. Requires strong policy and regulatory support.
Sustainable Development
Making Our World More Productive, Sustainably

Recognitions & Awards

Dow Jones Sustainability World Index
— Included in DJSI World for 20 consecutive years

S&P Global Corporate Sustainability Assessment
— 99th Percentile in Chemicals; #1 in Industrial Gases

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

S&P Sustainability Yearbook 2022

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

Terra Carta Seal: Sustainable Markets Initiative

FTSE4Good Index
— Constituent for 7th consecutive year

World's Most Ethical Companies
— Ethisphere Institute

Bloomberg 2022 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
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

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

First all-women operated packaged gases filling plant in India

Collaboration with external organizations to advance diversity

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

30% Reduction in Lost Workday Cases from 2018 to 2021
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
Historical Performance

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

Sales ($B)

EPS ($)

Operating Cash Flow ($B)

Dividend ($)

*Information prior to merger (2019) is considered prior to Praxair.
## 2022 Financial Comparison

<table>
<thead>
<tr>
<th>Competitor</th>
<th>Revenue $B</th>
<th>Adj. EPS YoY%</th>
<th>OCF $B</th>
<th>Adj. EBIT (FY 2022) %</th>
<th>Adj. ROC* (FY 2022) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linde</td>
<td>33</td>
<td>15%</td>
<td>9</td>
<td>24%</td>
<td>23%</td>
</tr>
<tr>
<td>Competitor 1</td>
<td>31</td>
<td>7%</td>
<td>6</td>
<td>16%</td>
<td>10%</td>
</tr>
<tr>
<td>Competitor 2</td>
<td>13</td>
<td>12%</td>
<td>3</td>
<td>20%</td>
<td>13%</td>
</tr>
<tr>
<td>Competitor 3</td>
<td>9</td>
<td>-2%</td>
<td>1</td>
<td>10%</td>
<td>5%</td>
</tr>
</tbody>
</table>

*Based on 2022 public filings, non-GAAP figures. Adjusted / recurring ROC after tax.
Comparison is based on 2022 Financials, calendarized and converted to USD for all competitors (source FactSet).
Making our world more productive

Thank you