20230705429080

Årsredovisning

för

LindeGas Holding Sweden AB

556740-8991

Räkenskapsåret

2022

Fastställelseintyg

Undertecknad styrelseledamot i LindeGas Holding Sweden AB intygar att resultaträkningen och balansräkningen i årsredovisningen har fastställts på årsstämma den 20 juni 2023. Årsstämman beslutade att godkänna styrelsens förslag till resultatdisposition.

Jag intygar också att innehållet i årsredovisningen och revisionsberättelsen stämmer överens med originalen.

Solna den 20 juni 2023

Klas Stylander

20230705429B1

Styrelsen och verkställande direktören för LindeGas Holding Sweden AB avger följande årsredovisning för räkenskapsåret 2022.

Årsredovisningen är upprättad i Euro, EUR. Om inget annat särskilt anges, redovisas alla belopp i miljontals Euro (MEUR).

Förvaltningsberättelse

Information om verksamheten

LindeGas Holding Sweden AB är ett helägt dotterbolag till Linde GmbH med säte i Tyskland. Linde GmbH ingår i en koncern där Linde Plc med säte i Dublin, Irland, upprättar koncernredovisning för den största koncernen.

LindeGas Holding Sweden AB är det svenska holdingbolaget för Linde-bolagen. LindeGas Holding Sweden AB med dotterbolag ingår i Lindes koncernredovisning. Bolaget har inga anställda och ingen ytterligare verksamhet.

Företaget har sitt säte i Stockholm.

Väsentliga händelser under räkenskapsåret

Vi har fortsatt beaktat hur effekterna/riskerna av pandemin samt det rådande ekonomiska läget påverkar bolagets utveckling och dess finansiella rapportering. Vår bedömning är att påverkan fortsatt är begränsad. Utdelningar som under året erhölls placerades i kortfristig deposition i Linde Finance B.V.

Väsentliga händelser efter räkenskapsårets slut

Inga väsentliga händelser har noterats.

Användande av finansiella instrument

Huvudsakligen hanteras finansiella risker såsom valutarisker och ränterisker i Linde Plc. Bolagets väsentliga valutarisker säkras.

Flerårsöversikt	2022	2021	2020	2019
Resultat efter finansiella poster	286	456	-7	290
Nettoupplåning	0	0	450	450
Soliditet (%)	100	100	86	86

För definition av nyckeltal, se Redovisnings- och värderingsprinciper.

Förändring av eget kapital

	Aktie-kapital	Balanserat resultat	Årets resultat	Totalt
Belopp vid årets ingång	500	2 190	459	**3 149**
Omfördelning fg års resultat		459	-459	**0**
Årets resultat			300	**300**
Belopp vid årets utgång	**500**	**2 649**	**300**	**3 449**

20230705142982

Förslag till vinstdisposition

Styrelsen föreslår att till förfogande stående vinstmedel (EUR):

Balanserad vinst	2 648 371 190
Årets vinst	300 394 728
	2 948 765 918
Disponeras så att	
Till aktieägarna utdelas	0
I ny räkning överföres	2 948 765 918
	2 948 765 918

Företagets resultat och ställning i övrigt framgår av efterföljande resultat- och balansräkning med noter.

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Resultaträkning

	Not	2022-01-01 -2022-12-31	2021-01-01 -2021-12-31
Rörelsens kostnader			
Övriga externa kostnader	2	0	0
Rörelseresultat		**0**	**0**
Resultat från finansiella poster			
Resultat från andelar i koncernföretag	3	286	459
Räntekostnader och andra liknande resultatposter, koncerninterna		0	-3
Summa resultat från finansiella poster		**286**	**456**
Resultat efter finansiella poster		**286**	**456**
Bokslutsdispositioner	4	18	0
Resultat före skatt		**304**	**456**
Skatt på årets resultat	5	-4	3
Årets resultat		**300**	**459**

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Balansräkning

	Not	2022-12-31	2021-12-31
TILLGÅNGAR			
Anläggningstillgångar			
Finansiella anläggningstillgångar			
Andelar i koncernföretag	6, 7	3 142	3 142
Uppskjuten skattefordran		3	3
		3 145	**3 145**
Summa anläggningstillgångar		**3 145**	**3 145**
Omsättningstillgångar			
Kortfristiga fordringar			
Fordringar hos koncernföretag	8	307	4
		307	**4**
Summa omsättningstillgångar		**307**	**4**
SUMMA TILLGÅNGAR		**3 452**	**3 149**

20230705042985

Balansräkning

	Not	2022-12-31	2021-12-31
EGET KAPITAL OCH SKULDER			
Eget kapital	9, 10		
Bundet eget kapital			
Aktiekapital		500	500
		500	**500**
Fritt eget kapital			
Balanserad vinst eller förlust		2 649	2 190
Årets resultat		300	459
		2 949	**2 649**
Summa eget kapital		**3 449**	**3 149**
Kortfristiga skulder			
Aktuella skatteskulder		3	0
Summa kortfristiga skulder		**3**	**0**
SUMMA EGET KAPITAL OCH SKULDER		**3 452**	**3 149**

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Noter

Not 1 - Redovisnings- och värderingsprinciper

Almänna upplysningar
Årsredovisningen har upprättats enligt årsredovisningslagen och BFNAR 2012:1 Årsredovisning och koncernredovisning (K3).

Redovisningsprinciperna är oförändrade jämfört med föregående år.

Finansiella instrument
Samtliga finansiella instrument värderas och redovisas utifrån verkligt värde i enlighet med reglerna i kapitel 12 i BFNAR 2012:1 (K3).

En finansiell tillgång eller finansiell skuld tas upp i balansräkningen när företaget blir part i instrumentets avtalsmässiga villkor. En finansiell tillgång tas bort från balansräkningen när den avtalsenliga rätten till kassaflödet från tillgången har upphört eller reglerats. Detsamma gäller när de risker och fördelar som är förknippade med innehavet i allt väsentligt överförts till annan part och företaget inte längre har kontroll över den finansiella tillgången. En finansiell skuld tas bort från balansräkningen när den avtalade förpliktelsen fullgjorts eller upphört.

Säkringsredovisning tillämpas endast då det finns en ekonomisk relation mellan säkringsinstrumentet och den säkrade posten som överensstämmer med företagets mål för riskhantering. Dessutom krävs att säkringsinstrumentet och den säkrade posten som överensstämmer med företagets mål för riskhantering och riskhanteringsstrategi avseende säkringen är dokumenterade senast när säkringen ingås.

Utdelning
Utdelning redovisas när behörigt organ har fattat beslut om att utdelning ska lämnas.

Koncerbidrag
Erhållna och lämnade koncernbidrag redovisas som bokslutsdispositioner.

Koncernförhållanden
LindeGas Holding Sweden AB är ett helägt dotterbolag till Linde Plc, Ten Earlsfort Terrace, Dublin 2, D02 T380, Irland (bolagets registreringsnummer, 98-1448883). Med hänvisning till undantagsreglerna i Årsredovisningslagen 7 kap 2 § upprättas ingen koncernredovisning i LindeGas Holding Sweden AB då Linde Plc upprättar koncernredovisning för Lindekoncernen.

Nyckeltalsdefinitioner
Soliditet (%)
Justerat eget kapital (eget kapital och obeskattade reserver med avdrag för uppskjuten skatt) i procent av balansomslutningen.

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Not 2 Arvode till revisorer

Med revisionsuppdrag avses granskning av årsredovisningen och bokföringen samt styrelsens och verkställande direektörens förvaltning, övriga arbetsuppgifter som det ankommer på bolagets revisor att utföra samt rådgivning eller annat biträde som föranleds av iakttagelser vid sådan granskning eller genomförandet av sådana övriga arbetsuppgifter.

Revisionsarvode avseende 2021 och 2022 har fakturerats Linde Sverige AB.

Not 3 Resultat från andelar i koncernföretag

	2022	**2021**
Erhållna utdelningar	286	459
	286	**459**

Not 4 Bokslutsdispositioner

	2022	**2021**
Mottagna koncernbidrag	18	0
	18	**0**

Not 5 Aktuell och uppskjuten skatt

	2022	**2021**
Aktuell skatt	-3	0
Förändring av uppskjuten skatt avseende temporära skillnader	-1	3
Total redovisad skatt	**-4**	**3**

Avstämning av effektiv skatt

		2022		**2021**
	Procent	**Belopp**	**Procent**	**Belopp**
Redovisat resultat före skatt		304		456
Skatt enligt gällande skattesats	20,6	-63	20,6	-94
Ej skattepliktiga intäkter	20,6	59	20,6	94
Ej avdragsgilla kostnader	20,6	0	20,6	-1
Under året utnyttjande av tidigare års ej avdragsgilla räntekostnader vars skattevärde ej redovisats som tillgång		1		0
Redovisad effektiv skatt	**1,0**	**-3**	**0,1**	**0**

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Not 6 Andelar i koncernföretag

	2022-12-31	2021-12-31
Ingående anskaffningsvärden	5 292	5 292
Utgående ackumulerade anskaffningsvärden	**5 292**	**5 292**
Ingående nedskrivningar	-2 150	-2 150
Utgående ackumulerade anskaffningsvärden	**-2 150**	**-2 150**
Utgående redovisat värde	**3 142**	**3 142**

Not 7 Specifikation andelar i koncernföretag

Namn	Kapital-	Rösträtts-	Antal	Bokfört
Linde Sverige AB (556009-1331)	100	100	1 000	3 142
				3 142

Not 8 Fordringar hos koncernföretag

	2022-12-31	2021-12-31
Kortfristiga lån till koncernbolag, Linde Finance B.V.	289	4
Mottagna koncernbidrag	18	0
	307	**4**

Not 9 Antal aktier och kvotvärde

Antal aktier uppgår till 41 667 666 st. Kvotvärdet per aktie är 12 EUR per aktie.

Not 10 Disposition av vinst eller förlust

	2022-12-31
Förslag till vinstdisposition	
Styrelsen föreslår att till förfogande stående vinstmedel:	
Balanserad vinst	2 648
Årets vinst	300
	2 949
Disponeras så att	
Till aktieägarna utdelas	0
I ny räkning överföres	2 949
	2 949

20230705042989

Not 11 Väsentliga händelser efter räkenskapsårets slut

Inga väsentliga händelser har noterats.

Stockholm 20 juni 2023

Klas Stylander
Ordförande

Tiina Olenius
Verkställande direktör

Johan Pettersson

Vår revisionsberättelse har lämnats 20 juni 2023

PricewaterhouseCoopers AB

Sebastian Ionescu
Auktoriserad revisor

20230705042990

Revisionsberättelse

Till bolagsstämman i LindeGas Holding Sweden AB, org.nr 556740-8991

Rapport om årsredovisningen

Uttalanden

Vi har utfört en revision av årsredovisningen för LindeGas Holding Sweden AB för år 2022.

Enligt vår uppfattning har årsredovisningen upprättats i enlighet med årsredovisningslagen och ger en i alla väsentliga avseenden rättvisande bild av LindeGas Holding Sweden ABs finansiella ställning per den 31 december 2022 och av dess finansiella resultat för året enligt årsredovisningslagen. Förvaltningsberättelsen är förenlig med årsredovisningens övriga delar.

Vi tillstyrker därför att bolagsstämman fastställer resultaträkningen och balansräkningen för LindeGas Holding Sweden AB.

Grund för uttalanden

Vi har utfört revisionen enligt International Standards on Auditing (ISA) och god revisionssed i Sverige. Vårt ansvar enligt dessa standarder beskrivs närmare i avsnittet Revisorns ansvar. Vi är oberoende i förhållande till LindeGas Holding Sweden AB enligt god revisorssed i Sverige och har i övrigt fullgjort vårt yrkesetiska ansvar enligt dessa krav.

Vi anser att de revisionsbevis vi har inhämtat är tillräckliga och ändamålsenliga som grund för våra uttalanden.

Styrelsens och verkställande direktörens ansvar

Det är styrelsen och verkställande direktören som har ansvaret för att årsredovisningen upprättas och att den ger en rättvisande bild enligt årsredovisningslagen. Styrelsen och verkställande direktören ansvarar även för den interna kontroll som de bedömer är nödvändig för att upprätta en årsredovisning som inte innehåller några väsentliga felaktigheter, vare sig dessa beror på oegentligheter eller misstag.

Vid upprättandet av årsredovisningen ansvarar styrelsen och verkställande direktören för bedömningen av bolagets förmåga att fortsätta verksamheten. De upplyser, när så är tillämpligt, om förhållanden som kan påverka förmågan att fortsätta verksamheten och att använda antagandet om fortsatt drift. Antagandet om fortsatt drift tillämpas dock inte om styrelsen och verkställande direktören avser att likvidera bolaget, upphöra med verksamheten eller inte har något realistiskt alternativ till att göra något av detta.

Revisorns ansvar

Våra mål är att uppnå en rimlig grad av säkerhet om huruvida årsredovisningen som helhet inte innehåller några väsentliga felaktigheter, vare sig dessa beror på oegentligheter eller misstag, och att lämna en revisionsberättelse som innehåller våra uttalanden. Rimlig säkerhet är en hög grad av säkerhet, men är ingen garanti för att en revision som utförs enligt ISA och god revisionssed i Sverige alltid kommer att upptäcka en väsentlig felaktighet om en sådan finns. Felaktigheter kan uppstå på grund av oegentligheter eller misstag och anses vara väsentliga om de enskilt eller tillsammans rimligen kan förväntas påverka de ekonomiska beslut som användare fattar med grund i årsredovisningen.

En ytterligare beskrivning av vårt ansvar för revisionen av årsredovisningen finns på Revisorsinspektionens webbplats: www.revisorsinspektionen.se/revisornsansvar. Denna beskrivning är en del av revisionsberättelsen.

Rapport om andra krav enligt lagar och andra författningar

Uttalanden

Utöver vår revision av årsredovisningen har vi även utfört en revision av styrelsens och verkställande direktörens förvaltning för LindeGas Holding Sweden AB för år 2022 samt av förslaget till dispositioner beträffande bolagets vinst eller förlust.

Vi tillstyrker att bolagsstämman disponerar vinsten enligt förslaget i förvaltningsberättelsen och beviljar styrelsens ledamöter och verkställande direktören ansvarsfrihet för räkenskapsåret.

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Grund för uttalanden

Vi har utfört revisionen enligt god revisionssed i Sverige. Vårt ansvar enligt denna beskrivs närmare i avsnittet Revisorns ansvar. Vi är oberoende i förhållande till LindeGas Holding Sweden AB enligt god revisorssed i Sverige och har i övrigt fullgjort vårt yrkesetiska ansvar enligt dessa krav.

Vi anser att de revisionsbevis vi har inhämtat är tillräckliga och ändamålsenliga som grund för våra uttalanden.

Styrelsens och verkställande direktörens ansvar

Det är styrelsen som har ansvaret för förslaget till dispositioner beträffande bolagets vinst eller förlust. Vid förslag till utdelning innefattar detta bland annat en bedömning av om utdelningen är försvarlig med hänsyn till de krav som bolagets verksamhetsart, omfattning och risker ställer på storleken av bolagets egna kapital, konsolideringsbehov, likviditet och ställning i övrigt.

Styrelsen ansvarar för bolagets organisation och förvaltningen av bolagets angelägenheter. Detta innefattar bland annat att fortlöpande bedöma bolagets ekonomiska situation, och att tillse att bolagets organisation är utformad så att bokföringen, medelsförvaltningen och bolagets ekonomiska angelägenheter i övrigt kontrolleras på ett betryggande sätt. Den verkställande direktören ska sköta den löpande förvaltningen enligt styrelsens riktlinjer och anvisningar och bland annat vidta de åtgärder som är nödvändiga för att bolagets bokföring ska fullgöras i överensstämmelse med lag och för att medelsförvaltningen ska skötas på ett betryggande sätt.

Revisorns ansvar

Vårt mål beträffande revisionen av förvaltningen, och därmed vårt uttalande om ansvarsfrihet, är att inhämta revisionsbevis för att med en rimlig grad av säkerhet kunna bedöma om någon styrelseledamot eller verkställande direktören i något väsentligt avseende:

- företagit någon åtgärd eller gjort sig skyldig till någon försummelse som kan föranleda ersättningsskyldighet mot bolaget, eller
- på något annat sätt handlat i strid med aktiebolagslagen, årsredovisningslagen eller bolagsordningen.

Vårt mål beträffande revisionen av förslaget till dispositioner av bolagets vinst eller förlust, och därmed vårt uttalande om detta, är att med rimlig grad av säkerhet bedöma om förslaget är förenligt med aktiebolagslagen.

Rimlig säkerhet är en hög grad av säkerhet, men ingen garanti för att en revision som utförs enligt god revisionssed i Sverige alltid kommer att upptäcka åtgärder eller försummelser som kan föranleda ersättningsskyldighet mot bolaget, eller att ett förslag till dispositioner av bolagets vinst eller förlust inte är förenligt med aktiebolagslagen.

En ytterligare beskrivning av vårt ansvar för revisionen av förvaltningen finns på Revisorsinspektionens webbplats: www.revisorsinspektionen.se/revisornsansvar. Denna beskrivning är en del av revisionsberättelsen.

Stockholm den 20 juni 2023

PricewaterhouseCoopers AB

Sebastian Ionescu
Auktoriserad revisor

Making our world more productive

Resilience & Growth

Annual Report 2022

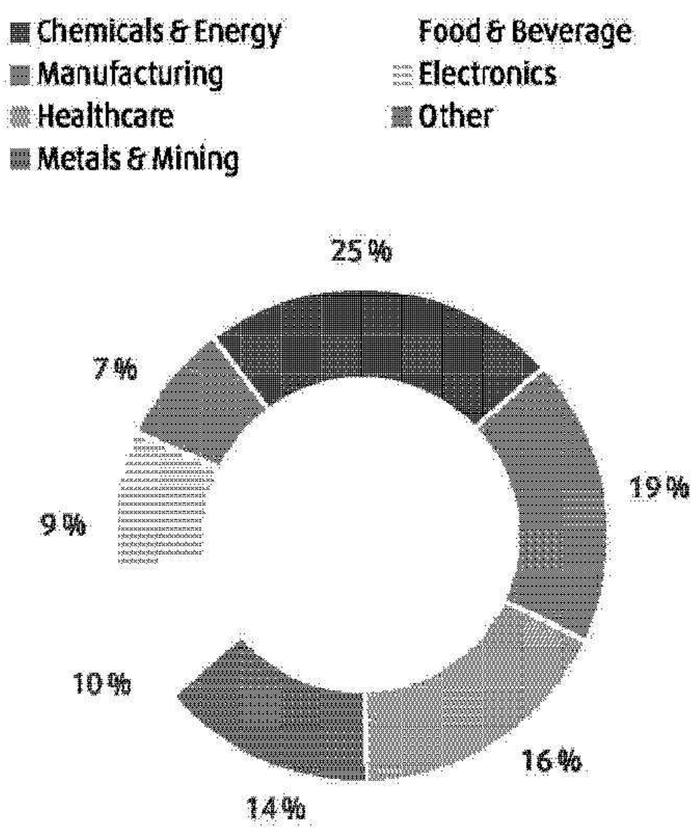


Financial Highlights

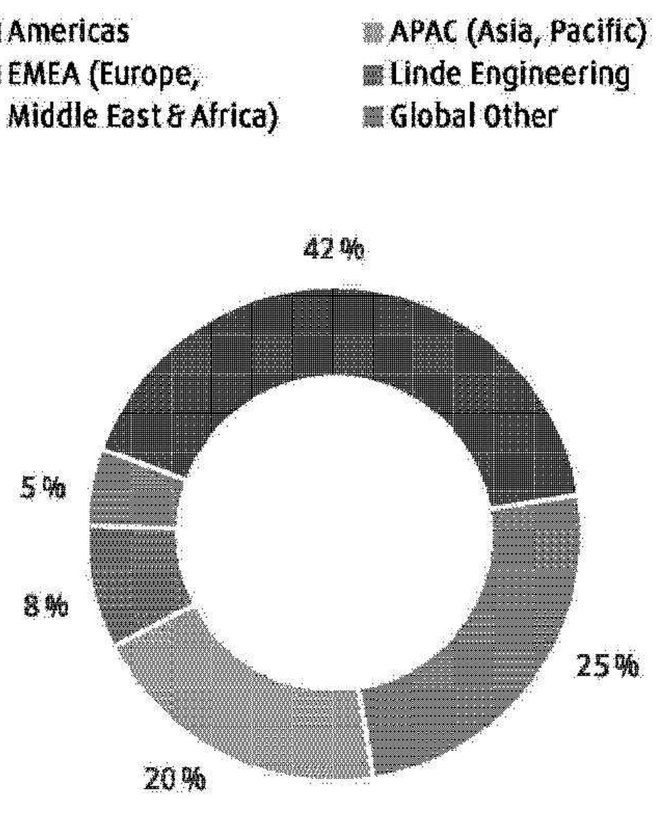
Year ended December 31	2022	2021
Dollar amounts in millions, except per share data	$	$
Reported		
Sales	33,364	30,793
Operating Profit	5,369	4,984
Income from Continuing Operations	4,147	3,821
Diluted Earnings Per Share from Continuing Operations	8.23	7.32
Adjusted[1]		
Sales	33,364	30,793
Operating Profit	7,904	7,176
Income from Continuing Operations	6,195	5,579
Diluted Earnings Per Share from Continuing Operations	12.29	10.69
After-Tax Return on Capital[2]	22.9%	17.7%
Other Information		
Cash Flow from Operations	8,864	9,725
Capital Expenditures	3,173	3,086

2022 Sales

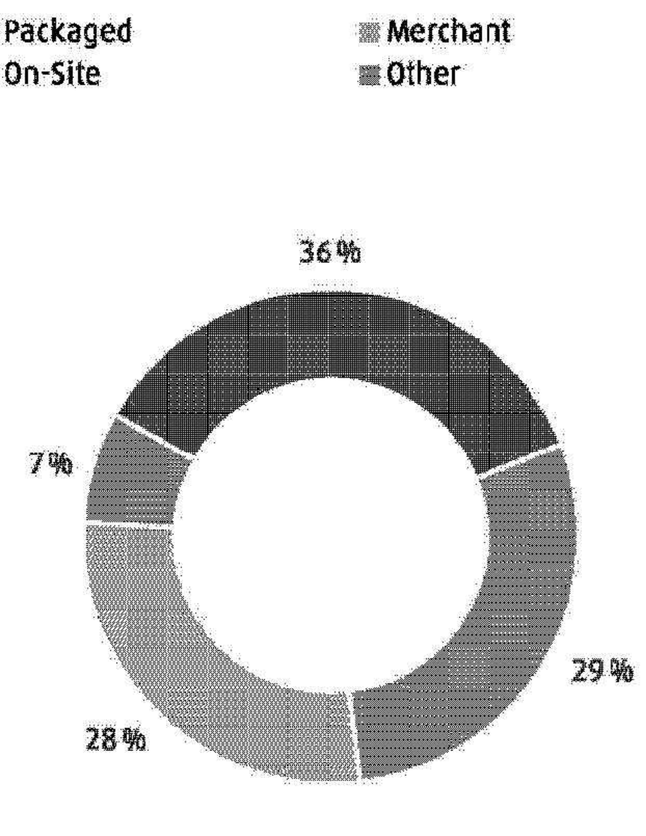
End Markets[3]



Business Segments



Distribution Mode[3]



[1] Adjusted amounts are non-GAAP measures and are reconciled to reported amounts in the "Non-GAAP Financial Measures" Section in Item 7.
[2] Adjusted after-tax return on capital is a non-GAAP measure. For definition and reconciliation, please see Appendix to the Investor Teleconference Presentation Fourth Quarter 2022.
[3] Total sales excluding Linde Engineering.

Dear Linde Shareholders,



2022 was a year of unprecedented challenges, including the war in Ukraine, a global energy crisis, record cost inflation and an economic slowdown. Despite all these headwinds, I'm proud of what our company and employees have achieved, demonstrating why Linde is the best performing global industrial gases and engineering company in the world.

In Russia, we ceased project activities and commenced the process to divest our local businesses. For Ukraine, Linde employees across the world stepped up, supporting humanitarian relief work and in many cases opening their homes to host Ukrainian colleagues and families. All this, while doing what we do best: focusing on safety, continuous improvement, profitable growth, active pricing and cost management, and strong capital discipline.

"Return on capital (ROC), the truth serum of our industry, grew 520 basis points to a record 22.9%."

On the financial front, earnings per share grew 20%, excluding the effects of currency. Return on capital (ROC), the truth serum of our industry, grew 520 basis points to a record 22.9%. We delivered a record 23.7% operating margin, up 40 basis points compared to the previous year – or 160 basis points when you exclude the impact of cost pass-through. This is the fourth consecutive year where Linde delivered the highest operating margin and ROC in the industry, and I see no reason why this should change. We continued to generate strong cash flow which has allowed us to return $7.5 billion to our shareholders through dividends and share buybacks while maintaining a very strong balance sheet.

"We also made significant strides in sustainability, reducing absolute Scope 1 and Scope 2 emissions by more than 1 million tons of CO_2e compared to 2021, despite growing volumes."

During 2022, we also made significant strides in sustainability, reducing absolute Scope 1 and Scope 2 emissions by more than 1 million tons of CO_2e compared to 2021, despite growing volumes. This positions us well to achieve our goal of 35% greenhouse gas emissions reduction by 2035, which was recently validated by the Science Based Targets initiative. Our safety performance continues to be best-in-class, as defined by a double-digit improvement versus 2021 in lost workday cases and commercial vehicle incidents. That said, one accident is one too many, and we will not rest until we're able to reach zero accidents globally. As a local business, we continue to remain actively engaged in the communities in which we operate. In 2022, Linde teams completed close to 500 community projects, positively impacting more than 300,000 people across the world. Sustainability is a fundamental part of what we do every day, and we are proud of our unparalleled track record of inclusion in the DJSI World for 20 consecutive years. Linde was also awarded a double 'A' by CDP for its approach to tackling both water security and climate change.

Letter to Shareholders

The basis of our success is our people – 65,000 employees who serve our customers and communities, win new projects, execute our strategy, drive innovation and deliver results. Having a dedicated team of people who demonstrate business owner mentality, grit and passion is what ensures our success, now and in the future. Maintaining a diverse and inclusive workplace where employees can achieve their full potential is therefore a priority for me. At the end of 2022, our workforce comprised 28% women, and I fully expect us to exceed our target of 30% gender balance before 2030.

Looking forward, we will continue to execute our strategy and deliver growth in 2023 and beyond. Firstly, by **optimizing our base business** – through ongoing productivity initiatives, active price management and continuously working to increase network density. A good example of that is the recently completed acquisition of nexAir, one of the largest independent packaged gases businesses in the United States.

Secondly, by **capitalizing on growth**. This means delivering our $9.2 billion backlog of contracted projects for blue-chip companies, which have secured returns. It also means developing and commercializing innovative technologies and gas applications, and continuing to pursue growth opportunities in secular end markets.

"Our existing hydrogen business, technological advantage and asset footprint put us in the front seat to win high-quality clean energy projects around the world."

Finally, we are **prioritizing clean energy**. The industry is undergoing a transformative change at a scale we have not previously seen. Large decarbonization projects have started to gather pace, supported by incentives such as the U.S. Inflation Reduction Act. Our existing hydrogen business, technological advantage and asset footprint put us in the front seat to win high-quality clean energy projects around the world. Our strategy is to support decarbonization by working with off-takers to supply low-carbon-intensity industrial gases, safely, reliably and at scale – like our $1.8 billion investment to support OCI's world-scale blue ammonia facility in the U.S. Gulf Coast. In addition to supporting our customers' emissions reduction goals through our traditional on-site model, we are also actively investing in our own projects for clean energy. For example, we are building a 35 MW electrolyzer at Niagara Falls that will effectively double Linde's green hydrogen production in the U.S. While estimates on the scale of the opportunity vary, there is no doubt that clean energy will be a significant growth driver for our business in the years ahead.

"We will continue to execute our strategy and deliver growth in 2023 and beyond."

Our results in 2022 are a culmination of a well-ingrained performance culture built upon a strong foundation of values. We are laser-focused on ensuring that we are a safe and reliable partner for our customers, meeting our own high standards for performance and finding new ways to improve our business, whether supplying ultra-high-purity gases to semiconductor fabs in Asia, offering gas application technologies for aquaculture in Europe or producing clean hydrogen for ammonia production in the Americas.

While we expect to see continued geopolitical, social and economic uncertainty in 2023, I am confident that Linde will continue to deliver in the years to come.

Sincerely,



Sanjiv Lamba
Chief Executive Officer

2022 Highlights

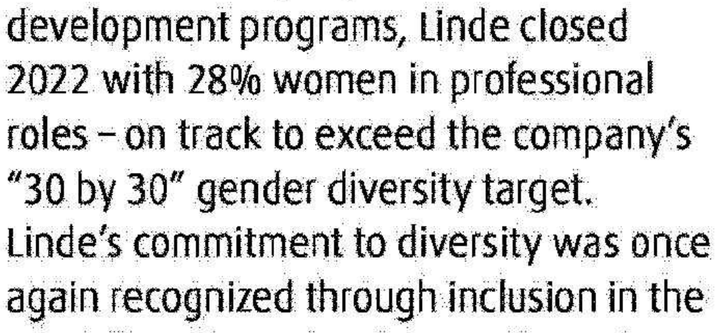
Clean Energy

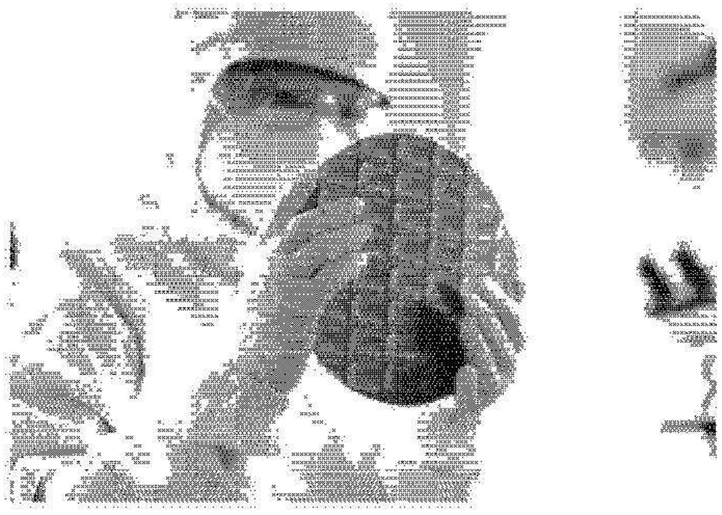
2022 saw significant momentum around clean energy projects boosted by the Inflation Reduction Act in the U.S. Linde's technology advantage, asset footprint and operational expertise position it well for such developments. Linde announced its $1.8 billion investment for supply of nitrogen and clean hydrogen to OCI's world-scale blue ammonia facility in Texas. This is the first of many such projects that are under development. These opportunities follow Linde's industrial gas model, working with high-quality customers and partners who are leaders in their fields.

Linde is also increasing its own clean hydrogen production capacities in the U.S. and Europe to help meet the growing demand for clean hydrogen across several end markets, like mobility. After providing the world's first hydrogen refueling station for passenger trains in Germany, we are proud to have begun the supply of liquid hydrogen to the world's first operational hydrogen-powered ferry for cars and passengers in Norway.

Electronics

Across the world, Linde is at the heart of the semiconductor industry. A few years ago, we stated how we would leverage the secular driver of electronics capacity expansion and win more than our fair share of high-quality projects. Our current project backlog of tier one electronics customers validates that strategy as we continue to lead the industry. Linde secured electronics projects in Asia and the U.S. during 2022, which are now under execution. Linde will soon commence supplies to TSMC's rapidly expanding multi-billion-dollar wafer fabrication plant in Arizona.





Small On-site Projects

Linde signed 52 new small on-site projects, which use our proprietary technology to supply nitrogen and oxygen. The 21% increase in projects versus 2021 was largely driven by growing demand for next-generation energy storage, such as lithium-ion batteries. Linde also saw continued strong demand from traditional end markets including electronics, manufacturing, metals and mining. These long-term agreements meet Linde's strict investment criteria, will deliver steady revenue and contribute to Linde's underlying growth.

Diversity & Inclusion

Creating a diverse and inclusive environment where employees can achieve their full potential is a priority for Linde. Having implemented several development programs, Linde closed 2022 with 28% women in professional roles – on track to exceed the company's "30 by 30" gender diversity target. Linde's commitment to diversity was once again recognized through inclusion in the 2022 Bloomberg Gender-Equality Index and being named a 2022 DiversityInc Noteworthy Company for the seventh consecutive year. In 2022, the company's first all-women-operated packaged gases filling plant started up in Tamil Nadu, India.

Sustainable Development

Every day, Linde team members around the world are helping to make a positive social and environmental impact in our communities, for our customers and within our own operations.



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 tons of equivalent carbon dioxide

Provided philanthropic support to more than **1,000 organizations** globally

Benefited 300,000 people through employee **community engagement** projects

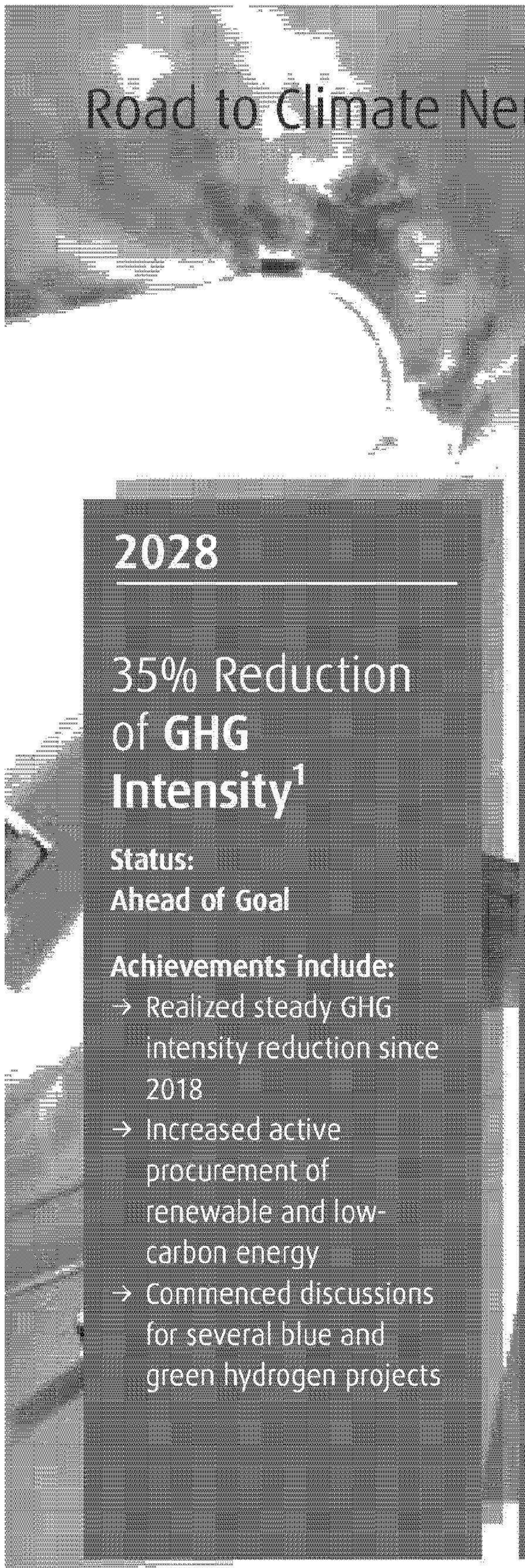
Sourced more than **1/3 of electricity from low-carbon and renewable sources**

Best-in-class safety performance

Recognitions & Awards

- → Dow Jones Sustainability World Index (DJSI World) and DJSI North America: included in DJSI World for twenty consecutive years
- → S&P Global Corporate Sustainability Assessment: industry-leading score in the 99th percentile in chemicals, #1 in industrial gases
- → S&P Sustainability Yearbook 2022
- → CDP: Linde named to 'A list' for both climate change and water security
- → Science-based target approval: Linde's 2035 climate change goal validated by SBTi
- → Holder of the Sustainable Markets Initiative Terra Carta Seal
- → FTSE4Good Index constituent for seventh consecutive year
- → One of World's Most Ethical Companies by Ethisphere Institute
- → Bloomberg 2022 Gender-Equality Index

Road to Climate Neutrality*



2028

35% Reduction of **GHG Intensity**[1]

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 CCS[2] projects
→ Investigating renewable feedstocks
→ Achieved reduction toward goal in first year

2035 goal approved by:

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

2050

Climate Neutral[3]

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

Leadership

Executive Leadership

Sanjiv Lamba
Chief Executive Officer &
Member of the Board of Directors

Matt White
Executive Vice President &
Chief Financial Officer

Sean Durbin
Executive Vice President
EMEA

Juergen Nowicki
Executive Vice President
Linde Engineering

John Panikar
Executive Vice President
APAC

Guillermo Bichara
Executive Vice President &
Chief Legal Officer

David Strauss
Executive Vice President &
Chief Human Resources Officer

Ben Glazer
Senior Vice President Americas

Crispin Teufel
Senior Vice President Lincare

Dan Yankowski
Senior Vice President Americas

Business Leadership

Joe Abdoo
President Canada

Moloy Banerjee
President ASEAN & South Asia

Gilney Bastos
President South Latin America

Armando Botello
President Region Europe North

Josue Lee
President North Latin America

Zhengmin Li
President Greater China

Odessa Mann
General Manager Helium &
Rare Gas

Jim Mercer
President Region UK & Ireland

Binod Patwari
President South Pacific

Oliver Pfann
President Region Europe East

Todd Skare
President Praxair Surface
Technologies

Veerle Slenders
President Region Europe West

Susan Stevenson
President NuCO2

BS Sung
General Manager South Korea

Dominic Cianchetti
Senior Vice President
Engineering Americas

Robert Eichelmann
Senior Vice President
Engineering APAC

John van der Velden
Senior Vice President
Engineering Sales & Technology

Functional Leadership

Desiree Bacher
Vice President Financial Planning &
Performance Management

Neil Beup
Vice President Global Public
Affairs

Anne Boyd
Vice President Tax & Treasury

Tamara Brown
Vice President Sustainability

Karin Griggel
Chief Compliance Officer

Amitabh Gupta
Vice President Technology

Kelcey Hoyt
Vice President &
Chief Accounting Officer

Michelle Loo
Chief Diversity Officer

Luiz Oliveira
Vice President Operations
Excellence & Productivity

Nicolas Pattera
Vice President Executive Staff

Juan Pelaez
Vice President Investor Relations

Bjoern Schneider
Vice President Internal Audit

Sandeep Sen
Chief Information Officer

Vipin Sher
Vice President Mergers &
Acquisitions & Capex

Tony Wallace
Vice President SHEQ

Board of Directors



Steve Angel

Chairman,
Executive Committee
(Chairman)



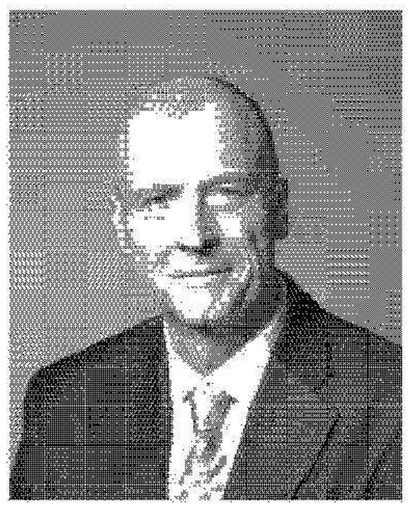
Sanjiv Lamba

Chief Executive Officer,
Executive Committee



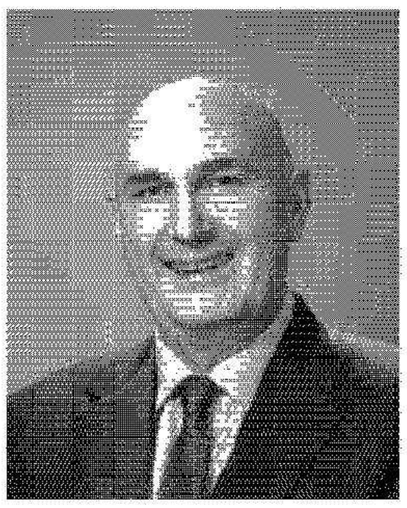
Ann-Kristin Achleitner

Human Capital Committee
(Chair), Sustainability
Committee



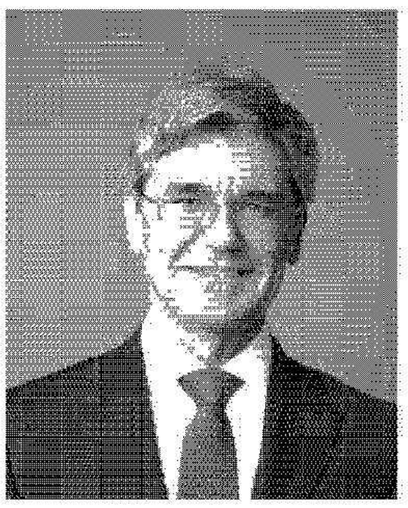
Thomas Enders

Sustainability Committee
(Chair), Executive
Committee, Audit
Committee



Hugh Grant

Nomination and
Governance Committee,
Human Capital Committee



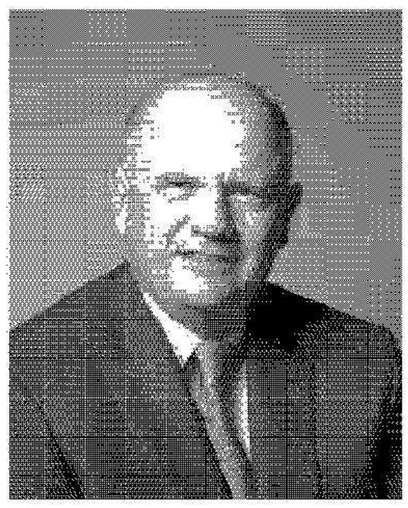
Joe Kaeser

Nomination and
Governance Committee
(Chair), Human Capital
Committee



Victoria Ossadnik

Audit Committee,
Nomination and
Governance Committee



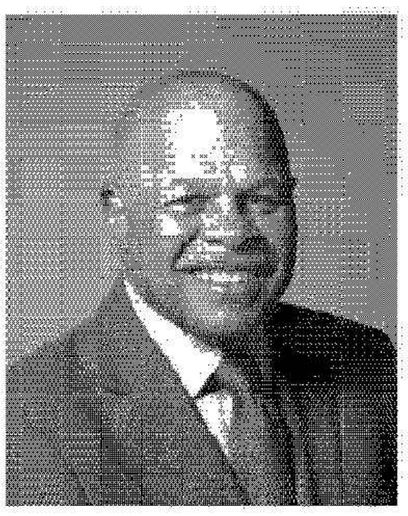
Martin Richenhagen

Audit Committee (Chair),
Human Capital Committee



Alberto Weisser

Audit Committee,
Sustainability Committee



Robert Wood

Lead Independent Director,
Human Capital Committee,
Sustainability Committee,
Executive Committee

For more information about Linde's corporate governance, please visit our website at **www.linde.com/about-linde/corporate-governance**

Mission, Vision and Values

Our Mission

We live our mission of *making our world more productive* every day. Through our high-quality solutions, technologies and services we are making our customers more successful and **helping to sustain and protect our planet.**

Our Vision

We are committed to fulfilling 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 Values

- Integrity
- Safety
- Community
- Inclusion
- Accountability

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2022

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number 001-38730

LINDE PLC

(Exact name of registrant as specified in its charter)

Ireland	**98-1448883**
(State or other jurisdiction of incorporation)	**(I.R.S. Employer Identification No.)**
10 Riverview Drive, Danbury, Connecticut United States 06810	**Forge 43 Church Street West Woking, Surrey GU21 6HT United Kingdom (Address of principal executive offices) (Zip Code)**
(203) 837 - 2000	**+ 44 14 83 242200 (Registrant's telephone number, including area code)**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class:	**Trading Symbol(s)**	**Name of each exchange on which registered:**
Ordinary shares (€0.001 nominal value per share)	**LIN**	**New York Stock Exchange**

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☑ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☑ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," " smaller reporting company, " and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☑ Accelerated filer ☐ Non- accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. Yes ☑ No ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☑

The aggregate market value of the voting and non-voting common stock held by non-affiliates as of June 30, 2022, was approximately $143 billion (based on the closing sale price of the stock on that date as reported on the New York Stock Exchange).

At January 31, 2023, 492,160,806 ordinary shares of €0.001 nominal value per share of the Registrant were outstanding.

Documents incorporated by reference:

Portions of the Proxy Statement of Linde plc for its 2023 Annual General Meeting of Shareholders, are incorporated in Part III of this report.

LINDE PLC

ANNUAL REPORT ON FORM 10-K
For the fiscal year ended December 31, 2022

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FORWARD-LOOKING STATEMENTS

This document contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are identified by terms and phrases such as: anticipate, believe, intend, estimate, expect, continue, should, could, may, plan, project, predict, will, potential, forecast, and similar expressions. They are based on management's reasonable expectations and assumptions as of the date the statements are made but involve risks and uncertainties. These risks and uncertainties include, without limitation: the performance of stock markets generally; developments in worldwide and national economies and other international events and circumstances, including trade conflicts and tariffs; changes in foreign currencies and in interest rates; the cost and availability of electric power, natural gas and other raw materials; the ability to achieve price increases to offset cost increases; catastrophic events including natural disasters, epidemics, pandemics such as COVID-19, and acts of war and terrorism; the ability to attract, hire, and retain qualified personnel; the impact of changes in financial accounting standards; the impact of changes in pension plan liabilities; the impact of tax, environmental, healthcare and other legislation and government regulation in jurisdictions in which the company operates; the cost and outcomes of investigations, litigation and regulatory proceedings; the impact of potential unusual or non-recurring items; continued timely development and market acceptance of new products and applications; the impact of competitive products and pricing; future financial and operating performance of major customers and industries served; the impact of information technology system failures, network disruptions and breaches in data security; and the effectiveness and speed of integrating new acquisitions into the business. These risks and uncertainties may cause actual future results or circumstances to differ materially from accounting principles generally accepted in the United States of America, International Financial Reporting Standards or adjusted projections, estimates or other forward-looking statements.

Linde plc assumes no obligation to update or provide revisions to any forward-looking statement in response to changing circumstances. The above listed risks and uncertainties are further described in Item 1A (Risk Factors) in this report, which should be reviewed carefully. Please consider Linde plc's forward-looking statements in light of those risks.

PART I

ITEM 1. BUSINESS

General

Linde plc is a public limited company formed under the laws of Ireland with its principal offices in the United Kingdom and United States. Linde is the largest industrial gas company worldwide and is a major technological innovator in the industrial gases industry. Its primary products in its industrial gases business are atmospheric gases (oxygen, nitrogen, argon, and rare gases) and process gases (carbon dioxide, helium, hydrogen, electronic gases, specialty gases, and acetylene etc). The company also designs and builds equipment that produces industrial gases and offers customers a wide range of gas production and processing services such as olefin plants, natural gas plants, air separation plants, hydrogen and synthesis gas plants and other types of plants.

Linde serves a diverse group of industries including healthcare, chemicals and energy, manufacturing, metals and mining, food and beverage, and electronics.

Linde's sales were $33,364 million, $30,793 million, and $27,243 million for 2022, 2021, and 2020, respectively. Refer to Item 7, Management's Discussion and Analysis, for a discussion of consolidated sales and Note 18 to the consolidated financial statements for additional information related to Linde's reportable segments.

Industrial Gases Products and Manufacturing Processes

Atmospheric gases are the highest volume products produced by Linde. Using air as its raw material, Linde produces oxygen, nitrogen and argon through several air separation processes of which cryogenic air separation is the most prevalent. Rare gases, such as krypton, neon and xenon, are also produced through cryogenic air separation. As a pioneer in the industrial gases industry, Linde is a leader in developing a wide range of proprietary and patented applications and supply systems technology. Linde also led the development and commercialization of non-cryogenic air separation technologies for the production of industrial gases. These technologies open important new markets and optimize production capacity for the company by lowering the cost of supplying industrial gases. These technologies include proprietary vacuum pressure swing adsorption ("VPSA") and membrane separation to produce gaseous oxygen and nitrogen, respectively.

Process gases, including carbon dioxide, hydrogen, helium, specialty gases and acetylene are produced by methods other than air separation.

Hydrogen is produced from a range of feedstocks using an array of different technologies. Despite hydrogen being an invisible molecule, colors are often used to designate and differentiate between the production processes used to produce the molecule. The majority of hydrogen currently produced by Linde is what is termed gray hydrogen and is derived from natural gas or methane, using steam methane reformation technology. Linde has multiple technologies to produce blue and green hydrogen, which are both considered types of clean energy. Blue hydrogen is produced by capturing the carbon emissions from the hydrogen plant and either utilizing them in a way that stops them from being emitted or sequestering them in the subsurface for the long term. Green hydrogen is produced by electrolysis using renewable energy or from the steam methane reforming of biomethane. Low carbon intensity, high-purity hydrogen is also produced by purifying and recovering by-product hydrogen sources from the chemical and petrochemical industries.

Helium is sourced from certain helium-rich natural gas streams in the United States, with additional supplies being acquired from outside the United States. Carbon monoxide can be produced by either steam methane reforming or auto-thermal reforming of natural gas or other feed streams such as naphtha. Acetylene is primarily sourced as a chemical by-product, but may also be produced from calcium carbide and water. Most carbon dioxide is purchased from by-product sources, including chemical plants, refineries and industrial processes or is recovered from carbon dioxide wells. Carbon dioxide is processed in Linde's plants to produce commercial and food-grade carbon dioxide.

Industrial Gases Distribution

There are three basic distribution methods for industrial gases: (i) on-site or tonnage; (ii) merchant or bulk liquid; and (iii) packaged or cylinder gases. These distribution methods are often integrated, with products from all three supply modes coming from the same plant. The method of supply is generally determined by the lowest cost means of meeting the customer's needs, depending upon factors such as volume requirements, purity, pattern of usage, and the form in which the product is used (as a gas or as a cryogenic liquid).

On-site. Customers that require the largest volumes of product (typically oxygen, nitrogen and hydrogen) and that have a relatively constant demand pattern are supplied by cryogenic and process gas on-site plants. Linde constructs plants on or

adjacent to these customers' sites and supplies the product directly to customers by pipeline. On-site product supply contracts generally are total requirement contracts with terms typically ranging from 10-20 years and containing minimum purchase requirements and price escalation provisions. Many of the cryogenic on-site plants also produce liquid products for the merchant market. Therefore, plants are typically not dedicated to a single customer. Advanced air separation processes allow on-site delivery to customers with smaller volume requirements.

Merchant. The merchant business is generally associated with distributable liquid oxygen, nitrogen, argon, carbon dioxide, hydrogen and helium. The deliveries generally are made from Linde's plants by tanker trucks to storage containers at the customer's site which are usually owned and maintained by Linde and leased to the customer. Due to distribution cost, merchant oxygen and nitrogen generally have a relatively small distribution radius from the plants at which they are produced. Merchant argon, hydrogen and helium can be shipped much longer distances. The customer agreements used in the merchant business are usually three to seven-year requirement contracts.

Packaged Gases. Customers requiring small volumes are supplied products in metal containers called cylinders, under medium to high pressure. Packaged gases include atmospheric gases, carbon dioxide, hydrogen, helium, acetylene and related products. Linde also produces and distributes in cylinders a wide range of specialty gases and mixtures. Cylinders may be delivered to the customer's site or picked up by the customer at a packaging facility or retail store. Packaged gases are generally sold under one to three-year supply contracts and through purchase orders.

Engineering

Linde's Engineering business has a global presence, with its focus on market segments such as air separation, hydrogen, synthesis, olefin and natural gas plants. The company utilizes its extensive process engineering know-how in the planning, design and construction of highly efficient turnkey plants for the production and processing of gases. With its state-of-the-art sustainable technologies Engineering also helps customers avoid, capture and utilize CO2 emissions. Its technology portfolio covers the entire value chain for production, liquefaction, storage, distribution and application of hydrogen which supports the transition to clean energy. Its digital services and solutions increase plant efficiency and performance.

Linde's plants are used in a wide variety of fields: in the petrochemical and chemical industries, in refineries and fertilizer plants, to recover air gases, to produce synthesis gases, to treat natural gas and to produce noble gases. The Engineering business either supplies plant components directly to the customer or to the industrial gas business of Linde which operates the plants under a long-term gases supply contract.

Inventories – Linde carries inventories of merchant and cylinder gases and hardgoods to supply products to its customers on a reasonable delivery schedule. On-site plants and pipeline complexes have limited inventory. Inventory obsolescence is not material to Linde's business.

Customers – Linde is not dependent upon a single customer or a few customers.

International – Linde is a global enterprise with approximately 68% of its 2022 sales outside of the United States. The company also has majority or wholly owned subsidiaries that operate in approximately 45 European, Middle Eastern and African countries (including Germany, the United Kingdom (U.K.), France, Sweden, and the Republic of South Africa); approximately 20 Asian and South Pacific countries (including China, Australia, India, South Korea and Thailand); and approximately 20 countries in North and South America (including Canada, Mexico and Brazil).

The company also has equity method investments operating in Europe, Asia, Africa, the Middle East, and North America.

Linde's non-U.S. business is subject to risks customarily encountered in non-U.S. operations, including fluctuations in foreign currency exchange rates, import and export controls, and other economic, political and regulatory policies of local governments. Also, see Item 1A. "Risk Factors" and Item 7A. "Quantitative and Qualitative Disclosures About Market Risk."

Seasonality – Linde's business is generally not subject to seasonal fluctuations to any significant extent.

Research and Development – Linde's research and development is directed toward development of gas processing, separation and liquefaction technologies, and clean energy technologies; improving distribution of industrial gases and the development of new markets and applications for these gases. This results in the development of new advanced air separation, hydrogen, synthesis gas, natural gas, adsorption and chemical process technologies; novel clean energy and carbon management solutions; as well as the frequent introduction of new industrial gas applications. Research and development is primarily conducted at Munich, Germany, Tonawanda, New York, Burr Ridge, Illinois and Shanghai, China.

Patents and Trademarks – Linde owns or licenses a large number of patents that relate to a wide variety of products and processes. Linde's patents expire at various times over the next 20 years. While these patents and licenses are considered

important to its individual businesses, Linde does not consider its business as a whole to be materially dependent upon any one particular patent, or patent license, or family of patents. Linde also owns a large number of trademarks, of which the "Linde" trademark is the most significant.

Raw Materials and Energy Costs – Energy is the single largest cost item in the production and distribution of industrial gases. Most of Linde's energy requirements are in the form of electricity, natural gas and diesel fuel for distribution. The company mitigates electricity, natural gas, and hydrocarbon price fluctuations contractually through pricing formulas, surcharges, and cost pass–through and tolling arrangements.

The supply of energy has not been a significant issue in the geographic areas where the company conducts business. However, energy availability and price is unpredictable and may pose unforeseen future risks.

For carbon dioxide, carbon monoxide, helium, hydrogen and specialty gases, raw materials are largely purchased from outside sources. Linde has contracts or commitments for, or readily available sources of, most of these raw materials; however, their long-term availability and prices are subject to market conditions.

Competition – Linde participates in highly competitive markets in industrial gases and engineering, which are characterized by a mixture of local, regional and global players, all of which exert competitive pressure on the parties. In locations where Linde has pipeline networks, which enable the company to provide reliable and economic supply of products to larger customers, Linde derives a competitive advantage.

Competitors in the industrial gases industry include global and regional companies such as L'Air Liquide S.A., Air Products and Chemicals, Inc., Messer Group GmbH, Mitsubishi Chemical Holdings Corporation (through Taiyo Nippon Sanso Corporation) as well as an extensive number of small to medium size independent industrial gas companies which compete locally as producers or distributors. In addition, a significant portion of the international gases market relates to customer-owned plants.

Employees – The company sources talent from an ever-changing and competitive environment. The ability to source and retain qualified and committed employees is a prerequisite for the company's success, and represents a general risk for Linde.

The Board of Directors ("Board") has established a strategic business objective to maintain world-class standards in talent management. Executive variable compensation is assessed annually based on performance in financial measures as well as in several strategic non-financial areas, including talent management. The Human Capital Committee assists the Board in its oversight of Linde's compensation policies and programs, particularly in regard to reviewing executive compensation for Linde's executive officers. The Human Capital Committee also periodically reviews the company's management development and succession programs, diversity policies and objectives, and the associated programs to achieve those objectives. The global head of Human Resources reports to the Chief Executive Officer ("CEO"). A global leader of Diversity and Inclusion reports to the head of Human Resources.

Linde has aligned diversity and inclusion with its business strategies and implemented diversity action planning into business process and performance management. Diversity and inclusion are line management responsibilities and Linde seeks competitive advantage through proactive management of its talent pipeline and recruiting processes. Linde provides equal employment opportunity, and recruits, hires, promotes and compensates people based solely on their performance and ability.

Employees receive a competitive salary and variable compensation components based on performance and job level. Linde has collective bargaining agreements with unions at numerous locations throughout the world. Additional benefits are offered such as occupational pensions and contributions towards health insurance or medical screening, reflecting regional conditions and local competition. Senior managers participate directly in the company's growth in value through the Long Term Incentive Plan of Linde plc. From time to time, Linde may introduce special compensation schemes to recognize or reward specific individuals such as the one implemented in 2020 for global front-line employees. Linde also invests in professional development of its employees through formal and on-the-job training.

As of December 31, 2022, Linde had 65,010 employees worldwide comprised of approximately 28 percent women and 72 percent men.

Environment – Information required by this item is incorporated herein by reference to the section captioned "Management's Discussion and Analysis – Environmental Matters" in Item 7 of this 10-K.

Available Information – The company makes its periodic and current reports available, free of charge, on or through its website, www.linde.com, as soon as practicable after such material is electronically filed with, or furnished to, the Securities and Exchange Commission ("SEC"). Investors may also access from the company website other investor information such as press releases and presentations. Information on the company's website is not incorporated by reference herein. In addition,

the public may read and copy any materials filed with the SEC free of charge at the SEC's website, www.sec.gov, that contains reports, proxy information statements and other information regarding issuers that file electronically.

Executive Officers – The following Executive Officers have been elected by the Board of Directors and serve at the pleasure of the Board. It is expected that the Board will elect officers annually following each annual meeting of shareholders.

Sanjiv Lamba, 58, was appointed Chief Executive Officer of Linde effective March 1, 2022. Prior to being appointed CEO, he was Chief Operating Officer starting in January 2021 and after serving as Executive Vice President, APAC, beginning in October 2018. Previously, Mr. Lamba was appointed a Member of the Executive Board of Linde AG in 2011, responsible for the Asia, Pacific segment of the Gases Division, for Global Gases Businesses Helium & Rare Gases, Electronics as well as Asia Joint Venture Management. Mr. Lamba started his career 1989 with BOC India in Finance where he progressed to become Director of Finance before being appointed as Managing Director for BOC's India's business in 2001. Throughout his years with BOC/Linde, he worked in various roles across a number of different geographies including Germany, the U.K., Singapore and India.

Guillermo Bichara, 48, is Executive Vice President and Chief Legal Officer. He previously served as Praxair's Vice President and General Counsel. Mr. Bichara joined the company in 2006, first as Director of Legal Affairs at Praxair Mexico before being promoted to Vice President and General Counsel of Praxair Asia. He subsequently had responsibility for Europe, Mexico and corporate transactions before being promoted to Associate General Counsel and Assistant Secretary. Mr. Bichara previously held roles at Cemex and various global law firms.

Sean Durbin, 52, became Executive Vice President, EMEA in April 2021. Previously, he served as Senior Vice President, Global Functions beginning in July 2020. Durbin joined Praxair, Inc. in 1993 and served in various roles across operations, engineering, project management, business development and sales. In recent years, he has held leadership positions including Business President, Region Europe South from 2019 to 2020, and President, Praxair Canada Inc. from 2013 to 2019.

Kelcey E. Hoyt, 53, became the Chief Accounting Officer of Linde in October 2018. Prior to this, she served as Vice President and Controller of Praxair, Inc. beginning in August 2016. Prior to becoming Controller, she served as Praxair's Director of Investor Relations since 2010. She joined Praxair in 2002 and served as Director of Corporate Accounting and SEC Reporting through 2008, and later served as Controller for various divisions within Praxair's North American Industrial Gas business. Previously, she was in audit at KPMG, LLP.

Juergen Nowicki, 59, was appointed Executive Vice President and CEO, Linde Engineering in April 2020. Prior to this, he was Senior Vice President, Commercial, Linde Engineering. Mr. Nowicki joined Linde in 1991 as an Internal Auditor and held various positions in Finance and Controlling. In 2002, he was appointed CFO Linde Gas North America, USA, and was named Head of Finance and Control for The Linde Group in 2006. Nowicki assumed the role of Managing Director, Linde Engineering in 2011.

John Panikar, 55, was appointed Executive Vice President, APAC of Linde effective in January 2021. Previously, he served as President UK & Africa of Linde since October 2018. From 2014 to 2018, Mr. Panikar was President of Praxair Asia. He began his career with Praxair in 1991 as an Applications Engineer. Over the years, Mr. Panikar held increasingly responsible positions including Manager of Site Services and Equipment, Business Development Director for Praxair Asia, Managing Director of Praxair India, VP, South Region, North American Industrial Gases and President, Praxair Distribution, Inc.

David P. Strauss, 64, is Executive Vice President and Chief Human Resources Officer. He previously served as Praxair's Chief Human Resources Officer. Mr. Strauss joined Linde in 1990 as an Applications Engineer before being promoted to lead the electronics materials business. He subsequently served as Vice President of Safety, Health and Environment.

Matthew J. White, 50, became Executive Vice President and Chief Financial Officer of Linde in October 2018. He previously served as the Senior Vice President and Chief Financial Officer of Praxair, Inc. since January 1, 2014. Prior to this, Mr. White was President of Praxair Canada from 2011 to 2014. He joined Praxair in 2004 as finance director for the company's largest business unit, North American Industrial Gases. In 2008, he became Vice President and Controller of Praxair, Inc., then was named Vice President and Treasurer in 2010. Before joining Praxair, White was vice president, finance, at Fisher Scientific and before that he held various financial positions, including group controller, at GenTek, a manufacturing and performance chemicals company.

ITEM 1A. RISK FACTORS

Due to the size and geographic reach of the company's operations, a wide range of factors, many of which are outside of the company's control, could materially affect the company's future operations and financial performance. Management believes the following risks may significantly impact the company:

Weakening economic conditions in markets in which Linde does business may adversely impact its financial results and/or cash flows.

Linde serves a diverse group of industries across more than 80 countries, which generally leads to financial stability through various business cycles. However, a broad decline in general economic or business conditions in the industries served by its customers could adversely affect the demand for Linde's products and impair the ability of its customers to satisfy their obligations to Linde, resulting in uncollected receivables and/or unanticipated contract terminations or project delays. For example, global political and economic uncertainty could reduce investment activities of Linde's customers, which could adversely affect Linde's business.

In addition, many of Linde's customers are in businesses that are cyclical in nature, such as the chemicals, metals and energy industries. Downturns in these industries may adversely impact Linde during these cycles. Additionally, such conditions could impact the utilization of Linde's manufacturing capacity which may require it to recognize impairment losses on tangible assets such as property, plant and equipment, as well as intangible assets such as goodwill, customer relationships or intellectual property.

Increases in the cost of energy and raw materials and/or disruption in the supply of these materials could result in lost sales or reduced profitability.

Energy is the single largest cost item in the production and distribution of industrial gases. Most of Linde's energy requirements are in the form of electricity, natural gas and diesel fuel for distribution. Linde attempts to minimize the financial impact of variability in these costs through the management of customer contracts and reducing demand through operational productivity and energy efficiency. Large customer contracts typically have escalation and pass-through clauses to recover energy and feedstock costs. Such attempts may not successfully mitigate cost variability, which could negatively impact Linde's financial condition or results of operations. The supply of energy has not been a significant issue in the geographic areas where Linde conducts business. However, regional energy conditions are unpredictable and may pose future risk.

For carbon dioxide, carbon monoxide, helium, hydrogen and specialty gases, raw materials are largely purchased from outside sources. Where feasible, Linde sources several of these raw materials, including carbon dioxide, hydrogen and calcium carbide, as chemical or industrial byproducts. In addition, Linde has contracts or commitments for, or readily available sources of, most of these raw materials; however, their long-term availability and prices are subject to market conditions. A disruption in supply of such raw materials could impact Linde's ability to meet contractual supply commitments.

Linde's international operations are subject to the risks of doing business abroad and international events and circumstances may adversely impact its business, financial condition or results of operations.

Linde has substantial international operations which are subject to risks including devaluations in currency exchange rates, transportation delays and interruptions, political and economic instability and disruptions, restrictions on the transfer of funds, trade conflicts and the imposition of duties and tariffs, import and export controls, changes in governmental policies, labor unrest, possible nationalization and/or expropriation of assets, changes in U.S. and non-U.S. tax policies and compliance with governmental regulations. These events could have an adverse effect on the international operations of Linde in the future by reducing the demand for its products, decreasing the prices at which it can sell its products, reducing the revenue from international operations or otherwise having an adverse effect on its business.

Currency exchange rate fluctuations and other related risks may adversely affect Linde's results.

Because a significant portion of Linde's revenue is denominated in currencies other than its reporting currency, the U.S. dollar, changes in exchange rates will produce fluctuations in revenue, costs and earnings and may also affect the book value of assets and liabilities and related equity. Although the company from time to time utilizes foreign exchange forward contracts to hedge these exposures, its efforts to minimize currency exposure through such hedging transactions may not be successful depending on market and business conditions. As a result, fluctuations in foreign currency exchange rates could adversely affect Linde's financial condition, results of operations or cash flows.

Macroeconomic factors may impact Linde's ability to obtain financing or increase the cost of obtaining financing which may adversely impact Linde's financial results and/or cash flows.

Volatility and disruption in the U.S., European and global credit and equity markets, from time to time, could make it more difficult for Linde to obtain financing for its operations and/or could increase the cost of obtaining financing. In addition, Linde's borrowing costs can be affected by short- and long-term debt ratings assigned by independent rating agencies which are based, in significant part, on its performance as measured by certain criteria such as interest coverage and leverage ratios. A decrease in these debt ratings could increase the cost of borrowing or make it more difficult to obtain financing.

An impairment of goodwill or intangible assets could negatively impact the company's financial results.

As of December 31, 2022, the net carrying value of goodwill and other indefinite-lived intangible assets was $26 billion and $2 billion, respectively, primarily as a result of the business combination and the related acquisition method of accounting applied to Linde AG. In accordance with generally accepted accounting principles, the company periodically assesses these assets to determine if they are impaired. Significant negative industry or economic trends, disruptions to business, unexpected significant changes or planned changes in use of the assets, divestitures and sustained market capitalization declines may result in recognition of impairments to goodwill or other indefinite-lived assets. Any charges relating to such impairments could have a material adverse impact on Linde's results of operations in the periods recognized.

Catastrophic events could disrupt the operations of Linde and/or its customers and suppliers and may have a significant adverse impact on the results of operations.

The occurrence of catastrophic events or natural disasters such as extreme weather, including hurricanes and floods; health epidemics; pandemics, such as COVID-19; and acts of war or terrorism, could disrupt or delay Linde's ability to produce and distribute its products to customers and could potentially expose Linde to third-party liability claims. In addition, such events could impact Linde's customers and suppliers resulting in temporary or long-term outages and/or the limitation of supply of energy and other raw materials used in normal business operations. Linde evaluates the direct and indirect business risks, consults with vendors, insurance providers and industry experts, makes investments in suitably resilient design and technology, and conducts regular reviews of the business risks with management. Despite these steps, however, these situations are outside Linde's control and may have a significant adverse impact on its financial results.

The inability to attract and retain qualified personnel may adversely impact Linde's business.

If Linde fails to attract, hire and retain qualified personnel, it may not be able to develop, market or sell its products or successfully manage its business. Linde is dependent upon a highly skilled, experienced and efficient workforce to be successful. Much of Linde's competitive advantage is based on the expertise and experience of key personnel regarding marketing, technology, manufacturing and distribution infrastructure, systems and products. The inability to attract and hire qualified individuals or the loss of key employees in very skilled areas could have a negative effect on Linde's financial results.

If Linde fails to keep pace with technological advances in the industry or if new technology initiatives do not become commercially accepted, customers may not continue to buy Linde's products and results of operations could be adversely affected.

Linde's research and development is directed toward developing new and improved methods for the production and distribution of industrial gases, the design and construction of plants and toward developing new markets and applications for the use of industrial and process gases. This results in the introduction of new applications and the development of new advanced process technologies. As a result of these efforts, Linde develops new and proprietary technologies and employs necessary measures to protect such technologies within the global geographies in which Linde operates. These technologies help Linde to create a competitive advantage and to provide a platform to grow its business. If Linde's research and development activities do not keep pace with competitors or if Linde does not create new technologies that benefit customers, future results of operations could be adversely affected.

Risks related to pension benefit plans may adversely impact Linde's results of operations and cash flows.

Pension benefits represent significant financial obligations that will be ultimately settled in the future with employees who meet eligibility requirements. Because of the uncertainties involved in estimating the timing and amount of future payments and asset returns, significant estimates are required to calculate pension expense and liabilities related to Linde's plans. Linde utilizes the services of independent actuaries, whose models are used to facilitate these calculations. Several key assumptions are used in the actuarial models to calculate pension expense and liability amounts recorded in the consolidated financial statements. In particular, significant changes in actual investment returns on pension assets, discount rates, or legislative or regulatory changes could impact future results of operations and required pension contributions.

Operational risks may adversely impact Linde's business or results of operations.

Linde's operating results are dependent on the continued operation of its production facilities and its ability to meet customer contract requirements and other needs. Insufficient or excess capacity threatens Linde's ability to generate competitive profit margins and may expose Linde to liabilities related to contract commitments. Operating results are also dependent on Linde's ability to complete new construction projects on time, on budget and in accordance with performance requirements. Failure to do so may expose Linde's business to loss of revenue, potential litigation and loss of business reputation.

Also inherent in the management of Linde's production facilities and delivery systems, including storage, vehicle transportation and pipelines, are operational risks that require continuous training, oversight and control. Material operating failures at production, storage facilities or pipelines, including fire, toxic release and explosions, or the occurrence of vehicle transportation accidents could result in loss of life, damage to the environment, loss of production and/or extensive property damage, all of which may negatively impact Linde's financial results.

Linde may be subject to information technology system failures, network disruptions and breaches in data security.

Linde relies on information technology systems and networks for business and operational activities, and also stores and processes sensitive business and proprietary information in these systems and networks. These systems are susceptible to outages due to fire, flood, power loss, telecommunications failures, viruses, break-ins and similar events, or breaches of security.

Linde has taken steps to address these risks and concerns by implementing advanced security technologies, internal controls, network and data center resiliency and recovery process. Despite these steps, however, our information technology systems have in the past been and in the future will likely be subject to increasingly sophisticated cyber attacks. Operational failures and breaches of security from such attempts could lead to the loss or disclosure of confidential information or personal data belonging to Linde or our employees and customers or suppliers. These failures and breaches could result in business interruption or malfunction and lead to legal or regulatory actions that could result in a material adverse impact on Linde's operations, reputation and financial results. To date, such attempts have not had any significant impact on Linde's operations or financial results.

The inability to effectively integrate acquisitions or collaborate with joint venture partners could adversely impact Linde's financial position and results of operations.

Linde has evaluated and expects to continue to evaluate, a wide array of potential strategic acquisitions and joint ventures. Many of these transactions, if consummated, could be material to its financial condition and results of operations. In addition, the process of integrating an acquired company, business or group of assets may create unforeseen operating difficulties and expenditures. Although historically Linde has been successful with its acquisition strategy and execution, the areas where Linde may face risks include:

- the need to implement or remediate controls, procedures and policies appropriate for a larger public company at companies that prior to the acquisition lacked these controls, procedures and policies;
- diversion of management time and focus from operating existing business to acquisition integration challenges;
- cultural challenges associated with integrating employees from the acquired company into the existing organization;
- the need to integrate each company's accounting, management information, human resources and other administrative systems to permit effective management;
- difficulty with the assimilation of acquired operations and products;
- failure to achieve targeted synergies and cost reductions; and
- inability to retain key employees and business relationships of acquired companies.

Foreign acquisitions and joint ventures involve unique risks in addition to those mentioned herein, including those related to integration of operations across different cultures and languages, currency risks and the particular economic, political and regulatory risks associated with specific countries.

Also, the anticipated benefit of potential future acquisitions may not materialize. Future acquisitions or dispositions could result in the incurrence of debt, contingent liabilities or amortization expenses, or impairments of goodwill, any of which could adversely impact Linde's financial results.

Linde is subject to a variety of international laws and government regulations and changes in, or failure to comply with, these laws or regulations could have an adverse impact on the company's business, financial position and results of operations.

Linde is subject to regulations in the following areas, among others:

- environmental protection, including climate change and energy efficiency laws and policies;
- U.S. and non-U.S. tax laws and currency controls;
- safety;
- securities laws applicable in the United States, the European Union, Germany, Ireland, and other jurisdictions;
- trade and import/export restrictions, as well as economic sanctions laws;
- antitrust matters;
- data protection;
- global anti-bribery laws, including the U.S. Foreign Corrupt Practices Act; and
- healthcare regulations.

Changes in these or other regulatory areas may impact Linde's profitability and may give rise to new or increased compliance risks: it may become more complex and costly to ensure compliance, and the level of sanctions in the event of non-compliance may rise. Noncompliance with such laws and regulations could result in penalties or sanctions, cancellation of marketing rights or restrictions on participation in, or even exclusion from, public tender proceedings, all of which could have a material adverse impact on Linde's financial results and/or reputation.

Such changes may also restrict Linde's ability to compete effectively in the marketplace. Changes to regulations in the areas of environmental protection and climate change, for example, may impact customer and competitor behavior driving structural changes in key end markets. While Linde will work to mitigate these risks through the pursuit of strategic alliances and investment in applications technologies to capture new growth areas, given the uncertainty about the type and scope of new regulations, it is difficult to predict how such changes and their impact on market behavior will ultimately impact Linde's business. However, such changes could have a material adverse impact on Linde's results of operations.

Doing business globally requires Linde to comply with anti-corruption, trade, compliance and economic sanctions and similar laws, and to implement policies and procedures designed to ensure that its employees and other intermediaries comply with the applicable restrictions. These restrictions include prohibitions on the sale or supply of certain products, services and any other economic resources to embargoed or sanctioned countries, governments, persons and entities. Compliance with these restrictions requires, among other things, screening of business partners. Despite its commitment to legal compliance and corporate ethics, the company cannot ensure that its policies and procedures will always protect it from intentional, reckless or negligent acts committed by employees or agents under the applicable laws. If Linde fails to comply with laws governing the conduct of international operations, Linde may be subject to criminal and civil penalties and other remedial measures, which could materially adversely affect its reputation, business and results of operations.

The outcome of litigation or governmental investigations may adversely impact the company's business or results of operations.

Linde's subsidiaries are party to various lawsuits and governmental investigations arising in the ordinary course of business. Adverse outcomes in some or all of the claims pending may result in significant monetary damages or injunctive relief that could adversely affect Linde's ability to conduct business. Linde and its subsidiaries may in the future become subject to further claims and litigation, which is impossible to predict. The litigation and other claims Linde faces are subject to inherent uncertainties. Legal or regulatory judgments or agreed settlements might give rise to expenses which are not covered, or are not fully covered, by insurance benefits and may also lead to negative publicity and reputational damage. An unfavorable outcome or determination could cause a material adverse impact on the company's results of operations.

Potential product defects or inadequate customer care may adversely impact Linde's business or results of operations.

Risks associated with products and services may result in potential liability claims, the loss of customers or damage to Linde's reputation. Principal possible causes of risks associated with products and services are product defects or an inadequate level of customer care when Linde is providing services.

Linde is exposed to legal risks relating to product liability in the countries where it operates, including countries such as the United States, where legal risks (in particular through class actions) have historically been more significant than in

other countries. The outcome of any pending or future products and services proceedings or investigations cannot be predicted and legal or regulatory judgments or agreed settlements may give rise to significant losses, costs and expenses.

The manufacturing and sale of products as well as the construction and sale of plants by Linde may give rise to risks associated with the production, filling, storage, handling and transport of raw materials, goods or waste. Industrial gases are potentially hazardous substances and medical gases and the related healthcare services must comply with the relevant specifications in order to not adversely affect the health of patients treated with them.

Linde's products and services, if defective or not handled or performed appropriately, may lead to personal injuries, business interruptions, environmental damages or other significant damages, which may result, among other consequences, in liability, losses, monetary penalties or compensation payments, environmental clean-up costs or other costs and expenses, exclusion from certain market sectors deemed important for future development of the business and loss of reputation. All these consequences could have a material adverse effect on Linde's business and results of operations.

U.S. civil liabilities may not be enforceable against Linde.

Linde is organized under the laws of Ireland and substantial portions of its assets are located outside of the United States. In addition, certain directors and officers of Linde and its subsidiaries reside outside the United States. As a result, it may be difficult for investors to effect service of process within the United States upon Linde or such persons, or to enforce outside the United States judgments obtained against such persons in U.S. courts in any action, including actions predicated upon the civil liability provisions of the U.S. federal securities laws. In addition, it may be difficult for investors to enforce, in original actions brought in courts in jurisdictions located outside the United States, rights predicated upon the U.S. federal securities laws.

A judgment for the payment of money rendered by a court in the United States based on civil liability would not be automatically enforceable in Ireland. There is no treaty between Ireland and the United States providing for the reciprocal enforcement of foreign judgments. The following requirements must be met before the foreign judgment will be deemed to be enforceable in Ireland (i) the judgment must be for a definite sum, (ii) the judgment must be final and conclusive; and (iii) the judgment must be provided by a court of competent jurisdiction.

An Irish court will also exercise its right to refuse judgment if the foreign judgment (i) was obtained by fraud; (ii) violated Irish public policy; (iii) is in breach of natural justice; or (iv) if the judgment is irreconcilable with an earlier foreign judgment.

In addition, there is doubt as to whether an Irish court would accept jurisdiction and impose civil liability on Linde or such persons in an original action predicated solely upon the U.S. federal securities laws brought in a court of competent jurisdiction in Ireland against Linde or such member, officer or expert, respectively.

Changes in tax laws or policy could adversely impact the company's financial position or results of operations.

Linde and its subsidiaries are subject to the tax rules and regulations in the U.S., Germany, Ireland, the U.K. and other countries in which they operate. Those tax rules and regulations are subject to change on a prospective or retroactive basis. Under current economic and political conditions tax rates and policies in any jurisdiction, including the U.S., the U.K. and the EU, are subject to significant changes which could result in a significant change to Linde's current and deferred income tax. In particular, since Linde is currently treated as U.K. tax resident, any potential changes in the tax rules applying to U.K. tax-resident companies would directly affect Linde.

A change in Linde's tax residency could have a negative effect on the company's future profitability and may trigger taxes on dividends or exit charges. If Linde ceases to be resident in the U.K. and becomes resident in another jurisdiction, it may be subject to U.K. exit charges, and/or could become liable for additional tax charges in the other jurisdiction. If Linde were to be treated as resident in more than one jurisdiction, it could be subject to duplicative taxation. Furthermore, although Linde is incorporated in Ireland and is not expected to be treated as a domestic corporation for U.S. federal income tax purposes, it is possible that the IRS could challenge this result or that changes in U.S. federal income tax law could alter this result. If the IRS successfully asserted such a position or the law were to change, significant adverse tax consequences may result for Linde, the company and Linde's shareholders.

Changes in tax laws may result in higher tax expense and tax payments. In addition, changes in tax legislation and uncertainty about the tax environment in some regions may restrict Linde's opportunity to enforce its respective rights under the law. Linde also operates in countries with complex tax regulations which could be interpreted in different ways. Linde and its subsidiaries are subject to audits by taxing authorities in various jurisdictions or other review actions by the relevant financial or tax authorities. The ultimate tax outcome may differ from the amounts recorded in Linde's or its subsidiaries' financial statements and may materially affect their respective financial results for the period when such determination is made.

Following the Reorganization, New Linde will seek Irish High Court approval for the creation of distributable reserves. New Linde expects this will be forthcoming, but cannot guarantee this, and until distributable reserves of New Linde are created, New Linde will be unable to make distributions by way of dividends, share repurchases or otherwise under Irish law.

Under Irish law, dividends may only be paid and share repurchases and redemptions must generally be funded only out of "distributable reserves," which New Linde will not have immediately following the Reorganization. The creation of distributable reserves of New Linde involves a reduction in New Linde's undenominated share capital which requires the approval of the Irish High Court. The approval of the Irish High Court is expected within eight weeks following the Reorganization becoming effective. This approval is the same process successfully followed by Linde immediately after the Linde AG – Praxair, Inc. merger in 2018. New Linde is not aware of any reason why the Irish High Court would not approve the creation of distributable reserves in this manner; however, the issuance of the required order is a matter for the discretion of the Irish High Court. In the event that distributable reserves of New Linde are not created, no distributions by way of dividends, share repurchases or otherwise will be permitted under Irish law until such time as New Linde has created sufficient distributable reserves from its business activities, except that New Linde will be able to pay any dividends declared by the company prior to the Reorganization becoming effective.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Linde has received no written SEC staff comments regarding any of its Exchange Act reports which remain unresolved.

ITEM 2. PROPERTIES

Linde's principal executive offices are located in leased office space in Woking, United Kingdom and owned office space in Danbury, Connecticut. Linde also owns principal administrative office space in Tonawanda, New York, United States and Pullach, Germany.

Due to the nature of Linde's industrial gas products, it is generally uneconomical to transport them distances greater than a few hundred miles from the production facility. As a result, Linde operates a significant number of production facilities spread globally throughout a number of geographic regions.

The following is a description of production facilities for Linde by segment. No significant portion of these assets was leased at December 31, 2022. Generally, these facilities are utilized and are sufficient to meet the company's manufacturing needs.

Americas

The Americas segment operates production facilities primarily in the U.S., Canada, Mexico and Brazil, approximately 350 of which are mainly cryogenic air separation plants, hydrogen plants and carbon dioxide plants. There are five major pipeline complexes in North America located in northern Indiana, Houston, along the Gulf Coast of Texas, Detroit and Louisiana. Also located throughout the Americas are noncryogenic air separation plants, packaged gas facilities and other smaller plant facilities.

EMEA

The EMEA segment has production facilities primarily in Germany, France, Sweden, the Republic of South Africa, and the U.K. which include approximately 275 cryogenic air separation plants and carbon dioxide plants. Also located throughout Europe are noncryogenic air separation plants, pipelines, hydrogen, packaged gas facilities and other smaller plant facilities.

APAC

The APAC segment has production facilities located primarily in China, Australia, India, South Korea and Thailand, approximately 230 of which are cryogenic air separation plants and carbon dioxide plants. Also located throughout Asia are noncryogenic air separation plants, pipelines, hydrogen, packaged gas and other production facilities.

Engineering

The Engineering business designs and constructs turnkey process plants for third-party customers as well as for the gases businesses in many locations worldwide, such as air separation, hydrogen, synthesis, olefin and natural gas plants. Plant components are produced in owned factories in Tacherting, Germany; Hesinque, France; New York and Oklahoma, United States; and Dalian, China.

ITEM 3. LEGAL PROCEEDINGS

Information required by this item is incorporated herein by reference to the section captioned "Notes to Consolidated Financial Statements – 17. Commitments and Contingencies" in Item 8 of this 10-K.

ITEM 4. MINE SAFETY DISCLOSURES

Not Applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Linde plc shares trade on the New York Stock Exchange ("NYSE") and the Frankfurt Stock Exchange ("FSE") under the ticker symbol "LIN". At December 31, 2022 there were 7,319 shareholders of record.

On January 18, 2023, shareholders approved the company's proposal for an intercompany reorganization that will result in the delisting of its ordinary shares from the Frankfurt Stock Exchange. Following the completion of legal and regulatory approvals, Linde anticipates that the intercompany reorganization and delisting process will be completed, and its ordinary shares will be delisted from the Frankfurt Stock Exchange, on or about March 1, 2023.

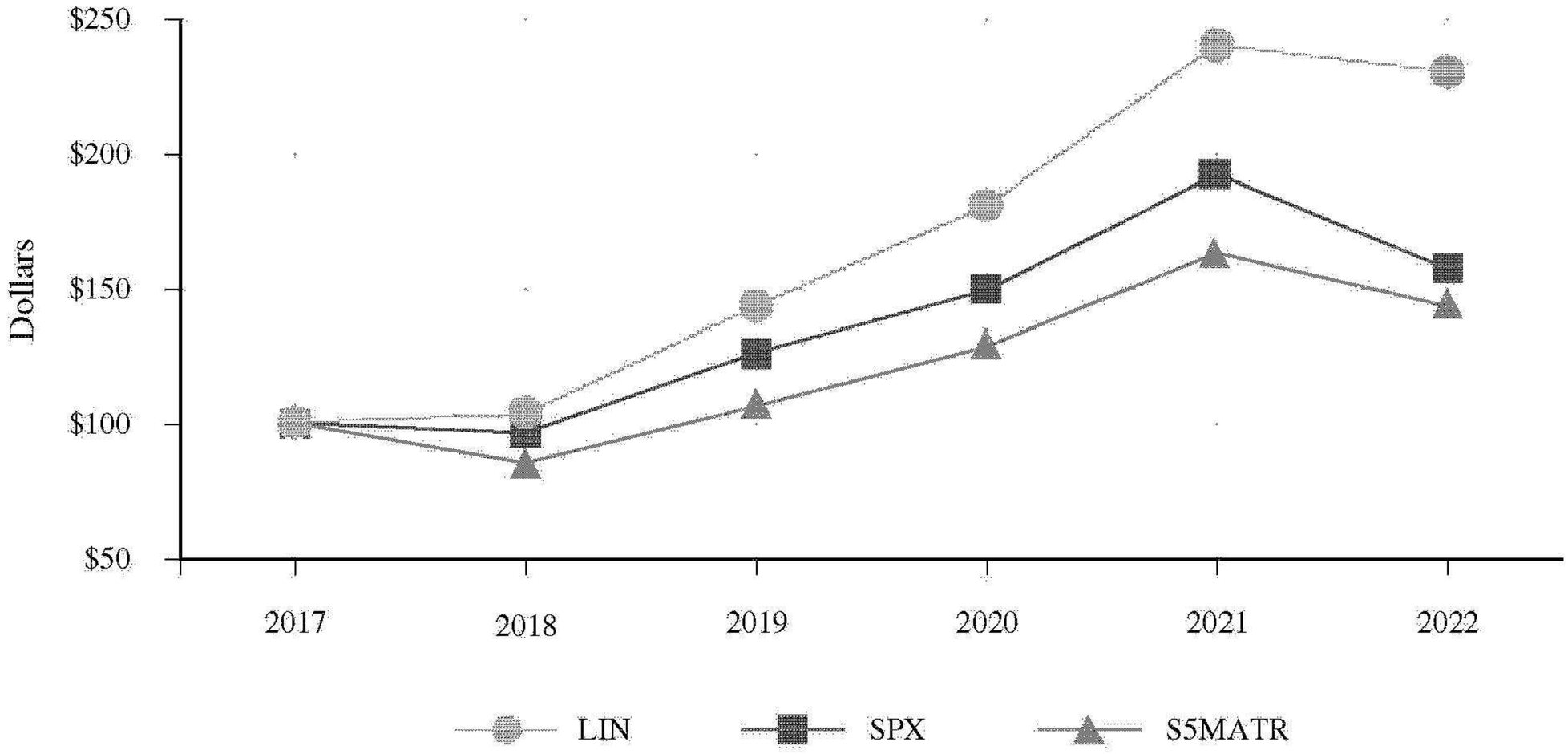
Purchases of Equity Securities – Certain information regarding purchases made by or on behalf of the company or any affiliated purchaser (as defined in Rule 10b-18(a)(3) under the Securities Exchange Act of 1934, as amended) of its ordinary shares during the three months ended December 31, 2022 is provided below:

Period	Total Number of Shares Purchased *(Thousands)*	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Program (1) *(Thousands)*	Approximate Dollar Value of Shares that May Yet be Purchased Under the Program (2) *(Millions)*
October 2022	677	$ 287.57	677	$ 5,832
November 2022	1,323	$ 316.05	1,323	$ 5,414
December 2022	138	$ 333.88	138	$ 5,368
Fourth Quarter 2022	2,138	$ 308.18	2,138	5,368

(1) On February 28, 2022 the company's board of directors approved the repurchase of $10.0 billion of its ordinary shares ("2022 program") which could take place from time to time on the open market (and could include the use of 10b5-1 trading plans), subject to market and business conditions. The 2022 program has a maximum repurchase amount of 15% of outstanding shares, beginning on March 1, 2022 and expires on July 31, 2024.

(2) As of December 31, 2022, the company repurchased $4.6 billion of its ordinary shares pursuant to the 2022 ` program. As of December 31, 2022, $5.4 billion of share repurchases remain authorized under the 2022 program.

Peer Performance Table – The graph below compares the most recent five-year cumulative returns of the common stock of Praxair, the company's predecessor, through October 31, 2018 and Linde's ordinary shares for periods subsequent to October 31, 2018 with those of the Standard & Poor's 500 Index ("SPX") and the S5 Materials Index ("S5MATR") which covers 29 companies, including Linde. The figures assume an initial investment of $100 on December 31, 2017 and that all dividends have been reinvested.



	2017	2018	2019	2020	2021	2022
LIN	$100	$103	$143	$180	$240	$230
SPX	$100	$96	$126	$149	$192	$157
S5MATR	$100	$85	$106	$128	$163	$143

ITEM 6. RESERVED

Not applicable.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of the company's financial condition and results of operations should be read together with its consolidated financial statements and notes to the consolidated financial statements included in Item 8 of this Form 10-K.

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BUSINESS OVERVIEW

The company's primary products in its industrial gases business are atmospheric gases (oxygen, nitrogen, argon, rare gases) and process gases (carbon dioxide, helium, hydrogen, electronic gases, specialty gases, acetylene). The company also designs, engineers, and builds equipment that produces industrial gases and offers its customers a wide range of gas production and processing services such as olefin plants, natural gas plants, air separation plants, hydrogen and synthesis gas plants and other types of plants.

Linde's industrial gas operations are managed on a geographical basis and in 2022 86% of sales were generated by Linde's three geographic segments (Americas, EMEA and APAC) and the remaining 14% are related largely to the Engineering segment, and to a lesser extent Other (see Note 18 to the consolidated financial statements for operating segment details).

Linde serves a diverse group of industries including healthcare, chemicals and energy, manufacturing, metals and mining, food and beverage, and electronics. The diversity of end-markets supports financial stability for Linde in varied business cycles.

Linde generates most of its revenues and earnings in the following geographies where the company has its strongest market positions and where distribution and production operations allow the company to deliver the highest level of service to its customers at the lowest cost.

North and South America ("Americas")	**Europe, Middle East and Africa ("EMEA")**	**Asia and Pacific ("APAC")**
United States	Germany	China
Brazil	United Kingdom	Australia
Mexico	Eastern Europe	South Korea
Canada		India

The company manufactures and distributes its industrial gas products through networks of thousands of production plants, pipeline complexes, distribution centers and delivery vehicles. Major pipeline complexes are primarily located in the United States and China. These networks are a competitive advantage, providing the foundation of reliable product supply to the company's customer base. The majority of Linde's business is conducted through long-term contracts which provide stability in cash flow and the ability to pass through changes in energy and feedstock costs to customers. The company has growth opportunities in all major geographies and in diverse end-markets such as healthcare, chemicals and energy, manufacturing, metals and mining, food and beverage, and electronics.

EXECUTIVE SUMMARY – FINANCIAL RESULTS & OUTLOOK

2022 Year in review

- Sales of $33,364 million were 8% above 2021 sales of $30,793 million. Higher pricing across all geographic segments contributed 7% to sales. Cost pass-through increased sales by 6% with minimal impact on operating profit. Volume increased sales by 1%. Currency translation decreased sales by 5%, largely in EMEA and APAC. Divestitures decreased sales by 1%.

- Reported operating profit of $5,369 million was 8% above 2021. Adjusted operating profit of $7,904 million was 10% above 2021. The increase in the reported operating profit was primarily due to higher pricing, productivity initiatives and lower depreciation and amortization driven by merger related assets, which more than offset Russia-Ukraine conflict and other charges and the adverse impacts of inflation and currency in the year. The increase in adjusted operating profit increase was primarily due to higher pricing and productivity initiatives, which more than offset the adverse impacts of inflation and currency in the year.*

- Income from continuing operations of $4,147 million and diluted earnings per share from continuing operations of $8.23 increased from $3,821 million and $7.32, respectively in 2021. Adjusted income from continuing operations of $6,195 million and adjusted diluted earnings per share from continuing operations of $12.29 were 11% and 15%, respectively above 2021 adjusted amounts.*

- Cash flow from operations of $8,864 million was $861 million below 2021. The decrease was driven by higher working capital requirements, including lower inflows from contract liabilities from engineering customer advanced payments, partially offset by higher net income adjusted for non cash charges. Capital expenditures were $3,173 million; dividends paid were $2,344 million; net purchases of ordinary shares of $5,132 million; and debt borrowings, net were $4,475 million.

*A reconciliation of the adjusted amounts can be found in the "Non-GAAP Financial Measures" section in this MD&A.

2023 Outlook

Linde provides quarterly updates on operating results, material trends that may affect financial performance, and financial guidance via earnings releases and investor teleconferences. These materials are available on the company's website, www.linde.com, but are not incorporated herein.

CONSOLIDATED RESULTS AND OTHER INFORMATION

The discussion that follows includes a comparison of our results of operations and liquidity and capital resources for the years ended December 31, 2022 and 2021. For the discussion comparing the years ended December 31, 2021 and 2020, refer to Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations, of our Form 10-K for the year ended December 31, 2021.

The following table provides summary information for 2022 and 2021. The reported amounts are GAAP amounts from the Consolidated Statements of Income. The adjusted amounts are intended to supplement investors' understanding of the company's financial information and are not a substitute for GAAP measures.

(Millions of dollars, except per share data)

Year Ended December 31,	**2022**	**2021**	**Variance**
Reported Amounts			
Sales	$ 33,364	$ 30,793	8 %
Cost of sales, exclusive of depreciation and amortization	$ 19,450	$ 17,543	11 %
As a percent of sales	58.3%	57.0%	
Selling, general and administrative	$ 3,107	$ 3,189	(3)%
As a percent of sales	9.3%	10.4%	
Depreciation and amortization	$ 4,204	$ 4,635	(9)%
Russia-Ukraine conflict and other charges (a)	$ 1,029	$ 273	—
Operating Profit	$ 5,369	$ 4,984	8 %
Operating margin	16.1%	16.2%	
Interest expense – net	$ 63	$ 77	(18)%
Net pension and OPEB cost (benefit), excluding service cost	$ (237)	$ (192)	23 %
Effective tax rate	25.9%	24.7%	
Income from equity investments	$ 172	$ 119	45 %
Noncontrolling interests from continuing operations	$ (134)	$ (135)	(1)%
Income from continuing operations	$ 4,147	$ 3,821	9 %
Diluted earnings per share from continuing operations	$ 8.23	$ 7.32	12 %
Diluted shares outstanding	504,038	521,875	(3)%
Number of employees	65,010	72,327	(10)%
Adjusted Amounts (b)			
Operating profit	$ 7,904	$ 7,176	10 %
Operating margin	23.7%	23.3%	
Income from continuing operations	$ 6,195	$ 5,579	11 %
Diluted earnings per share from continuing operations	$ 12.29	$ 10.69	15 %
Other Financial Data (b)			
EBITDA from continuing operations	$ 9,745	$ 9,738	— %
As percent of sales	29.2%	31.6%	
Adjusted EBITDA from continuing operations	$ 10,873	$ 10,179	7 %
As percent of sales	32.6%	33.1%	

(a) See Note 3 to the consolidated financial statements.

(b) Adjusted amounts and Other Financial Data are non-GAAP performance measures. A reconciliation of reported amounts to adjusted amounts can be found in the "Non-GAAP Financial Measures" section of this MD&A.

Results of Operations

The following table provides a summary of changes in consolidated sales:

	2022 vs. 2021 % Change
Factors Contributing to Changes - Sales	
Volume	1 %
Price/Mix	7 %
Cost pass-through	6 %
Currency	(5)%
Acquisitions/divestitures	(1)%
Engineering	— %
	8 %

2022 Compared With 2021

Sales

Linde sales increased $2,571 million, or 8%, for the 2022 year versus 2021. Higher pricing across all geographic segments contributed 7% to sales. Cost pass-through, representing the contractual billing of energy cost variances primarily to onsite customers, increased sales by 6%, with minimal impact on operating profit. Volume growth in all end markets, except healthcare, and startups increased sales by 1%. Currency translation decreased sales by 5%, largely in EMEA and APAC, driven by the weakening of the Euro, Chinese yuan, British pound and Australian dollar against the U.S. dollar. The impact of divestitures decreased sales by 1%.

Cost of sales, exclusive of depreciation and amortization

Cost of sales, exclusive of depreciation and amortization, increased $1,907 million, or 11%, for the year primarily due to inflation and higher volumes, partially offset by productivity gains and currency effects. Cost of sales, exclusive of depreciation and amortization, was 58.3% and 57.0% of sales, respectively, in 2022 compared to 2021. The increase as a percentage of sales was due primarily to higher cost pass-through to customers.

Selling, general and administrative expenses

Selling, general and administrative expense ("SG&A") decreased $82 million, from $3,189 in 2021 to $3,107 million in 2022. SG&A was 9.3% of sales in 2022 versus 10.4% in 2021. Currency impacts decreased SG&A by approximately $127 million in 2022. Excluding currency impacts, underlying SG&A increased primarily due to higher costs.

Depreciation and amortization

Reported depreciation and amortization expense decreased $431 million, or 9% versus 2021. The decrease is primarily due to lower depreciation and amortization of assets acquired in the merger and currency impacts.

On an adjusted basis, depreciation and amortization expense decreased $49 million, or 2%, versus 2021. Currency impacts decreased depreciation and amortization by $123 million in 2022. Excluding currency impacts, underlying depreciation and amortization increased including new project start ups.

Russia-Ukraine conflict and other charges

Russia-Ukraine conflict and other charges were $1,029 million and $273 million for 2022 and 2021, respectively. The charge for 2022 relates primarily to the deconsolidation and impairment of Russian subsidiaries resulting from the ongoing war in Ukraine and related sanctions recorded as of June 30, 2022. 2021 charges relate to cost reduction program and other charges, primarily severance (see Note 3 to the condensed consolidated financial statements).

On an adjusted basis, these benefits and costs have been excluded in both periods.

Operating profit

Reported operating profit increased $385 million in 2022, or 8%. On an adjusted basis, operating profit increased $728 million, or 10%, for 2022 versus 2021.

On a reported basis, operating profit increased $385 million, or 8% in 2022. The increase was primarily due to higher pricing, volumes, savings from productivity initiatives, and lower depreciation and amortization driven by merger related

assets. These increases more than offset the adverse impacts of inflation and currency in the year as well as the Russia-Ukraine conflict and other charges of $1,029 million. Cost reduction programs and other charges was $273 million in 2021.

On an adjusted basis, which excludes the impacts of purchase accounting as well as Russia-Ukraine conflict and other charges, operating profit increased $728 million, or 10%. Operating profit growth was driven by higher pricing, volumes and productivity initiatives, which more than offset the effects of inflation and currency during the period. A discussion of operating profit by segment is included in the segment discussion that follows.

Interest expense - net

Reported interest expense – net in 2022 decreased $14 million, or 18%, versus 2021. On an adjusted basis interest expense decreased $32 million, or 25% in 2022 as compared to 2021.

On both a reported and adjusted basis, the decrease year over year was driven primarily by higher interest income on cash deposits, partially offset by higher borrowing costs on short-term debt.

Net pension and OPEB cost (benefit), excluding service cost

Reported net pension and OPEB cost (benefit), excluding service cost were benefits of $237 million and $192 million in 2022 and 2021, respectively. The increase in benefit primarily relates to lower amortization of deferred losses, partially offset by higher interest cost reflective of the higher discount rate environment year-over-year (see Note 16 to the consolidated financial statements).

Effective tax rate

The reported effective tax rate ("ETR") for 2022 was 25.9% versus 24.7% in 2021. The increase in the rate is primarily related to the net tax expense resulting from the deconsolidation and impairment of the company's business in Russia in 2022. 2021 included a deferred income tax charge related to the revaluation of net deferred tax liabilities for a tax rate increase in the United Kingdom (see Note 5 to the consolidated financial statements).

On an adjusted basis, the ETR for 2022 was 24.2% versus 24.1% in 2021.

Income from equity investments

Reported income from equity investments for 2022 was $172 million as compared to $119 million in 2021. On an adjusted basis, income from equity investments for 2022 was $247 million versus $231 million in 2021.

On a reported basis, the year-over-year increase in income from equity investments was due to a $35 million impairment charge taken in the third quarter of 2021 related to a joint venture in the APAC segment.

On an adjusted basis, the year-over-year increase in income from equity investments was primarily driven by the overall performance of investments in APAC.

Noncontrolling interests from continuing operations

At December 31, 2022, noncontrolling interests from continuing operations consisted primarily of noncontrolling shareholders' investments in APAC (primarily in China).

Reported noncontrolling interests from continuing operations decreased $1 million, from $135 million in 2021 to $134 million in 2022.

Adjusted noncontrolling interests from continuing operations increased $6 million in 2022 as compared to 2021.

Income from continuing operations

Reported income from continuing operations increased $326 million, or 9%. On an adjusted basis, which excludes the impacts of purchase accounting and Russia-Ukraine conflict and other charges, income from continuing operations increased $616 million, or 11%, in 2022 versus 2021. On both a reported and adjusted basis, the increase was driven by higher operating profit.

Diluted earnings per share from continuing operations

Reported diluted earnings per share from continuing operations increased $0.91, or 12%, in 2022 as compared to 2021. On an adjusted basis, diluted EPS of $12.29 in 2022 increased 15% versus 2021. The increase on both reported and adjusted basis was primarily due to higher income from continuing operations and lower diluted shares outstanding.

Employees

The number of employees at December 31, 2022 was 65,010, a decrease of 10%, or 7,317 employees from 2021, primarily driven by the sale of GIST business, cost reduction initiatives and the deconsolidation of Russian subsidiaries in the EMEA and Engineering segments.

Other Financial Data

EBITDA from continuing operations increased to $9,745 million in 2022 from $9,738 million in 2021. Adjusted EBITDA from continuing operations increased to $10,873 million for 2022 as compared to $10,179 million in 2021, primarily due to higher adjusted income from continuing operations plus depreciation and amortization versus the prior period.

See the "Non-GAAP Financial Measures" section for definitions and reconciliations of these non-GAAP measures to reported GAAP amounts.

Other Comprehensive Income (Loss)

Other comprehensive income (loss) for the year ended December 31, 2022 was a loss of $778 million resulted primarily from currency translation adjustments of $1,835 million, partially offset by an increase in the funded status of the company's retirement obligations of $1,070 million driven by a higher discount rate environment. The translation adjustments reflect the impact of translating local currency foreign subsidiary financial statements to U.S. dollars, and are largely driven by the movement of the U.S. dollar against major currencies including the Euro, the Chinese yuan and the British pound. See the "Currency" section of the MD&A for exchange rates used for translation purposes and Note 7 to the consolidated financial statements for a summary of the currency translation adjustment component of accumulated other comprehensive income by segment.

Related Party Transactions

The company's related parties are primarily unconsolidated equity affiliates. The company did not engage in any material transactions involving related parties that included terms or other aspects that differ from those which would be negotiated with independent parties.

Environmental Matters

Linde's principal operations relate to the production and distribution of atmospheric and other industrial gases, which for the most part are used to help customers reduce their emissions. Worldwide costs relating to environmental protection may continue to grow due to increasingly stringent laws and regulations. In addition, Linde may face physical risks from climate change and extreme weather.

Climate Change

Linde operates in jurisdictions that have, or are developing, laws and/or regulations to reduce or mitigate the adverse effects of greenhouse gas ("GHG") emissions and therefore faces a highly uncertain regulatory environment in this area. For example, the U.S. Environmental Protection Agency ("EPA") has promulgated rules requiring reporting of GHG emissions to which Linde, its suppliers and customers are subject to. EPA has also promulgated regulations to restrict GHG emissions, including final rules regulating GHG emissions from light-duty vehicles and certain large manufacturing facilities, many of which are Linde suppliers or customers. In addition to these developments in the United States, several other countries worldwide have already implemented carbon taxation or trading systems which impact the company and its customers, including regulations in China, Singapore and the European Union. Among other impacts, such regulations are expected to raise the cost of energy, which is a significant cost for Linde. Nevertheless, Linde's long-term customer contracts routinely provide rights to recover increased electricity, natural gas, and other costs that are incurred by the company as a result of climate change regulation.

Linde anticipates continued growth in hydrogen sales due to increased focus on decarbonization projects. Traditionally, hydrogen production plants and a large number of other manufacturing and electricity-generating plants have been identified in California and the European Union as a source of carbon dioxide emissions and these plants are subject to cap-and-trade regulations in those jurisdictions. Linde believes it will be able to mitigate the costs of these regulations through the terms of its product supply contracts. However, legislation that limits GHG emissions may impact growth by increasing capital, compliance, operating and maintenance costs and/or decreasing demand.

To manage business risks from current and potential GHG emission regulation as well as physical consequences of climate change, Linde actively monitors current developments, evaluates the direct and indirect business risks, and takes appropriate actions. Among others, actions include: increasing relevant resources and training; maintaining contingency plans; obtaining advice and counsel from expert vendors, insurance providers and industry experts; incorporating GHG provisions in commercial agreements; and conducting regular reviews of the business risks with management. Although there are considerable uncertainties, Linde believes that the business risk from potential regulations can be effectively managed through its commercial contracts. Additionally, Linde does not anticipate any material effects regarding its plant operations or business arising from potential physical risks of climate change.

Linde continuously seeks opportunities to optimize energy use and GHG emissions through research and development in customer applications and rigorous operational energy efficiency, sourcing low-carbon source energy, and purchasing hydrogen as a chemical byproduct where feasible. Linde tracks GHG emission performance versus targets and reports regularly to business management and annually to Linde's Board of Directors. In 2021, a new Sustainability Committee was created. The Committee is responsible for oversight of the Company's programs, policies and strategies related to environmental matters, including climate change, greenhouse gas reduction goals and decarbonization solutions, such as clean energy and carbon management.

At the same time, external factors may provide Linde with future business opportunities. For example, in 2022, several pieces of legislation were enacted, including the Inflation Reduction Act in the U.S., which provides for investments in decarbonization opportunities including hydrogen projects. Other factors include governmental regulation of GHG and other emissions; uncertain costs of energy and certain natural resources; the development of renewable energy alternatives; and new technologies that help extract natural gas, improve air quality, increase energy efficiency and mitigate the impacts of climate change. Linde continues to develop new applications that can help customers lower emissions by reducing energy consumption and increasing product throughput. Stricter regulation of water quality in emerging economies such as China provide a growing market for a number of gases, e.g., oxygen for wastewater treatment. Increased concern about drought in areas such as California and Australia may create additional markets for carbon dioxide for desalination. Renewable fuel standards in the European Union and U.S. can create a market for second-generation biofuels which use industrial gases such as oxygen, carbon dioxide, and hydrogen.

Costs Relating to the Protection of the Environment

Environmental protection costs in 2022 were not significant. Linde anticipates that future annual environmental protection expenditures will be similar to 2022, subject to any significant changes in existing laws and regulations. Based on historical results and current estimates, management does not believe that environmental expenditures will have a material adverse effect on the consolidated financial position, the consolidated results of operations or cash flows in any given year.

Legal Proceedings

See Note 17 to the consolidated financial statements for information concerning legal proceedings.

Retirement Benefits

Pensions

The net periodic benefit cost (benefit) for the U.S. and non-U.S. pension plans was a benefit of $110 million, $35 million and $25 million in 2022, 2021 and 2020, respectively.

The funded status (pension benefit obligation ("PBO") less the fair value of plan assets) for the U.S. plans was a deficit of $238 million and $271 million at December 31, 2022 and 2021, respectively. The funded status for non-U.S. plans was a surplus of $208 million and deficit of $1,430 million at December 31, 2022 and 2021, respectively. Both the U.S. and non-U.S. plans derived the benefit from a lower PBO due to an increase in discount rates.

Global pension contributions were $51 million in 2022, $42 million in 2021, and $91 million in 2020. At a minimum, Linde contributes to its pension plans to comply with local regulatory requirements (e.g., ERISA in the U.S.). Discretionary contributions in excess of the local minimum requirements are made based on many factors, including long-term projections of the plans' funded status, the economic environment, potential risk of overfunding, pension insurance costs and alternative uses of cash. Changes to these factors can impact the timing of discretionary contributions from year to year. Estimated required contributions for 2023 are currently expected to be in the range of $40 million to $50 million.

Linde assumes expected returns on plan assets for 2023 of 7.00% and 5.60% for the U.S. and non-U.S. plans, respectively, which are consistent with the long-term expected returns on its investment portfolios.

Excluding the impact of any settlements, 2023 consolidated pension expense is expected to be a benefit of approximately $118 million. The benefit derived from the expected return on assets assumption for Linde's most significant plans is anticipated to more than offset the expense from service and interest cost accruals and the higher amortization of deferred losses.

Refer to the Critical Accounting Estimates section and Note 16 to the consolidated financial statements for a more detailed discussion of the company's retirement benefits, including a description of the various retirement plans and the assumptions used in the calculation of net periodic benefit cost (benefit) and funded status.

Insurance

Linde purchases insurance to limit a variety of property and casualty risks, including those related to property, business interruption, third-party liability and workers' compensation. Currently, the company self retains up to $10 million per occurrence for vehicle liability in the United States, $5 million per occurrence for workers' compensation and general liability. In addition, the company self retains risk up to €5 million at its various properties worldwide for property damage resulting from fire, flood and other perils affecting its properties along with a separate €5 million deductible on all business interruption resulting from a major peril loss. To mitigate its aggregate loss potential above these retentions, the company purchases catastrophic insurance coverage from highly rated insurance companies. The company does not currently operate or participate in any captive insurance companies or other non-traditional risk transfer alternatives.

At December 31, 2022 and 2021, the company had recorded a total of $71 million and $75 million, respectively, representing an estimate of the retained liability for the ultimate cost of claims incurred and unpaid as of the balance sheet dates. The estimated liability is established using statistical analysis and is based upon historical experience, actuarial assumptions and professional judgment. These estimates are subject to the effects of trends in loss severity and frequency and are subject to a significant degree of inherent variability. If actual claims differ from the company's estimates, they will be adjusted at that time and financial results could be impacted.

Linde recognizes estimated insurance proceeds relating to damages at the time of loss only to the extent of incurred losses. Any insurance recoveries for business interruption and for property damages in excess of the net book value of the property are recognized only when realized or pending payments confirmed by its insurance companies.

SEGMENT DISCUSSION

Linde's operations consist of two major product lines: industrial gases and engineering. As further described in the following paragraph, Linde's industrial gases operations are managed on a geographic basis, which represents three of the company's reportable segments - Americas, EMEA (Europe/Middle East/Africa), and APAC (Asia/South Pacific); a fourth reportable segment, which represents the company's Engineering business, designs and manufactures equipment for air separation and other industrial gas applications specifically for end customers and is managed on a worldwide basis operating in all geographic segments. Other consists of corporate costs and a few smaller businesses which individually do not meet the quantitative thresholds for separate presentation.

The industrial gases product line centers on the manufacturing and distribution of atmospheric gases (oxygen, nitrogen, argon, rare gases) and process gases (carbon dioxide, helium, hydrogen, electronic gases, specialty gases, acetylene). Many of these products are co-products of the same manufacturing process. Linde manufactures and distributes nearly all of its products and manages its customer relationships on a regional basis. Linde's industrial gases are distributed to various end-markets within a regional segment through one of three basic distribution methods: on-site or tonnage; merchant or bulk; and packaged or cylinder gases. The distribution methods are generally integrated in order to best meet the customer's needs and very few of its products can be economically transported outside of a region. Therefore, the distribution economics are specific to the various geographies in which the company operates and are consistent with how management assesses performance.

The company's measure of profit/loss for segment reporting purposes is segment operating profit. Segment operating profit is defined as operating profit excluding purchase accounting impacts of the Linde AG merger, intercompany royalties, and items not indicative of ongoing business trends. This is the manner in which the company's Chief Operating Decision Maker ("CODM") assesses performance and allocates resources.

The table below presents sales and operating profit information about reportable segments and Other for the years ended December 31, 2022 and 2021.

(*Millions of dollars*) **Year Ended December 31,**	**2022**	**2021**	**Variance**
Sales			
Americas	$ 13,874	$ 12,103	15%
EMEA	8,443	7,643	10%
APAC	6,480	6,133	6%
Engineering	2,762	2,867	(4)%
Other	1,805	2,047	(12)%
Total sales	$ 33,364	$ 30,793	8%
Operating Profit			
Americas	$ 3,732	$ 3,368	11%
EMEA	2,013	1,889	7%
APAC	1,670	1,502	11%
Engineering	555	473	17%
Other	(66)	(56)	(18)%
Segment operating profit	7,904	7,176	10%
Reconciliation to reported operating profit :			
Russia-Ukraine conflict and other charges (Note 3)	(1,029)	(273)	
Purchase accounting impacts – Linde AG	(1,506)	(1,919)	
Total operating profit	$ 5,369	$ 4,984	

Americas

(Dollar amounts in millions) Year Ended December 31,	2022	2021	Variance 2022 vs. 2021
Sales	$ 13,874	$ 12,103	15%
Operating profit	$ 3,732	$ 3,368	11%
As a percent of sales	26.9%	27.8%	

	2022 vs. 2021 % Change
Factors Contributing to Changes - Sales	
Volume	4%
Price/Mix	6%
Cost pass-through	5%
Currency	—%
Acquisitions/Divestitures	—%
	15%

The Americas segment includes Linde's industrial gases operations in approximately 20 countries including the United States, Canada, Mexico and Brazil.

Sales

Sales for the Americas segment increased $1,771 million, or 15%, in 2022 versus 2021. Higher pricing contributed 6% to sales. Higher volumes increased sales by 4%, driven by higher demand across all end markets except healthcare, led by chemicals and energy. Cost past-through increased sales by 5% with minimal impact on operating profit.

Operating Profit

Operating profit in the Americas segment increased $364 million, or 11%, in 2022 versus 2021 driven primarily by higher pricing, volumes and continued productivity initiatives which more than offset inflation.

EMEA

(Dollar amounts in millions) Year Ended December 31,	2022	2021	Variance 2022 vs. 2021
Sales	$ 8,443	$ 7,643	10%
Operating profit	$ 2,013	$ 1,889	7%
As a percent of sales	23.8%	24.7%	

	2022 vs. 2021 % Change
Factors Contributing to Changes - Sales	
Volume	(3)%
Price/Mix	13 %
Cost pass-through	13 %
Currency	(11)%
Acquisitions/Divestitures	(2)%
	10 %

The EMEA segment includes Linde's industrial gases operations in approximately 45 European, Middle Eastern and African countries including Germany, the U.K., France, Sweden and the Republic of South Africa.

Sales

EMEA segment sales increased $800 million, or 10%, in 2022 versus 2021. Higher price attainment increased sales by 13%. Cost pass-through, representing the contractual billing of energy cost variances primarily to onsite customers, increased sales by 13% with minimal impact on operating profit. Currency translation decreased sales by 11% due largely to the weakening of the Euro and British pound against the U.S. Dollar. Volume decreased sales by 3%. The impact of net divestitures decreased sales by 2% primarily due to the deconsolidation of Russian subsidiaries as of June 30, 2022.

Operating Profit

Operating Profit for the EMEA segment increased $124 million, or 7%, in 2022 versus 2021. The increase was driven largely by higher pricing and continued productivity initiatives which more than offset currency, inflation and divestitures.

APAC

(Dollar amounts in millions)			Variance
Year Ended December 31,	**2022**	**2021**	**2022 vs. 2021**
Sales	$ 6,480	$ 6,133	6%
Operating profit	$ 1,670	$ 1,502	11%
As a percent of sales	25.8%	24.5%	

	2022 vs. 2021 % Change
Factors Contributing to Changes - Sales	
Volume/Equipment	5 %
Price/Mix	5 %
Cost pass-through	2 %
Currency	(6)%
Acquisitions/Divestitures	—%
	6 %

The APAC segment includes Linde's industrial gases operations in approximately 20 Asian and South Pacific countries and regions including China, Australia, India and South Korea.

Sales

Sales for the APAC segment increased $347 million, or 6%, in 2022 versus 2021. Volume increased 5% including project start-ups in the electronics and chemicals and energy end markets. Higher price increased sales by 5%. Cost pass-through increased sales by 2% with minimal impact on operating profit. Currency translation decreased sales by 6% driven primarily by the weakening of the Australian dollar, Korean won and Chinese Yuan against the U.S. Dollar.

Operating Profit

Operating profit in the APAC segment increased $168 million, or 11%, in 2022 versus 2021. The increase was primarily driven by higher volumes and pricing and continued productivity initiatives which more than offset the impact of currency and inflation.

Engineering

(Dollar amounts in millions)			Variance
Year Ended December 31,	**2022**	**2021**	**2022 vs. 2021**
Sales	$ 2,762	$ 2,867	(4)%
Operating profit	$ 555	$ 473	17%
As a percent of sales	20.1%	16.5%	

	2022 vs. 2021 % Change
Factors Contributing to Changes - Sales	
Volume	5 %
Currency	(9)%
	(4)%

Sales

Engineering segment sales decreased $105 million, or 4%, in 2022 versus 2021 . The decrease was driven by project timing and negative currency translation, partially offset by a $321 million project progress recognition during the third quarter.

Projects for Russia that were sanctioned and have been wound down represented approximately $894 million of the Engineering segment sales during 2022.

Operating profit

Engineering segment operating profit increased $82 million, or 17%, in 2022 versus 2021 driven by the aforementioned third quarter project and a fourth quarter project settlement, partially offset by other project timing and currency impacts.

Other

(Dollar amounts in millions)			Variance
Year Ended December 31,	**2022**	**2021**	**2022 vs. 2021**
Sales	$ 1,805	$ 2,047	(12)%
Operating profit	$ (66)	$ (56)	(18)%
As a percent of sales	(3.7)%	(2.7)%	

	2022 vs. 2021 % Change
Factors Contributing to Changes - Sales	
Volume/Price	3 %
Cost pass-through	1 %
Currency	(4)%
Acquisitions/Divestitures	(12)%
	(12)%

Other consists of corporate costs and a few smaller businesses including: Surface Technologies, GIST and global helium wholesale; which individually do not meet the quantitative thresholds for separate presentation.

Sales

Sales for Other decreased $242 million, or 12%, in 2022 versus 2021. Divestitures decreased sales by 12% due primarily to the sale of the GIST business as of September 30, 2022. Currency translation decreased sales by 4%. Underlying sales increased 3% in the year driven primarily by price and higher volumes of aviation and electronic sales in the coatings business. Cost pass-through increased sales by 1% in 2022.

Sales of the GIST business which was divested as of September 30, 2022 represented approximately $630 million of Other sales during the nine months ended September 30, 2022.

Operating profit

Operating profit in Other decreased $10 million, or 18%, in 2022 versus 2021 due primarily to higher sourcing costs in the global helium business and the impact of divestitures, partially offset by lower corporate costs .

Currency

The results of Linde's non-U.S. operations are translated to the company's reporting currency, the U.S. dollar, from the functional currencies used in the countries in which the company operates. For most foreign operations, Linde uses the local currency as its functional currency. There is inherent variability and unpredictability in the relationship of these functional currencies to the U.S. dollar and such currency movements may materially impact Linde's results of operations in any given period.

To help understand the reported results, the following is a summary of the significant currencies underlying Linde's consolidated results and the exchange rates used to translate the financial statements (rates of exchange expressed in units of local currency per U.S. dollar):

	Percent of 2022 Consolidated	Statements of Income		Balance Sheets	
		Average Year Ended December 31,		December 31,	
Currency	Sales	2022	2021	2022	2021
Euro	21%	0.95	0.85	0.93	0.88
Chinese yuan	8%	6.72	6.45	6.90	6.36
British pound	6%	0.81	0.73	0.83	0.74
Australian dollar	4%	1.44	1.33	1.47	1.38
Brazilian real	4%	5.16	5.39	5.28	5.58
Korean won	3%	1,286	1,144	1,266	1,189
Canadian dollar	3%	1.36	1.25	1.36	1.26
Mexican peso	2%	20.10	20.28	19.50	20.53
Indian rupee	2%	78.49	73.91	82.73	74.34
Republic of South African rand	1%	16.30	14.77	17.04	15.94
Swedish krona	1%	10.08	8.58	10.43	9.05
Thailand bhat	1%	34.96	31.93	34.61	33.40

LIQUIDITY, CAPITAL RESOURCES AND OTHER FINANCIAL DATA

(Millions of dollars) **Year Ended December 31,**	**2022**	**2021**
Net Cash Provided by (Used for)		
Operating Activities		
Income from continuing operations (including noncontrolling interests)	$ 4,281	$ 3,956
Non-cash charges (credits):		
Add: Russia-Ukraine and other charges, net of payments (a)	902	98
Add: Depreciation and amortization	4,204	4,635
Add (Less): Deferred income taxes	(383)	(254)
Add (Less): Non-cash charges and other	58	109
Income from continuing operations adjusted for non-cash charges and other	9,062	8,544
Less: Pension contributions	(51)	(42)
Add (Less): Working capital	(310)	1,148
Add (Less): Other	163	75
Net cash provided by (used for) operating activities	$ 8,864	$ 9,725
Investing Activities		
Capital expenditures	$ (3,173)	$ (3,086)
Acquisitions, net of cash acquired	(110)	(88)
Divestitures and asset sales, net of cash divested	195	167
Net cash provided by (used for) investing activities	$ (3,088)	$ (3,007)
Financing Activities		
Debt increases (decreases) – net	$ 4,475	$ (514)
Issuances (purchases) of ordinary shares – net	(5,132)	(4,562)
Cash dividends – Linde plc shareholders	(2,344)	(2,189)
Noncontrolling interest transactions and other	(88)	(323)
Net cash provided by (used for) financing activities	$ (3,089)	$ (7,588)
Effect of exchange rate changes on cash	$ (74)	$ (61)
Cash and cash equivalents, end-of-period	$ 5,436	$ 2,823

(a) See Note 3 to the consolidated financial statements.

Cash increased $2,613 million in 2022 versus 2021. The primary sources of cash in 2022 were cash flows from operations of $8,864 million and debt borrowings, net of $4,475 million. The primary uses of cash included capital expenditures of $3,173 million, net purchases of ordinary shares of $5,132 million, cash dividends to shareholders of $2,344 million.

2022 compared with 2021

Cash Flows From Operations

Cash flows from operations was $8,864 million, a decrease of $861 million from 2021. The decrease was driven primarily by higher working capital requirements, including lower inflows from contract liabilities from engineering customer advanced payments, partially offset by higher net income adjusted for non cash charges. Russia-Ukraine conflict and other charges, net of payments, were $902 million and $98 million for the years ended December 31, 2022 and 2021, respectively, representing charges of $1,029 million and $273 million net of related cash outflows of $127 million and $175 million, respectively, in each period.

As of December 31, 2022, Linde has approximately $1.7 billion recorded in contract liabilities within the consolidated balance sheet related to engineering projects in Russia. Any obligation to satisfy the related residual contract liabilities may have an adverse effect on Linde's cash flows.

Investing

Net cash used for investing activities was $3,088 million in 2022 compared to $3,007 million in 2021. The increase was primarily driven by higher capital expenditures and acquisitions, partially offset by proceeds from divestitures, net of cash divested and asset sales.

Capital expenditures in 2022 were $3,173 million, an increase of $87 million from 2021. Capital expenditures during 2022 related primarily to investments in new plant and production equipment for operating and growth requirements. Approximately 52% of the capital expenditures were in the Americas segment with 27% in the APAC segment and the rest primarily in the EMEA segment.

At December 31, 2022 , Linde's sale of gas backlog of large projects under construction was approximately $5.7 billion. This represents the total estimated capital cost of large plants under construction.

Acquisitions, net of cash acquired for 2022 were $110 million, an increase of $22 million from 2021. Acquisitions, net of cash acquired for the year ended December 31, 2021 were $88 million. Acquisitions in each period related primarily to the Americas and EMEA. On January 6, 2023, Linde purchased the remaining 77.2% ownership interest in nexAir, LLC in an all cash transaction with a total purchase price of approximately $0.8 billion (see Note 20 to the consolidated financial statements).

Divestitures and asset sales, net of cash divested in 2022 were $195 million as compared to $167 million in 2021. Divestiture proceeds for the year include cash received from the sale of the company's GIST business of $184 million, net of cash divested of $75 million, for net proceeds of $109 million (See Note 2 to the consolidated financial statements).

Financing

Linde's financing strategy is to secure long-term committed funding by issuing public notes and debentures and commercial paper backed by a long-term bank credit agreement. Linde's international operations are funded through a combination of local borrowing and intercompany funding to minimize the total cost of funds and to manage and centralize currency exchange exposures. As deemed necessary, Linde manages its exposure to interest-rate changes through the use of financial derivatives (see Note 12 to the consolidated financial statements and Item 7A. Quantitative and Qualitative Disclosures About Market Risk).

Cash used for financing activities was $3,089 million in 2022 compared to $7,588 million in 2021. Cash provided by debt was $4,475 million in 2022 versus cash used for debt of $514 million in 2021 primarily driven by higher commercial paper borrowings and debt issuances in 2022. Net purchases of ordinary shares were $5,132 million in 2022 versus $4,562 million in 2021. Cash dividends increased to $2,344 million in 2022 versus $2,189 million in 2021 driven primarily by a 10% increase in dividends per share to $4.68 per share from $4.24 per share, partially offset by lower shares outstanding. Cash used for Noncontrolling interest transactions and other was $88 million for the year ended December 31, 2022 versus cash used of $323 million for the respective 2021 period primarily due to the settlement of the buyout of minority interests in the Republic of South Africa in 2021.

The company believes that it has sufficient operating flexibility, cash reserves, and funding sources to maintain adequate amounts of liquidity to meet its business needs around the world. At December 31, 2022, Linde's credit ratings as reported by Standard & Poor's and Moody's were A-1 and P-1 for short-term debt, respectively, and A and A2 for long-term debt, respectively.

Note 11 to the consolidated financial statements includes information with respect to the company's debt activity in 2022, current debt position, debt covenants and the available credit facilities; and Note 12 includes information relating to derivative financial instruments. Linde's credit facilities are with major financial institutions and are non-cancelable until maturity. Therefore, the company believes the risk of the financial institutions being unable to make required loans under the credit facilities, if requested, to be low. Linde's major bank credit and long-term debt agreements contain standard covenants. The company was in compliance with these covenants at December 31, 2022 and expects to remain in compliance for the foreseeable future.

The company maintains a $5 billion and a $1.5 billion unsecured and undrawn revolving credit agreements with no associated financial covenants. No borrowings were outstanding under the credit agreements as of December 31, 2022. The company does not anticipate any limitations on its ability to access the debt capital markets and/or other external funding sources and remains committed to its strong ratings from Moody's and Standard & Poor's.

Linde's total net debt outstanding at December 31, 2022 was $12,478 million, $1,094 million higher than $11,384 million at December 31, 2021. The December 31, 2022 net debt balance includes $17,561 million in public securities, and $353 million representing primarily worldwide bank borrowings, net of $5,436 million of cash. Linde's global effective borrowing rate was approximately 1.7% for 2022.

In January 2022, Linde repaid €1.0 billion of 0.250% notes that became due. In March 2022, Linde issued €500 million of 1.000% notes due 2027, €750 million of 1.375% notes due 2031, and €800 million of 1.625% notes due 2035. In May 2022, Linde repaid $500 million of 2.20% notes due in August 2022. In November 2022, Linde issued $300 million of 4.80% notes due in 2024 and $600 million of 4.70% notes due in 2025.

On February 28, 2022, the company's Board of Directors approved the additional repurchase of $10.0 billion of its ordinary shares. For additional information related to the share repurchase programs, see Part II Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

OFF-BALANCE SHEET ARRANGEMENTS

As discussed in Note 17 to the consolidated financial statements, at December 31, 2022, Linde had undrawn outstanding letters of credit, bank guarantees and surety bonds entered into in connection with normal business operations and they are not reasonably likely to have a material impact on Linde's consolidated financial condition, results of operations, or liquidity.

CRITICAL ACCOUNTING ESTIMATES

The policies discussed below are considered by management to be critical to understanding Linde's financial statements and accompanying notes prepared in accordance with accounting principles generally accepted in the United States ("U.S. GAAP"). Their application places significant importance on management's judgment as a result of the need to make estimates of matters that are inherently uncertain. Linde's financial position, results of operations and cash flows could be materially affected if actual results differ from estimates made. These policies are determined by management and have been reviewed by Linde's Audit Committee.

Revenue Recognition

Long-Term Construction Contracts

The company designs and manufactures equipment for air separation and other varied gas production and processing plants manufactured specifically for end customers. Revenues for sale of equipment contracts are generally recognized over time as Linde has an enforceable right to payment for performance completed to date and performance does not create an asset with alternative use. For contracts recognized over time, revenue is recognized primarily using a cost incurred input method. Costs incurred to date relative to total estimated costs at completion are used to measure progress toward satisfying performance obligations. The result is applied to total expected revenue and results in financial statement recognition of revenue in addition to costs incurred to date. Any expected loss on a contract is recognized as an expense immediately. Contract modifications are typically accounted for as part of the existing contract and are recognized as a cumulative adjustment for the inception-to-date effect of such change. We assess performance as progress towards completion is achieved on specific projects, earnings will be impacted by changes to our forecast of revenues and costs on these projects.

The cost incurred input method places considerable importance on accurate estimates of the extent of progress towards completion and may involve estimates on the scope of deliveries and services required to fulfill the contractually defined obligations. The key source of estimation uncertainty is the total estimated costs at completion including material, labor and overhead costs and the resultant state of completion of the contracts. There are inherent uncertainties associated with the estimation process, including technical complexity, duration of construction cycle, potential cost inflation (whether equipment or manpower), and scope considerations all of which may affect the total estimation process. Changes in these estimates may lead to a significant impact on future financial statements.

Pension Benefits

Pension benefits represent financial obligations that will be ultimately settled in the future with employees who meet eligibility requirements. Because of the uncertainties involved in estimating the timing and amount of future payments, significant estimates are required to calculate pension expense and liabilities related to the company's plans. The company utilizes the services of independent actuaries, whose models are used to facilitate these calculations.

Several key assumptions are used in actuarial models to calculate pension expense and liability amounts recorded in the financial statements. Management believes the three most significant variables in the models are the expected long-term rate of return on plan assets, the discount rate, and the expected rate of compensation increase. The actuarial models also use assumptions for various other factors, including long-term inflation rates, employee turnover, retirement age, and mortality. Linde management believes the assumptions used in the actuarial calculations are reasonable, reflect the company's experience and expectations for the future and are within accepted practices in each of the respective geographic locations in which it operates. Actual results in any given year will often differ from actuarial assumptions because of economic and other factors. The sensitivities to each of the key assumptions presented below exclude the impact of special items that occurred during the year.

The weighted-average expected long-term rates of return on pension plan assets were 7.00% for U.S. plans and 5.60% for non-U.S. plans for the year ended December 31, 2022 (7.00% and 5.28%, respectively at December 31, 2021). The expected long-term rate of return on the U.S. and Non-U.S. plan assets is estimated based on the plans' investment strategy and asset allocation, historical capital market performance and, to a lesser extent, historical plan performance. A 0.50% change in these expected long-term rates of return, with all other variables held constant, would change Linde's pension expense by approximately $44 million.

The company has consistently used a market-related value of assets rather than the fair value at the measurement date to determine annual pension expense. The market-related value recognizes investment gains or losses over a five-year period. As a result, changes in the fair value of assets from year to year are not immediately reflected in the company's annual pension expense. Instead, annual pension expense in future periods will be impacted as deferred investment gains or losses are recognized in the market-related value of assets over the five-year period. The consolidated market-related value of assets was $8,898 million, or $1,213 million higher than the fair value of assets of $7,685 million at December 31, 2022. These net deferred investment gains of $1,213 million will be recognized in the calculation of the market-related value of assets ratably over the next four years and will impact future pension expense. Future actual investment gains or losses will impact the market-related value of assets and, therefore, will impact future annual pension expense in a similar manner.

Discount rates are used to calculate the present value of plan liabilities and pension costs and are determined annually by management. The company measures the service and interest cost components of pension and OPEB expense for significant U.S. and non-U.S. plans using the spot rate approach. U.S. plans that do not use the spot rate approach continue to determine discount rates by using a cash flow matching model provided by the company's independent actuaries. The model includes a portfolio of corporate bonds graded Aa or better by at least half of the ratings agencies and matches the U.S. plans' projected cash flows to the calculated spot rates. Discount rates for the remaining Non-U.S. plans are based on market yields for high-quality fixed income investments representing the approximate duration of the pension liabilities on the measurement date. Refer to Note 16 to the consolidated financial statements for a summary of the discount rates used to calculate plan liabilities and benefit costs, and to the Retirement Benefits section of the Consolidated Results and Other Information section of this MD&A for a further discussion of 2022 benefit costs. A 0.50% reduction in discount rates, with all other variables held constant, would increase Linde's pension expense by approximately $22 million whereas a 0.50% increase in discount rates would result in a decrease of $96 million. A 0.50% reduction in discount rates would increase the PBO by approximately $462 million whereas a 0.50% increase in discount rates would have a favorable impact to the PBO of approximately $417 million.

The weighted-average expected rate of compensation increase was 3.25% for U.S. plans and 2.59% for non-U.S. plans at December 31, 2022 (3.25% and 2.55%, respectively, at December 31, 2021). The estimated annual compensation increase is determined by management every year and is based on historical trends and market indices. A 0.50% change in the expected rate of compensation increase, with all other variables held constant, would change Linde's pension expense by approximately $6 million and would impact the PBO by approximately $28 million.

Asset Impairments

Goodwill and Other Indefinite-Lived Intangibles Assets

At December 31, 2022, the company had goodwill of $25,817 million and $1,706 million of other indefinite-lived intangible assets. Goodwill represents the aggregate of the excess consideration paid for acquired businesses over the fair value of the net assets acquired. Indefinite-lived other intangibles relate to the Linde name.

The company performs a goodwill impairment test annually as of October 1 or more frequently if events or circumstances indicate that an impairment loss may have been incurred. The impairment test performed during the fourth quarter of 2022 indicated no impairment. At December 31, 2022, Linde's enterprise value was approximately $173 billion (outstanding shares multiplied by the year-end stock price plus net debt, and without any control premium) while its total capital was approximately $54 billion.

The impairment test allows an entity to first assess qualitative factors to determine if it is more likely than not that the fair value of a reporting unit is less than carrying value. If it is determined that it is more likely than not that the fair value of a reporting unit is less than carrying value then the company will estimate and compare the fair value of its reporting units to their carrying value, including goodwill. Reporting units are determined based on one level below the operating segment level.

Management believes that the quantitative and qualitative factors used to perform its annual goodwill impairment assessment are appropriate and reasonable. Although the 2022 assessment indicated that it is more likely than not that the fair value of each reporting unit exceeded its carrying value, changes in circumstances or conditions affecting this analysis could have a significant impact on the fair value determination, which could then result in a material impairment charge to the company's results of operations. Reporting units with greater concentration of Linde AG assets fair valued during the 2018 Praxair, Inc. and Linde AG merger are at greater risk of impairment in future periods.

Other indefinite-lived intangible assets are evaluated for impairment on an annual basis or more frequently if events and circumstances indicate that an impairment loss may have been incurred, and no impairments were indicated.

See Notes 9 and 10 to the consolidated financial statements.

Long-Lived Assets

Long-lived assets, including property, plant and equipment and finite-lived other intangible assets, are tested for impairment whenever events or changes in circumstances indicate that the carrying amount of an individual asset or asset group may not be recoverable. For purposes of this test, asset groups are determined based upon the lowest level for which there are independent and identifiable cash flows. Based upon Linde's business model an asset group may be a single plant and related assets used to support on-site, merchant and packaged gas customers. Alternatively, the asset group may be a collection of distribution related assets (cylinders, distribution centers, and stores) or be a pipeline complex which includes multiple interdependent plants and related assets connected by pipelines within a geographic area used to support the same distribution methods. As a result of the Russia-Ukraine conflict, Linde deconsolidated its Russian gas and engineering business entities as of June 30, 2022. See Note 3 to the consolidated financial statements.

Income Taxes

At December 31, 2022, Linde had deferred tax assets of $1,247 million (net of valuation allowances of $276 million), and deferred tax liabilities of $6,903 million. At December 31, 2022, uncertain tax positions totaled $325 million (see Note 1 and Note 5 to the consolidated financial statements). Income tax expense was $1,434 million for the year ended December 31, 2022, or about 25.9% of pre-tax income (see Note 5 to the consolidated financial statements for additional information related to taxes).

In the preparation of consolidated financial statements, Linde estimates income taxes based on diverse legislative and regulatory structures that exist in various jurisdictions where the company conducts business. Deferred income tax assets and liabilities represent tax benefits or obligations that arise from temporary differences due to differing treatment of certain items for accounting and income tax purposes. Linde evaluates deferred tax assets each period to ensure that estimated future taxable income will be sufficient in character (e.g. capital gain versus ordinary income treatment), amount and timing to result in their recovery. A valuation allowance is established when management determines that it is more likely than not that a deferred tax asset will not be realized to reduce the assets to their realizable value. Considerable judgments are required in establishing deferred tax valuation allowances and in assessing exposures related to tax matters. As events and circumstances change, related reserves and valuation allowances are adjusted to income at that time. Linde's tax returns are subject to audit and local taxing authorities could challenge the company's tax positions. The company's practice is to review tax filing positions by jurisdiction and to record provisions for uncertain income tax positions, including interest and penalties when applicable. Linde believes it records and/or discloses such potential tax liabilities as appropriate and has reasonably estimated its income tax liabilities and recoverable tax assets. If new information becomes available, adjustments are charged or credited against income at that time. Management does not anticipate that such adjustments would have a material adverse effect on the company's consolidated financial position or liquidity; however, it is possible that the final outcomes could have a material impact on the company's reported results of operations.

Contingencies

The company accrues liabilities for non-income tax contingencies when management believes that a loss is probable and the amounts can be reasonably estimated, while contingent gains are recognized only when realized or realizable. If new information becomes available or losses are sustained in excess of recorded amounts, adjustments are charged against income at that time. Management does not anticipate that in the aggregate such losses would have a material adverse effect on the company's consolidated financial position or liquidity; however, it is possible that the final outcomes could have a material impact on the company's reported results of operations.

Linde is subject to various claims, legal proceedings and government investigations that arise from time to time in the ordinary course of business. These actions are based upon alleged environmental, tax, antitrust and personal injury claims, among others (see Note 17 to the consolidated financial statements). Such contingencies are significant and the accounting requires considerable management judgments in analyzing each matter to assess the likely outcome and the need for establishing appropriate liabilities and providing adequate disclosures. Linde believes it records and/or discloses such contingencies as appropriate and has reasonably estimated its liabilities.

NEW ACCOUNTING STANDARDS

See Note 1 to the consolidated financial statements for information concerning new accounting standards and the impact of the implementation of these standards on the company's financial statements.

FAIR VALUE MEASUREMENTS

Linde does not expect changes in the aggregate fair value of its financial assets and liabilities to have a material impact on the consolidated financial statements. See Note 13 to the consolidated financial statements.

NON-GAAP FINANCIAL MEASURES

The following non-GAAP measures are intended to supplement investors' understanding of the company's financial information by providing measures which investors, financial analysts and management use to help evaluate the company's financial leverage and operating performance. Special items which the company does not believe to be indicative of on-going business performance are excluded from these calculations so that investors can better evaluate and analyze historical and future business trends on a consistent basis. Definitions of these non-GAAP measures may not be comparable to similar definitions used by other companies and are not a substitute for similar GAAP measures.

The non-GAAP measures in the following reconciliations are presented in this MD&A.

Adjusted Amounts

(Dollar amounts in millions, except per share data)

Year Ended December 31,	**2022**	**2021**
Adjusted Operating Profit and Operating Margin		
Reported operating profit	$ 5,369	$ 4,984
Add: Russia-Ukraine conflict and other charges (a)	1,029	273
Add: Purchase accounting impacts – Linde AG (c)	1,506	1,919
Total adjustments	2,535	2,192
Adjusted operating profit	$ 7,904	$ 7,176
Reported percentage change	8 %	
Adjusted percentage change	10 %	
Reported sales	$ 33,364	$ 30,793
Reported operating margin	16.1 %	16.2 %
Adjusted operating margin	23.7 %	23.3 %
Adjusted Depreciation and amortization		
Reported depreciation and amortization	$ 4,204	$ 4,635
Less: Purchase accounting impacts – Linde AG (c)	(1,481)	(1,863)
Adjusted depreciation and amortization	$ 2,723	$ 2,772
Adjusted Other Income (Expense) – net		
Reported Other Income (Expense) – net	$ (62)	$ (26)
Add: Purchase accounting impacts – Linde AG (c)	(25)	(56)
Adjusted Other Income (Expense) – net	$ (37)	$ 30
Adjusted Net Pension and OPEB Cost (Benefit), Excluding Service Cost		
Reported net pension and OPEB cost (benefit), excluding service cost	$ (237)	$ (192)
Add: Pension settlement charges	(6)	(4)
Adjusted Net Pension and OPEB cost (benefit), excluding service costs	$ (243)	$ (196)
Adjusted Interest Expense – Net		
Reported interest expense – net	$ 63	$ 77
Add: Purchase accounting impacts – Linde AG (c)	35	53
Adjusted interest expense – net	$ 98	$ 130
Adjusted Income Taxes (a)		
Reported income taxes	$ 1,434	$ 1,262
Add: Purchase accounting impacts – Linde AG (c)	374	452
Add: Pension settlement charges	1	1
Add: Russia-Ukraine conflict and other charges (a)	136	29
Total adjustments	511	482
Adjusted income taxes	$ 1,945	$ 1,744

(Dollar amounts in millions, except per share data)

Year Ended December 31,	2022	2021
Adjusted Effective Tax Rate (a)		
Reported income before income taxes and equity investments	$ 5,543	$ 5,099
Add: Pension settlement charge	6	4
Add: Purchase accounting impacts – Linde AG (c)	1,471	1,866
Add: Russia-Ukraine conflict and other charges (a)	1,029	273
Total adjustments	2,506	2,143
Adjusted income before income taxes and equity investments	$ 8,049	$ 7,242
Reported Income taxes	$ 1,434	$ 1,262
Reported effective tax rate	25.9 %	24.7 %
Adjusted income taxes	$ 1,945	$ 1,744
Adjusted effective tax rate	24.2 %	24.1 %
Income from Equity Investments		
Reported income from equity investments	$ 172	$ 119
Add: Russia-Ukraine conflict and other charges (d)	—	35
Add: Purchase accounting impacts – Linde AG (c)	75	77
Total adjustments	75	112
Adjusted income from equity investments	$ 247	$ 231
Adjusted Noncontrolling Interests from Continuing Operations		
Reported noncontrolling interests from continuing operations	$ (134)	$ (135)
Add: Purchase accounting impacts – Linde AG (c)	(22)	(15)
Adjusted noncontrolling interests from continuing operations	$ (156)	$ (150)
Adjusted Income from Continuing Operations (b)		
Reported income from continuing operations	$ 4,147	$ 3,821
Add: Pension settlement charge	5	3
Add: Russia-Ukraine conflict and other charges (a)	893	279
Add: Purchase accounting impacts – Linde AG (c)	1,150	1,476
Total adjustments	2,048	1,758
Adjusted income from continuing operations	$ 6,195	$ 5,579
Adjusted Diluted EPS from Continuing Operations (b)		
Reported diluted EPS from continuing operations	$ 8.23	$ 7.32
Add: Pension settlement charge	0.01	0.01
Add: Russia-Ukraine conflict and other charges (a)	1.77	0.53
Add: Purchase accounting impacts – Linde AG (c)	2.28	2.83
Total adjustments	4.06	3.37
Adjusted diluted EPS from continuing operations	$ 12.29	$ 10.69
Reported percentage change	12 %	
Adjusted percentage change	15 %	

(Dollar amounts in millions, except per share data)

Year Ended December 31,	2022	2021
Adjusted EBITDA and % of Sales		
Income from continuing operations	$ 4,147	$ 3,821
Add: Noncontrolling interests related to continuing operations	134	135
Add: Net pension and OPEB cost (benefit), excluding service cost	(237)	(192)
Add: Interest expense	63	77
Add: Income taxes	1,434	1,262
Add: Depreciation and amortization	4,204	4,635
EBITDA from continuing operations	9,745	9,738
Add: Russia-Ukraine conflict and other charges (a)	1,029	308
Add: Purchase accounting impacts – Linde AG (c)	99	133
Total adjustments	1,128	441
Adjusted EBITDA from continuing operations	$ 10,873	$ 10,179
Reported sales	$ 33,364	$ 30,793
% of sales		
EBITDA from continuing operations	29.2 %	31.6 %
Adjusted EBITDA from continuing operations	32.6 %	33.1 %

(a) The income tax expense (benefit) on the non-GAAP pre-tax adjustments was determined using the applicable tax rates for the jurisdictions that were utilized in calculating the GAAP income tax expense (benefit) and included both current and deferred income tax amounts.

(b) Net of income taxes which are shown separately in "Adjusted Income Taxes and Effective Tax Rate".

(c) The company believes that its non-GAAP measures excluding Purchase accounting impacts – Linde AG are useful to investors because: (i) the business combination was a merger of equals in an all-stock merger transaction, with no cash consideration, (ii) the company is managed on a geographic basis and the results of certain geographies are more heavily impacted by purchase accounting than others, causing results that are not comparable at the reportable segment level, therefore, the impacts of purchasing accounting adjustments to each segment vary and are not comparable within the company and when compared to other companies in similar regions, (iii) business management is evaluated and variable compensation is determined based on results excluding purchase accounting impacts, and; (iv) it is important to investors and analysts to understand the purchase accounting impacts to the financial statements.

A summary of each of the adjustments made for Purchase accounting impacts – Linde AG are as follows:

Adjusted Operating Profit and Margin: The purchase accounting adjustments for the periods presented relate primarily to depreciation and amortization related to the fair value step up of fixed assets and intangible assets (primarily customer related) acquired in the merger and the allocation of fair value step-up for ongoing Linde AG asset disposals (reflected in Other Income/(Expense)).

Adjusted Interest Expense – Net: Relates to the amortization of the fair value of debt acquired in the merger.

Adjusted Income Taxes and Effective Tax Rate: Relates to the current and deferred income tax impact on the adjustments discussed above. The income tax expense (benefit) on the non-GAAP pre-tax adjustments was determined using the applicable tax rates for the jurisdictions that were utilized in calculating the GAAP income tax expense (benefit) and included both current and deferred income tax amounts.

Adjusted Income from Equity Investments: Represents the amortization of increased fair value on equity investments related to depreciable and amortizable assets.

Adjusted Noncontrolling Interests from Continuing Operations: Represents the noncontrolling interests' ownership portion of the adjustments described above determined on an entity by entity basis.

(d) Impairment charge related to a joint venture in the APAC segment.

Net Debt and Adjusted Net Debt

Net debt is a financial liquidity measure used by investors, financial analysts and management to evaluate the ability of a company to repay its debt. Purchase accounting impacts have been excluded as they are non-cash and do not have an impact on liquidity.

(Millions of dollars)	December 31, 2022	December 31, 2021
Debt	$ 17,914	$ 14,207
Less: cash and cash equivalents	(5,436)	(2,823)
Net debt	12,478	11,384
Less: purchase accounting impacts – Linde AG	(22)	(61)
Adjusted net debt	$ 12,456	$ 11,323

SUPPLEMENTAL GUARANTEE INFORMATION

On June 6, 2020, the company filed a Form S-3 Registration Statement with the SEC (the "Registration Statement").

Linde plc may offer debt securities, preferred shares, depositary shares and ordinary shares under the Registration Statement, and debt securities exchangeable for or convertible into preferred shares, ordinary shares or other debt securities. Debt securities of Linde plc may be guaranteed by Linde Inc. (previously Praxair, Inc.) and/or Linde GmbH (previously Linde AG). Linde plc may provide guarantees of debt securities offered by its wholly owned subsidiaries Linde Inc. or Linde Finance under the Registration Statement.

Linde Inc. is a wholly owned subsidiary of Linde plc. Linde Inc. may offer debt securities under the Registration Statement. Debt securities of Linde Inc. will be guaranteed by Linde plc, and such guarantees by Linde plc may be guaranteed by Linde GmbH. Linde Inc. may also provide (i) guarantees of debt securities offered by Linde plc under the Registration Statement and (ii) guarantees of the guarantees provided by Linde plc of debt securities of Linde Finance offered under the Registration Statement.

Linde Finance B.V. is a wholly owned subsidiary of Linde plc. Linde Finance may offer debt securities under the Registration Statement. Linde plc will guarantee debt securities of Linde Finance offered under the Registration Statement. Linde GmbH and Linde Inc. may guarantee Linde plc's obligations under its downstream guarantee.

Linde GmbH is a wholly owned subsidiary of Linde plc. Linde GmbH may provide (i) guarantees of debt securities offered by Linde plc under the Registration Statement and (ii) upstream guarantees of downstream guarantees provided by Linde plc of debt securities of Linde Inc. or Linde Finance offered under the Registration Statement.

In September 2019, Linde plc provided downstream guarantees of all of the pre-business combination Linde Inc. and Linde Finance notes, and Linde GmbH and Linde Inc., respectively, provided upstream guarantees of Linde plc's downstream guarantees.

For further information about the guarantees of the debt securities registered under the Registration Statement (including the ranking of such guarantees, limitations on enforceability of such guarantees and the circumstances under which such guarantees may be released), see "Description of Debt Securities – Guarantees" and "Description of Debt Securities – Ranking" in the Registration Statement, which subsections are incorporated herein by reference.

The following tables present summarized financial information for Linde plc, Linde Inc., Linde GmbH and Linde Finance on a combined basis, after eliminating intercompany transactions and balances between them and excluding investments in and equity in earnings from non-guarantor subsidiaries.

(Millions of dollars) **Statement of Income Data**	**Twelve Months Ended December 31, 2022**	**Twelve Months Ended December 31, 2021**
Sales	$ 8,850	$ 7,767
Operating profit	1,337	973
Net income	675	721
Transactions with non-guarantor subsidiaries	2,241	2,067
Balance Sheet Data (at period end)		
Current assets (a)	$ 11,478	$ 5,826
Long-term assets (b)	13,949	15,928
Current liabilities (c)	11,767	8,853
Long-term liabilities (d)	48,210	42,860
(a) From current assets above, amount due from non-guarantor subsidiaries	$ 7,260	$ 4,209
(b) From long-term assets above, amount due from non-guarantor subsidiaries	1,982	3,257
(c) From current liabilities above, amount due to non-guarantor subsidiaries	1,334	1,304
(d) From long-term liabilities above, amount due to non-guarantor subsidiaries	33,268	28,142

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Linde is exposed to market risks relating to fluctuations in interest rates and currency exchange rates. The objective of financial risk management at Linde is to minimize the negative impact of interest rate and foreign exchange rate fluctuations on the company's earnings, cash flows and equity.

To manage these risks, Linde uses various derivative financial instruments, including interest-rate swaps, treasury rate locks, currency swaps, forward contracts, and commodity contracts. Linde only uses commonly traded and non-leveraged instruments. These contracts are entered into primarily with major banking institutions thereby minimizing the risk of credit loss. Also, see Note 1 and Note 12 to the consolidated financial statements for a more complete description of Linde's accounting policies and use of such instruments.

The following discussion presents the sensitivity of the market value, earnings and cash flows of Linde's financial instruments to hypothetical changes in interest and exchange rates assuming these changes occurred at December 31, 2022. The range of changes chosen for these discussions reflects Linde's view of changes which are reasonably possible over a one-year period. Market values represent the present values of projected future cash flows based on interest rate and exchange rate assumptions.

Interest Rate Risk

At December 31, 2022, Linde had debt totaling $17,914 million ($14,207 million at December 31, 2021). For fixed-rate instruments, interest rate changes affect the fair market value but do not impact earnings or cash flows. Conversely, for floating-rate instruments, interest rate changes generally do not affect the fair market value of the instrument but impact future earnings and cash flows, assuming that other factors are held constant. At December 31, 2022, including the impact of derivatives, Linde had fixed-rate debt of $13,000 million and floating-rate debt of $4,914 million, representing 73% and 27%, respectively, of total debt. At December 31, 2021, Linde had fixed-rate debt of $12,492 million and floating-rate debt of $1,715 million, representing 88% and 12%, respectively, of total debt.

Fixed Rate Debt

In order to mitigate interest rate risk, when considered appropriate, interest-rate swaps are entered into as hedges of underlying financial instruments to effectively change the characteristics of the interest rate without actually changing the underlying financial instrument. At December 31, 2022, Linde had fixed-to-floating interest rate swaps outstanding that were designated as hedging instruments of the underlying debt issuances—refer to Note 12 to the consolidated financial statements for additional information. This sensitivity analysis assumes that, holding all other variables constant (such as foreign exchange rates, swaps and debt levels), a one hundred basis point increase in interest rates would decrease the unrealized fair market value of the fixed-rate debt portfolio by approximately $666 million ($834 million in 2021). A one hundred basis point increase in interest rates would result in an approximate $21 million decrease to derivative assets recorded.

Variable Rate Debt

At December 31, 2022, the after-tax earnings and cash flows impact of a one hundred basis point increase in interest rates, including offsetting impact of derivatives, on the variable-rate debt portfolio would be approximately $25 million ($33 million in 2021).

Foreign Currency Risk

Linde's exchange-rate exposures result primarily from its investments and ongoing operations in Latin America (primarily Brazil and Mexico), Europe (primarily Germany, Scandinavia, and the U.K.), Canada, Asia Pacific (primarily Australia and China) and other business transactions such as the procurement of equipment from foreign sources. Linde frequently utilizes currency contracts to hedge these exposures. At December 31, 2022, Linde had a notional amount outstanding of $3,870 million ($5,870 million at December 31, 2021) related to foreign exchange contracts. The majority of these were to hedge recorded balance sheet exposures, primarily intercompany loans denominated in non-functional currencies. See Note 12 to the consolidated financial statements.

Holding all other variables constant, if there were a 10% increase in foreign-currency exchange rates for the portfolio, the fair market value of foreign-currency contracts outstanding at December 31, 2022 would increase by approximately $83 million and at December 31, 2021 would decrease by approximately $28 million, which would be largely offset by an offsetting loss or gain on the foreign-currency fluctuation of the underlying exposure being hedged.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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MANAGEMENT'S STATEMENT OF RESPONSIBILITY FOR FINANCIAL STATEMENTS

Linde's consolidated financial statements are prepared by management, which is responsible for their fairness, integrity and objectivity. The accompanying financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America applied on a consistent basis, except for accounting changes as disclosed, and include amounts that are estimates and judgments. All historical financial information in this annual report is consistent with the accompanying financial statements.

Linde maintains accounting systems, including internal accounting controls, monitored by a staff of internal auditors, that are designed to provide reasonable assurance of the reliability of financial records and the protection of assets. The concept of reasonable assurance is based on recognition that the cost of a system should not exceed the related benefits. The effectiveness of those systems depends primarily upon the careful selection of financial and other managers, clear delegation of authority and assignment of accountability, inculcation of high business ethics and conflict-of-interest standards, policies and procedures for coordinating the management of corporate resources, and the leadership and commitment of top management. In compliance with Section 404 of the Sarbanes-Oxley Act of 2002, Linde assessed its internal control over financial reporting and issued a report (see below).

The Audit Committee of the Board of Directors, which consists solely of non-employee directors, is responsible for overseeing the functioning of the accounting system and related controls and the preparation of annual financial statements. The Audit Committee periodically meets with management, internal auditors and the independent registered public accounting firm to review and evaluate their accounting, auditing and financial reporting activities and responsibilities, including management's assessment of internal control over financial reporting. The independent registered public accounting firm and internal auditors have full and free access to the Audit Committee and meet with the committee, with and without management present.

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Linde's management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of management, including the company's principal executive officer and principal financial officer, the company conducted an evaluation of the effectiveness of its internal control over financial reporting based on the framework in *Internal Control – Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (often referred to as COSO). Based on this evaluation, management concluded that the company's internal control over financial reporting was effective as of December 31, 2022.

PricewaterhouseCoopers LLP, an independent registered public accounting firm, has audited and issued their opinion on the effectiveness of the company's internal control over financial reporting as of December 31, 2022 as stated in their report.

/s/ SANJIV LAMBA

Sanjiv Lamba
Chief Executive Officer

/s/ KELCEY E. HOYT

Kelcey E. Hoyt
Chief Accounting Officer

/s/ MATTHEW J. WHITE

Matthew J. White
Chief Financial Officer

February 28, 2023

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Linde plc

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Linde plc and its subsidiaries (the "Company") as of December 31, 2022 and 2021, and the related consolidated statements of income, of comprehensive income, of equity and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition – Estimated Costs at Completion

As described in Note 19 to the consolidated financial statements, $2,762 million of the Company's total revenues for the year ended December 31, 2022 was generated from the sale of equipment contracts. Sale of equipment contracts are generally comprised of a single performance obligation. Revenue from the sale of equipment is generally recognized over time as the Company has an enforceable right to payment for performance completed to date and performance does not create an asset with alternative use. For contracts recognized over time, revenue is recognized primarily using a cost incurred input method. Costs incurred to date relative to total estimated costs at completion are used to measure progress toward satisfying performance obligations. Costs incurred include material, labor, and overhead costs and represent work contributing and proportionate to the transfer of control to the customer.

The principal considerations for our determination that performing procedures relating to revenue recognition—estimated costs at completion is a critical audit matter are (i) the significant judgment by management when developing the estimated costs at completion for the sale of equipment contracts; (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating audit evidence related to the estimated costs at completion and management's significant assumptions related to the total estimated material and labor costs; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process, including controls over developing the estimated costs at completion for the sale of equipment contracts. These procedures also included, among others, evaluating and testing management's process for developing the estimated costs at completion for the sale of equipment contracts, which included evaluating the reasonableness of management's significant assumptions related to the total estimated material and labor costs. Evaluating the reasonableness of management's significant assumptions involved evaluating management's ability to reasonably estimate costs at completion for the sale of equipment contracts on a sample basis by (i) performing a comparison of the originally estimated and actual costs incurred on similar completed equipment contracts, and (ii) evaluating the timely identification of circumstances that may warrant a modification to estimated costs at completion, including actual costs in excess of estimates. Professionals with specialized skill and knowledge were used to assist in evaluating the reasonableness of management's estimates and significant assumptions related to the total estimated material and labor costs.

/s/ PricewaterhouseCoopers LLP
Stamford, Connecticut
February 28, 2023

We have served as the Company's or its predecessor's auditor since 1992.

CONSOLIDATED STATEMENTS OF INCOME
LINDE PLC AND SUBSIDIARIES
(Dollar amounts in millions, except per share data)

Year Ended December 31,	2022	2021	2020
Sales	$ 33,364	$ 30,793	$ 27,243
Cost of sales, exclusive of depreciation and amortization	19,450	17,543	15,383
Selling, general and administrative	3,107	3,189	3,193
Depreciation and amortization	4,204	4,635	4,626
Research and development	143	143	152
Russia-Ukraine conflict and other charges	1,029	273	506
Other income (expenses) – net	(62)	(26)	(61)
Operating Profit	5,369	4,984	3,322
Interest expense – net	63	77	115
Net pension and OPEB cost (benefit), excluding service cost	(237)	(192)	(177)
Income From Continuing Operations Before Income Taxes and Equity Investments	5,543	5,099	3,384
Income taxes on continuing operations	1,434	1,262	847
Income From Continuing Operations Before Equity Investments	4,109	3,837	2,537
Income from equity investments	172	119	85
Income From Continuing Operations (Including Noncontrolling Interests)	4,281	3,956	2,622
Income from discontinued operations, net of tax	—	5	4
Net Income (Including Noncontrolling Interests)	4,281	3,961	2,626
Less: noncontrolling interests from continuing operations	(134)	(135)	(125)
Net Income – Linde plc	$ 4,147	$ 3,826	$ 2,501
Net Income – Linde plc			
Income from continuing operations	$ 4,147	$ 3,821	$ 2,497
Income from discontinued operations	$ —	$ 5	$ 4
Per Share Data – Linde plc Shareholders			
Basic earnings per share from continuing operations	$ 8.30	$ 7.39	$ 4.74
Basic earnings per share from discontinued operations	—	0.01	0.01
Basic earnings per share	$ 8.30	$ 7.40	$ 4.75
Diluted earnings per share from continuing operations	$ 8.23	$ 7.32	$ 4.70
Diluted earnings per share from discontinued operations	—	0.01	0.01
Diluted earnings per share	$ 8.23	$ 7.33	$ 4.71
Weighted Average Shares Outstanding (000's):			
Basic shares outstanding	499,736	516,896	526,736
Diluted shares outstanding	504,038	521,875	531,157

The accompanying Notes are an integral part of these financial statements.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
LINDE PLC AND SUBSIDIARIES
(Dollar amounts in millions)

Year Ended December 31,	2022	2021	2020
NET INCOME (INCLUDING NONCONTROLLING INTERESTS)	$ 4,281	$ 3,961	$ 2,626
OTHER COMPREHENSIVE INCOME (LOSS)			
Translation adjustments:			
Foreign currency translation adjustments	(1,725)	(1,116)	565
Reclassifications to net income	(110)	(52)	—
Income taxes	—	(7)	30
Translation adjustments	(1,835)	(1,175)	595
Funded status - retirement obligations (Note 16):			
Retirement program remeasurements	1,349	826	(675)
Reclassifications to net income	80	175	92
Income taxes	(359)	(255)	114
Funded status - retirement obligations	1,070	746	(469)
Derivative instruments (Note 12):			
Current year unrealized gain (loss)	107	140	(3)
Reclassifications to net income	(129)	(49)	42
Income taxes	9	(20)	(8)
Derivative instruments	(13)	71	31
TOTAL OTHER COMPREHENSIVE INCOME (LOSS)	(778)	(358)	157
COMPREHENSIVE INCOME (INCLUDING NONCONTROLLING INTERESTS)	3,503	3,603	2,783
Less: noncontrolling interests	(90)	(135)	(158)
COMPREHENSIVE INCOME - LINDE PLC	$ 3,413	$ 3,468	$ 2,625

The accompanying Notes are an integral part of these financial statements.

CONSOLIDATED BALANCE SHEETS
LINDE PLC AND SUBSIDIARIES
(Dollar amounts in millions)

December 31,	2022	2021
Assets		
Cash and cash equivalents	$ 5,436	$ 2,823
Accounts receivable – net	4,559	4,499
Contract assets	124	134
Inventories	1,978	1,733
Prepaid and other current assets	950	970
Total Current Assets	13,047	10,159
Property, plant and equipment – net	23,548	26,003
Equity investments	2,350	2,619
Goodwill	25,817	27,038
Other intangible assets – net	12,420	13,802
Other long-term assets	2,476	1,984
Total Assets	$ 79,658	$ 81,605
Liabilities and Equity		
Accounts payable	$ 2,995	$ 3,503
Short-term debt	4,117	1,163
Current portion of long-term debt	1,599	1,709
Contract liabilities	3,073	2,940
Accrued taxes	613	429
Other current liabilities	4,082	3,899
Total Current Liabilities	16,479	13,643
Long-term debt	12,198	11,335
Other long-term liabilities	2,795	4,188
Deferred credits	6,799	6,998
Total Liabilities	38,271	36,164
Commitments and contingencies (Note 17)		
Redeemable noncontrolling interests	13	13
Linde plc Shareholders' Equity:		
Ordinary shares (€0.001 par value, authorized 1,750,000,000 shares, 2022 and 2021 issued: 552,012,862 ordinary shares)	1	1
Additional paid-in capital	40,005	40,180
Retained earnings	20,541	18,710
Accumulated other comprehensive income (loss)	(5,782)	(5,048)
Less: Treasury shares, at cost (2022 – 59,555,235 shares and 2021 – 43,331,983 shares)	(14,737)	(9,808)
Total Linde plc Shareholders' Equity	40,028	44,035
Noncontrolling interests	1,346	1,393
Total Equity	41,374	45,428
Total Liabilities and Equity	$ 79,658	$ 81,605

The accompanying Notes are an integral part of these financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS
LINDE PLC AND SUBSIDIARIES
(Millions of dollars)

Year Ended December 31,	2022	2021	2020
Increase (Decrease) in Cash and Cash Equivalents			
Operations			
Net income – Linde plc	$ 4,147	$ 3,826	$ 2,501
Less: income from discontinued operations, net of tax and noncontrolling interests	—	(5)	(4)
Add: Noncontrolling interests from continuing operations	134	135	125
Income from continuing operations (including noncontrolling interests)	$ 4,281	$ 3,956	$ 2,622
Adjustments to reconcile net income to net cash provided by operating activities:			
Russia-Ukraine conflict and other charges, net of payments	902	98	258
Depreciation and amortization	4,204	4,635	4,626
Deferred income taxes	(383)	(254)	(369)
Share-based compensation	107	128	133
Non-cash charges and other	(49)	(19)	152
Working capital			
Accounts receivable	(423)	(553)	19
Contract assets and liabilities, net	310	1,307	90
Inventory	(347)	(129)	18
Prepaid and other current assets	(157)	76	128
Payables and accruals	307	447	109
Pension contributions	(51)	(42)	(91)
Long-term assets, liabilities and other	163	75	(266)
Net cash provided by operating activities	8,864	9,725	7,429
Investing			
Capital expenditures	(3,173)	(3,086)	(3,400)
Acquisitions, net of cash acquired	(110)	(88)	(68)
Divestitures and asset sales, net of cash divested	195	167	482
Net cash used for investing activities	(3,088)	(3,007)	(2,986)
Financing			
Short-term debt borrowings (repayments) – net	3,050	(1,329)	1,198
Long-term debt borrowings	3,210	2,283	2,796
Long-term debt repayments	(1,785)	(1,468)	(2,681)
Issuances of ordinary shares	36	50	47
Purchases of ordinary shares	(5,168)	(4,612)	(2,457)
Cash dividends – Linde plc shareholders	(2,344)	(2,189)	(2,028)
Noncontrolling interest transactions and other	(88)	(323)	(220)
Net cash used for financing activities	(3,089)	(7,588)	(3,345)
Effect of exchange rate changes on cash and cash equivalents	(74)	(61)	(44)
Change in cash and cash equivalents	2,613	(931)	1,054
Cash and cash equivalents, beginning-of-period	2,823	3,754	2,700
Cash and cash equivalents, end-of-period	$ 5,436	$ 2,823	$ 3,754
Supplemental Data			
Income taxes paid	$ 1,735	$ 1,710	$ 1,066
Interest paid, net of capitalized interest (Note 7)	$ 170	$ 233	$ 322

The accompanying Notes are an integral part of these financial statements.

CONSOLIDATED STATEMENTS OF EQUITY
LINDE PLC AND SUBSIDIARIES
(Dollar amounts in millions, except per share data, shares in thousands)

	Linde plc Shareholders' Equity									
	Ordinary shares		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss) (Note 7)	Treasury Stock		Linde plc Shareholders' Equity	Noncontrolling Interests	Total Equity
Activity	Shares	Amounts				Shares	Amounts			
Balance, December 31, 2019	552,013	$ 1	$ 40,201	$ 16,842	$ (4,814)	17,632	$(3,156)	$ 49,074	$ 2,448	$ 51,522
Net Income available for Linde plc shareholders				2,501				2,501	125	2,626
Other comprehensive income (loss)					124			124	33	157
Noncontrolling interests:										
Dividends and other capital reductions								—	(161)	(161)
Additions (Reductions) – (Note 14)								—	(193)	(193)
Redemption value adjustments				17				17		17
Dividends ($3.852 per ordinary share)				(2,028)				(2,028)		(2,028)
Issuances of ordinary shares:										
For employee savings and incentive plans			(132)	(154)		(1,208)	233	(53)		(53)
Purchases of ordinary shares						12,294	(2,451)	(2,451)		(2,451)
Share-based compensation			133					133		133
Balance, December 31, 2020	552,013	$ 1	$ 40,202	$ 17,178	$ (4,690)	28,718	$(5,374)	$ 47,317	$ 2,252	$ 49,569
Net Income available for Linde plc shareholders				3,826				3,826	135	3,961
Other comprehensive income (loss)					(358)			(358)	—	(358)
Noncontrolling interests:										
Dividends and other capital reductions								—	(118)	(118)
Additions (Reductions) – (Note 14)								—	(876)	(876)
Dividends ($4.24 per ordinary share)				(2,189)				(2,189)		(2,189)
Issuances of ordinary shares:										
For employee savings and incentive plans			(150)	(105)		(1,026)	209	(46)		(46)
Purchases of ordinary shares						15,640	(4,643)	(4,643)		(4,643)
Share-based compensation			128					128		128
Balance, December 31, 2021	552,013	$ 1	$ 40,180	$ 18,710	$ (5,048)	43,332	$(9,808)	$ 44,035	$ 1,393	$ 45,428
Net Income available for Linde plc shareholders				4,147				4,147	134	4,281
Other comprehensive income (loss)					(734)			(734)	(44)	(778)
Noncontrolling interests:										
Dividends and other capital reductions								—	(81)	(81)
Additions (Reductions) – (Note 14)								—	(56)	(56)
Dividends ($4.68 per ordinary share)				(2,344)				(2,344)		(2,344)
Issuances of ordinary shares:										
For employee savings and incentive plans			(282)	28		(811)	198	(56)		(56)
Purchases of ordinary shares						17,034	(5,127)	(5,127)		(5,127)
Share-based compensation			107					107		107
Balance, December 31, 2022	552,013	$ 1	$ 40,005	$ 20,541	$ (5,782)	59,555	$14,737)	$ 40,028	$ 1,346	$ 41,374

The accompanying Notes are an integral part of these financial statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
LINDE PLC AND SUBSIDIARIES

NOTE 1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Linde plc ("Linde" or "the company") is an incorporated public limited company formed under the laws of Ireland. Linde's registered office is located at Ten Earlsfort Terrace, Dublin 2, D02 T380 Ireland. Linde's principal executive offices are located at Forge, 43 Church Street West, Woking, Surrey GU21 6HT, United Kingdom and 10 Riverview Drive, Danbury, Connecticut, United States 06810. Linde trades on the New York Stock Exchange and on the Frankfurt Stock Exchange under the symbol LIN.

On January 18, 2023, shareholders approved the company's proposal for an intercompany reorganization that will result in the delisting of its ordinary shares from the Frankfurt Stock Exchange. Following the completion of legal and regulatory approvals, Linde anticipates that the intercompany reorganization and delisting process will be completed, and its ordinary shares will be delisted from the Frankfurt Stock Exchange, on or about March 1, 2023.

In connection with the closing of the intercompany reorganization, Linde shareholders will automatically receive one share of the new holding company, to be listed on the New York Stock Exchange in exchange for each share of Linde plc they own. The new holding company will also be named "Linde plc" and will trade under the existing ticker LIN.

Principles of Consolidation – The consolidated financial statements were prepared in conformity with accounting principles generally accepted in the United States of America (" U.S. GAAP") and include the accounts of all significant subsidiaries where control exists and, in limited situations, variable-interest entities where the company is the primary beneficiary. Intercompany transactions and balances are eliminated in consolidation and any significant related-party transactions have been disclosed.

Equity investments generally consist of 20% to 50% owned operations where the company exercises significant influence, but does not have control. Income from equity investments in corporations is reported on an after-tax basis. Pre-tax income from equity investments that are partnerships or limited-liability corporations is included in other income (expenses) – net with related taxes included in Income taxes. Equity investments are reviewed for impairment whenever events or circumstances reflect that an impairment loss may have been incurred.

Changes in ownership interest that result either in consolidation or deconsolidation of an investment are recorded at fair value through earnings, including the retained ownership interest, while changes that do not result in either consolidation or deconsolidation of a subsidiary are treated as equity transactions.

Use of Estimates – The preparation of financial statements in conformity with U.S. GAAP requires management to make 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 financial statements and the reported amounts of revenues and expenses during the reporting period. While actual results could differ, management believes such estimates to be reasonable.

Operations – Linde is the largest industrial gases company globally. 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, and metals. 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.

Revenue Recognition – Revenue is recognized as control of goods or services are transferred to customers in an amount that reflects the consideration to which the company expects to be entitled to receive in exchange for the goods or services. See Note 19 for additional details regarding Linde's revenue recognition policies.

Cash Equivalents – Cash equivalents are considered to be highly liquid securities with original maturities of three months or less.

Inventories – Inventories are stated at the lower of cost or net realizable value. Cost is determined using the average-cost method.

Property, Plant and Equipment – Net – Property, plant and equipment are carried at cost, net of accumulated depreciation. The company capitalizes labor, applicable overhead and interest as part of the cost of constructing major facilities. Expenditures for additions and improvements that extend the lives or increase the capacity of plant assets are also capitalized. Depreciation is calculated on the straight-line method based on the estimated useful lives of the assets, which range from 3 years to 40 years (see Note 8). Linde uses accelerated depreciation methods for tax purposes where appropriate. Maintenance of property, plant and equipment is generally expensed as incurred.

The company performs a test for impairment whenever events or changes in circumstances indicate that the carrying amount of an individual asset or asset group may not be recoverable. Should projected undiscounted future cash flows be less

than the carrying amount of the asset or asset group, an impairment charge reducing the carrying amount to fair value may be required. Fair value is determined based on the most appropriate valuation technique, including discounted cash flows.

Asset-Retirement Obligations – An asset-retirement obligation is recognized in the period in which sufficient information exists to determine the fair value of the liability with a corresponding increase to the carrying amount of the related property, plant and equipment which is then depreciated over its useful life. The liability is initially measured at fair value and then accretion expense is recorded in each subsequent period. The company's asset-retirement obligations are primarily associated with its on-site long-term supply arrangements where the company has built a facility on land leased from the customer and is obligated to remove the facility at the end of the contract term. The company's asset-retirement obligations are not material to its consolidated financial statements.

Foreign Currency Translation – For most foreign operations, the local currency is the functional currency and translation gains and losses are reported as part of the accumulated other comprehensive income (loss) component of equity as a cumulative translation adjustment (see Note 7).

Financial Instruments – Linde enters into various derivative financial instruments to manage its exposure to fluctuating interest rates, currency exchange rates, commodity pricing and energy costs. Such instruments primarily include interest-rate swap and treasury rate lock agreements; currency-swap agreements; forward contracts; currency options; and commodity-swap agreements. These instruments are not entered into for trading purposes. Linde only uses commonly traded and non-leveraged instruments.

There are three types of derivatives the company enters into: (i) those relating to fair-value exposures, (ii) those relating to cash-flow exposures, and (iii) those relating to foreign currency net investment exposures. Fair-value exposures relate to recognized assets or liabilities, and firm commitments; cash-flow exposures relate to the variability of future cash flows associated with recognized assets or liabilities, or forecasted transactions; and net investment exposures relate to the impact of foreign currency exchange rate changes on the carrying value of net assets denominated in foreign currencies.

When a derivative is executed and hedge accounting is appropriate, it is designated as either a fair-value hedge, cash-flow hedge, or a net investment hedge. Currently, Linde designates all interest-rate and treasury rate locks as hedges for accounting purposes; however, currency contracts are generally not designated as hedges for accounting purposes unless they are related to forecasted transactions. Whether designated as hedges for accounting purposes or not, all derivatives are linked to an appropriate underlying exposure. On an ongoing basis, the company assesses the hedge effectiveness of all derivatives designated as hedges for accounting purposes to determine if they continue to be highly effective in offsetting changes in fair values or cash flows of the underlying hedged items. If it is determined that the hedge is not highly effective, then hedge accounting will be discontinued prospectively.

Changes in the fair value of derivatives designated as fair-value hedges are recognized in earnings as an offset to the change in the fair values of the underlying exposures being hedged. The changes in fair value of derivatives that are designated as cash-flow hedges are deferred in accumulated other comprehensive income (loss) and are reclassified to earnings as the underlying hedged transaction affects earnings. Provided the hedge remains highly effective, any ineffectiveness is deferred in accumulated other comprehensive income (loss) and are reclassified to earnings as the underlying hedged transaction affects earnings. Hedges of net investments in foreign subsidiaries are recognized in the cumulative translation adjustment component of accumulated other comprehensive income (loss) on the consolidated balance sheets to offset translation gains and losses associated with the hedged net investment. Derivatives that are entered into for risk-management purposes and are not designated as hedges (primarily related to currency derivatives other than for firm commitments) are recorded at their fair market values and recognized in current earnings.

See Note 12 for additional information relating to financial instruments.

Goodwill – Acquisitions are accounted for using the acquisition method which requires allocation of the purchase price to assets acquired and liabilities assumed based on estimated fair values. Any excess of the purchase price over the fair value of the assets and liabilities acquired is recorded as goodwill. Allocations of the purchase price are based on preliminary estimates and assumptions at the date of acquisition and are subject to revision based on final information received, including appraisals and other analyses which support underlying estimates.

The company performs a goodwill impairment test annually as of October 1 or more frequently if events or circumstances indicate that an impairment loss may have been incurred. The impairment test allows an entity to first assess qualitative factors to determine if it is more likely than not that the fair value of a reporting unit is less than carrying value. If it is determined that it is more likely than not that the fair value of a reporting unit is less than carrying value then the company will estimate and compare the fair value of its reporting units to their carrying value, including goodwill. Reporting units are determined based on one level below the operating segment level. The qualitative analysis of goodwill for the year

ended December 31, 2022 showed the fair value of the reporting units substantially exceeded the carrying value, as such further analysis was not performed.

See Note 9 for additional information relating to goodwill.

Other Intangible Assets – Other intangible assets, primarily customer relationships, are amortized over the estimated period of benefit. The determination of the estimated period of benefit will be dependent upon the use and underlying characteristics of the intangible asset. Linde evaluates the recoverability of its intangible assets subject to amortization when facts and circumstances indicate that the carrying value of the asset may not be recoverable. If the carrying value is not recoverable, impairment is measured as the amount by which the carrying value exceeds its estimated fair value. Fair value is generally estimated based on either appraised value or other valuation techniques. Indefinite lived intangible assets related to the Linde brand are evaluated for impairment on an annual basis or more frequently if events or circumstances indicate an impairment loss may have occurred.

See Note 10 for additional information relating to other intangible assets.

Income Taxes – Deferred income taxes are recorded for the temporary differences between the financial statement and tax bases of assets and liabilities using currently enacted tax rates. Valuation allowances are established against deferred tax assets whenever circumstances indicate that it is more likely than not that such assets will not be realized in future periods.

Under the guidance for accounting for uncertainty in income taxes, the company can recognize the benefit of an income tax position only if it is more likely than not (greater than 50%) that the tax position will be sustained upon tax examination, based solely on the technical merits of the tax position. Otherwise, no benefit can be recognized. The tax benefits recognized are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. Additionally, the company accrues interest and related penalties, if applicable, on all tax exposures for which reserves have been established consistent with jurisdictional tax laws. Interest and penalties are classified as income tax expense in the financial statements.

See Note 5 for additional information relating to income taxes.

Retirement Benefits – Most Linde employees participate in a form of defined benefit or contribution retirement plan, and additionally certain employees are eligible to participate in various post-employment health care and life insurance benefit plans. The cost of contribution plans is recognized in the year earned while the cost of other plans is recognized over the employees' expected service period to the company, all in accordance with the applicable accounting standards. The funded status of the plans is recorded as an asset or liability in the consolidated balance sheets. Funding of retirement benefits varies and is in accordance with local laws and practices.

See Note 16 for additional information relating to retirement programs.

Share-based Compensation– The company has historically granted share-based awards which consist of stock options, restricted stock and performance-based stock. Share-based compensation expense is generally recognized on a straight-line basis over the stated vesting period. For stock awards granted to full-retirement-eligible employees, compensation expense is recognized over the period from the grant date to the date retirement eligibility is achieved. For performance-based awards, compensation expense is recognized only if it is probable that the performance condition will be achieved.

See Note 15 for additional disclosures relating to share-based compensation.

Reclassifications – Certain prior years' amounts have been reclassified to conform to the current year's presentation.

Recently Issued Accounting Standards

Accounting Standards Implemented in 2022

There were no new accounting pronouncements that would materially impact the 2022 financial statements.

NOTE 2. Acquisitions and Divestitures

Acquisitions

Acquisitions were $110 million, $88 million and $68 million for the years ended December 31, 2022, 2021 and 2020, respectively. Acquisitions in 2022 and 2021 primarily related to the Americas and EMEA. Acquisitions in 2020 primarily related to the Americas.

Divestitures

Sale of GIST business

In the third quarter of 2022, the company completed the sale of its GIST business. Proceeds from the sale were $184 million, net of cash divested of $75 million, for net proceeds of $109 million. The sale resulted in a loss of $21 million (benefit of $3 million, after tax), recorded within the Russia-Ukraine conflict and other charges in the consolidated statement of income (see Note 3).

Deconsolidation of Joint Venture in APAC

Effective January 1, 2021, Linde deconsolidated a joint venture with operations in APAC, due to the expiration of certain contractual rights that the parties mutually agreed not to renew. From the effective date, the joint venture is reflected as an equity investment on Linde's consolidated balance sheet with the corresponding results reflected in income from equity investments on the consolidated statement of income.

The fair value of the joint venture at January 1, 2021 was determined using a discounted cash flow model and approximated the carrying amount of its net assets. The net carrying value of $852 million was mainly comprised of assets of approximately $1.9 billion (primarily Other intangibles and Property plant and equipment—net), net of liabilities of approximately $1.0 billion. Upon deconsolidation an equity investment was recorded representing Linde's share of the joint venture's net assets. The deconsolidation resulted in a gain of $52 million recorded within 2021 charges (see Note 3) related to the release of the CTA balance recorded within AOCI. The company did not receive any consideration, cash or otherwise, as part of the deconsolidation.

The joint venture contributed sales of approximately $600 million in 2020.

NOTE 3. Russia-Ukraine Conflict and Other Charges

2022 Charges

Russia-Ukraine conflict and other charges were $1 billion ($896 million, after tax and noncontrolling interests) for the year ended December 31, 2022, largely attributable to the Russia-Ukraine conflict.

Russia-Ukraine Conflict

In response to the Russian invasion of Ukraine, multiple jurisdictions, including Europe and the U.S., have imposed several tranches of economic sanctions on Russia. As a result, Linde reassessed its ability to control its Russian subsidiaries and determined that as of June 30, 2022 it can no longer exercise control over these entities. As such, Linde deconsolidated its Russian gas and engineering business entities as of June 30, 2022. The deconsolidation of the company's Russian gas and engineering business entities resulted in a loss of $787 million ($730 million after tax) during the second quarter.

The fair value of Linde's Russian subsidiaries was determined using a probability weighted discounted cash flow model, which resulted in the recognition of a $407 million loss on deconsolidation when compared to the carrying value of the entities. This loss is recorded within Russia-Ukraine conflict and other charges in the consolidated statements of income.

Upon deconsolidation an investment was recorded, which represents the fair value of net assets. The company did not receive any consideration, cash or otherwise, as part of the deconsolidation. Linde will maintain its interest in its Russian subsidiaries and will continue to comply with sanctions and government restrictions as it continues to develop divestiture options. The investment will be monitored for impairment in future periods.

Receivables, primarily loans receivable, with newly deconsolidated entities were reassessed for collectability resulting in a write-off of approximately $380 million.

Other Russia related charges

Other charges related specifically to the Russia-Ukraine conflict were $103 million ($73 million after tax) for the year ended December 31, 2022, and are primarily comprised of impairments of assets which are maintained by international entities in support of the Russian business.

Merger-Related Costs and Other Charges

Merger-related costs and other charges were $139 million ($93 million, after tax) for the year ended December 31, 2022, primarily related to severance actions within the Engineering segment recorded during the fourth quarter, the impairment of an equity method investment in the EMEA segment, and the sale of the GIST business completed on September 30, 2022 (see Note 2).

The following table provides a summary of the pre-tax charges by reportable segment for the year ended December 31, 2022 :

(millions of dollars)	Year Ended December 31, 2022				
	Russia deconsolidation charges	Other Russia related charges	**Total Russia charges**	Merger- related costs and other charges	**Total**
Americas	$ —	$ —	$ —	$ 4	$ 4
EMEA	733	(7)	726	25	751
APAC	—	—	—	28	28
Engineering	54	110	164	41	205
Other	—	—	—	41	41
Total	$ 787	$ 103	$ 890	$ 139	$ 1,029

2021 Charges

Cost reduction programs and other charges were $273 million ($279 million after tax) for the year ended December 31, 2021.

Total cost reduction program related charges were $338 million ($253 million after tax), for the year ended December 31, 2021. These expenses consisted primarily of severance charges of $259 million and other charges of $79 million for the year ended December 31, 2021. Other charges related primarily to the execution of the company's synergistic actions including location consolidations and business rationalization projects, process harmonization, and associated non-recurring costs.

Merger-related and other charges were benefits of $65 million (benefit of $26 million, after tax) for the year ended December 31, 2021. The 2021 pre-tax benefit was primarily due to a $52 million gain triggered by a joint venture deconsolidation in the APAC segment.

(millions of dollars)	Year Ended December 31, 2021				
	Severance costs	Other cost reduction charges	**Total cost reduction program related charges**	Merger related and other charges	**Total**
Americas	$ 4	$ 2	$ 6	$ (6)	$ —
EMEA	204	33	237	1	238
APAC	16	12	28	(50)	(22)
Engineering	20	6	26	—	26
Other	15	26	41	(10)	31
Total	$ 259	$ 79	$ 338	$ (65)	$ 273

2020 Charges

Cost reduction programs and other charges were $506 million for the year ended December 31, 2020, ($372 million after tax).

Total cost reduction program related charges were $391 million ($277 million after tax) for the year ended December 31, 2020. These expenses consisted primarily of severance costs of $298 million and other charges of $93 million for the year ended December 31, 2020. Other charges related to the execution of the company's synergistic actions including location consolidations and business rationalization projects, process harmonization, and associated non-recurring costs.

Merger-related and other charges were $115 million ($95 million, after tax). for the year ended December 31, 2020.

	Year Ended December 31, 2020				
(millions of dollars)	Severance costs	Other cost reduction charges	**Total cost reduction program related charges**	Merger related and other charges	**Total**
Americas	$ 35	$ 24	$ 59	$ 13	$ 72
EMEA	131	21	152	3	155
APAC	7	2	9	3	12
Engineering	38	28	66	4	70
Other	87	18	105	92	197
Total	$ 298	$ 93	$ 391	$ 115	$ 506

Cash Requirements

The total cash requirements of the Russia-Ukraine conflict and other charges incurred for the year ended December 31, 2022 are expected to be immaterial. Remaining cash requirements are expected to be paid through 2023. Russia-Ukraine conflict and other charges, net of payments in the consolidated statements of cash flows for the twelve months ended December 31, 2022 and 2021 also reflect the impact of cash payments of liabilities, including merger-related tax liabilities, accrued as of December 31, 2021 and 2020, respectively.

The following table summarizes the activities related to the Russia-Ukraine conflict and the company's cost reduction programs and other charges during 2021 and 2022:

(millions of dollars)	**Total Russia charges**	Severance costs	Other cost reduction charges	**Total cost reduction program related charges**	Merger related and other charges	**Total**
Balance, December 31, 2020	$ —	$ 283	$ 22	$ 305	$ 64	$ 369
2021 Cost Reduction Programs and Other	—	259	79	338	(65)	273
Less: Cash payments	—	(138)	(15)	(153)	(22)	(175)
Less: Non-cash charges	—	—	(41)	(41)	54	13
Foreign currency translation and other	—	(20)	(7)	(27)	—	(27)
Balance, December 31, 2021	$ —	$ 384	$ 38	$ 422	$ 31	$ 453
2022 Russia-Ukraine conflict and other	890	41	24	65	74	1,029
Less: Cash payments	—	(122)	(24)	(146)	19	(127)
Less: Non-cash charges	(890)	—	(7)	(7)	(109)	(1,006)
Foreign currency translation and other	—	(22)	(4)	(26)	(3)	(29)
Balance, December 31, 2022	$ —	$ 281	$ 27	$ 308	$ 12	$ 320

Classification in the consolidated financial statements

The pre-tax charges for each year are shown within operating profit in a separate line item on the consolidated statements of income. In the consolidated balance sheets, reductions in assets are recorded against the carrying value of the related assets and unpaid amounts are recorded as other current or long-term liabilities (see Note 7). On the consolidated statements of cash flows, the pre-tax impact of these charges, net of cash payments, is shown as an adjustment to reconcile net income to net cash provided by operating activities. In Note 18 Segment Information, Linde excluded these charges from its management definition of segment operating profit; a reconciliation of segment operating profit to consolidated operating profit is shown within the segment operating profit table.

NOTE 4. LEASES

In the normal course of its business, Linde enters into various leases as the lessee, primarily involving manufacturing and distribution equipment and office space. Linde determines whether a contract is or contains a lease at contract inception. Total lease and rental expenses related to operating lease right of use assets for the twelve months ended December 31, 2022 and 2021 was $284 million and $317 million, respectively. Operating leases costs are included in selling, general and administrative expenses and cost of sales, exclusive of depreciation and amortization. The related assets and obligations are included in other long term assets and other current liabilities and other long term liabilities, respectively. Total lease and rental expenses related to finance lease right of use assets for the twelve months ended December 31, 2022 and 2021 was $57 million and $51 million, respectively, and the costs are included in depreciation and amortization and interest. Related assets and obligations are included in other long term assets and other current liabilities and other long term liabilities, respectively. Linde includes renewal options that are reasonably certain to be exercised as part of the lease term. Operating and financing lease expenses above include short term and variable lease costs which are immaterial.

As most leases do not provide an implicit rate, Linde uses the applicable incremental borrowing rate at lease commencement to measure lease liabilities and right-of-use assets. Linde determines incremental borrowing rates through market sources.

The company has elected to apply the short-term lease exception for all underlying asset classes. Short-term leases are leases that, at the commencement date, have a lease term of twelve months or less and do not include a purchase option that the lessee is reasonably certain to exercise. Leases that meet the short-term lease definition are not recognized on the balance sheet, but rather expensed on a straight-line basis over the lease term.

Some leasing arrangements require variable payments that are dependent on usage, output, or may vary for other reasons, such as insurance. The company does not have material variable lease payments.

Gains and losses on sale and leaseback transactions were immaterial. Operating cash flows used for operating leases for the twelve months ended December 31, 2022 and 2021 were $254 million and $290 million, respectively. Cash flows used for finance leases for the same period were immaterial.

Supplemental balance sheet information related to leases is as follows:

(Millions of dollars)	December 31, 2022	December 31, 2021
Operating Leases		
Operating lease right-of-use assets	$ 726	$ 853
Other current liabilities	181	215
Other long-term liabilities	540	618
Total operating lease liabilities	721	833
Finance Leases		
Finance lease right-of-use assets	146	163
Other current liabilities	42	47
Other long-term liabilities	114	129
Total finance lease liabilities	$ 156	$ 176

Supplemental operating lease information:

	December 31, 2022	December 31, 2021
Weighted average lease term (years)	8	9
Weighted average discount rate	3.26%	2.91%

Future operating and finance lease payments as of December 31, 2022 are as follows (millions of dollars):

Period	Operating Leases	Financing Leases
2023	$ 196	$ 48
2024	140	37
2025	106	29
2026	79	19
2027	58	12
Thereafter	258	57
Total future undiscounted lease payments	837	202
Less imputed interest	(116)	(46)
Total reported lease liability	$ 721	$ 156

NOTE 5. INCOME TAXES

Pre-tax income applicable to U.S. and non-U.S. operations is as follows:

(Millions of dollars) **Year Ended December 31,**	**2022**	**2021**	**2020**
United States	$ 2,502	$ 2,020	$ 1,253
Non-U.S.	3,041	3,079	2,131
Total income before income taxes	$ 5,543	$ 5,099	$ 3,384

Provision for Income Taxes

The following is an analysis of the provision for income taxes:

(Millions of dollars) **Year Ended December 31,**	**2022**	**2021**	**2020**
Current tax expense (benefit)			
U.S. federal	$ 486	$ 287	$ 185
State and local	92	87	17
Non-U.S.	1,239	1,142	1,013
	1,817	1,516	1,215
Deferred tax expense (benefit)			
U.S. federal	(12)	63	20
State and local	7	8	7
Non-U.S.	(378)	(325)	(395)
	(383)	(254)	(368)
Total income taxes	$ 1,434	$ 1,262	$ 847

U.S. Tax Cuts and Jobs Act (Tax Act) 2018

As of December 31, 2022 and 2021, the tax payable related to the deemed repatriation tax is $178 million and $178 million, respectively, of which $139 million and $178 million is classified as other long-term liabilities on the consolidated balance sheet (See Note 7), respectively. The company is required to fund the balance in annual installments through 2025.

Effective Tax Rate Reconciliation

For purposes of the effective tax rate reconciliation, the company utilizes the U.S. statutory income tax rate of 21 %. An analysis of the difference between the provision for income taxes and the amount computed by applying the U.S. statutory income tax rate to pre-tax income follows:

(Dollar amounts in millions) **Year Ended December 31,**	**2022**		**2021**		**2020**	
U.S. statutory income tax	$ 1,164	21.0 %	$ 1,071	21.0 %	$ 711	21.0 %
State and local taxes – net of federal benefit	84	1.5 %	83	1.6 %	21	0.6 %
U.S. tax credits and deductions (a)	(16)	(0.3) %	(23)	(0.5) %	(8)	(0.2) %
Non-U.S. tax differentials (b)	176	3.2 %	219	4.3 %	167	4.9 %
Share-Based compensation	(41)	(0.7) %	(56)	(1.1) %	(53)	(1.6) %
Russia/Ukraine Charges	108	1.9 %	—	— %	—	— %
Other – net (c)	(41)	(0.7)%	(32)	(0.6) %	9	0.3 %
Provision for income taxes	$ 1,434	25.9 %	$ 1,262	24.7 %	$ 847	25.0 %

(a) U.S. tax credits and deductions relate to non-U.S. derived intangible income and the research and experimentation tax credit in 2022, 2021 and 2020.

(b) Primarily related to differences between the U.S. tax rate and the statutory tax rate in the countries where the company operates. Excluding 2021, which included an $83 million deferred income tax charge related to a tax rate increase in the U.K, other permanent items and tax rate changes were not significant.

(c) Other – net includes net tax benefits related to the settlement of tax audits of $71 million in 2022 , and $47 million in 2021.

Net Deferred Tax Liabilities

Net deferred tax liabilities included in the consolidated balance sheets are comprised of the following:

(Millions of dollars) December 31,	2022	2021
Deferred tax liabilities		
Fixed assets (a)	$ 2,775	$ 3,177
Goodwill	173	166
Other intangible assets	2,939	3,263
Subsidiary/equity investments	545	586
Other (b)	471	634
	$ 6,903	$ 7,826
Deferred tax assets		
Carryforwards	$ 289	$ 358
Benefit plans and related (c)(d)	165	607
Inventory	68	57
Accruals and other (e)	1,001	1,042
	$ 1,523	$ 2,064
Less: Valuation allowances (f)	(276)	(235)
	$ 1,247	$ 1,829
Net deferred tax liabilities	$ 5,656	$ 5,997
Recorded in the consolidated balance sheets as (Note 7):		
Other long-term assets	230	242
Deferred credits	5,886	6,239
	$ 5,656	$ 5,997

(a) Excludes $39 million and $19 million of fixed assets in 2022 related to the deconsolidation of Russia and the sale of GIST, respectively (see Notes 3 and 2).

(b) Includes $206 million in 2022 and $236 million in 2021 related to right-of-use lease assets.

(c) Includes deferred tax liabilities of $54 million and deferred tax assets of $305 million in 2022 and 2021, respectively, related to pension / OPEB funded status (see Notes 7 and 16).

(d) The amounts are net of non-US deferred tax liabilities of $315 million in 2022 and $71 million in 2021.

(e) Includes $212 million in 2022 and $246 million in 2021 related to lease liabilities and $25 million and $42 million in 2022 and 2021, respectively, related to research and development costs.

(f) Summary of changes in valuation allowances relating to deferred tax assets follows (millions of dollars):

	2022	2021	2020
Balance, January 1,	$ (235)	$ (243)	$ (222)
Income tax (charge) benefit	(44)	8	(21)
Other, including write-offs	—	—	2
Translation adjustments	3	—	(2)
Balance, December 31,	$ (276)	$ (235)	$ (243)

The company evaluates deferred tax assets quarterly to ensure that estimated future taxable income will be sufficient in character (e.g., capital gain versus ordinary income treatment), amount and timing to result in their recovery. After considering the positive and negative evidence, a valuation allowance is established to reduce the assets to their realizable value when management determines that it is more likely than not (i.e., greater than 50% likelihood) that a deferred tax asset will not be realized. Considerable judgment is required in establishing deferred tax valuation allowances.

As of December 31, 2022, the company had $289 million of deferred tax assets relating to net operating losses ("NOLs") and tax credits and $276 million of valuation allowances. These deferred tax assets include $215 million relating to NOLs of which $90 million expire within 5 years, $42 million expire after 5 years and $83 million have no expiration. The deferred tax assets also include $74 million related to credits of which $5 million expire within 5 years, $66 million expire after 5 years, and $3 million have no expiration. The valuation allowances of $276 million primarily relate to NOLs and foreign currency loss related to the revaluation of deferred tax liabilities associated with future repatriations. Management has determined, based on financial projections and available tax strategies, that it is unlikely that the benefit of these losses will be realized. If events or circumstances change, valuation allowances are adjusted at that time resulting in an income tax benefit or charge.

The company has $545 million of non-U.S. income taxes accrued related to its investments in subsidiaries and equity investments as of December 31, 2022. A provision has not been made for any additional non-U.S. income tax at December 31, 2022 on approximately $33 billion related to its investments in subsidiaries because the company intends to remain indefinitely reinvested. While the $33 billion could become subject to additional non-U.S. income tax if there is a sale of a subsidiary, or earnings are remitted as dividends, it is not practicable to estimate the unrecognized deferred tax liability.

Uncertain Tax Positions

Unrecognized income tax benefits represent income tax positions taken on income tax returns but not yet recognized in the consolidated financial statements. The company has unrecognized income tax benefits totaling $325 million, $387 million and $452 million as of December 31, 2022, 2021 and 2020, respectively. If recognized, essentially all of the unrecognized tax benefits and related interest and penalties would be recorded as a benefit to income tax expense on the consolidated statements of income.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

(Millions of dollars)	2022	2021	2020
Unrecognized income tax benefits, January 1	$ 387	$ 452	$ 472
Additions for tax positions of prior years	26	11	35
Reductions for tax positions of prior years (a)	(45)	(11)	(34)
Additions for current year tax positions	—	19	11
Reductions for settlements with taxing authorities (a)(b)	(23)	(60)	(39)
Foreign currency translation and other	(20)	(24)	7
Unrecognized income tax benefits, December 31	$ 325	$ 387	$ 452

(a) 2022 amounts are primarily related to the settlement of tax audits.

(b) Settlements are uncertain tax positions that were effectively settled with the taxing authorities, including positions where the company has agreed to amend its tax returns to eliminate the uncertainty.

The company classifies interest income and expense related to income taxes as tax expense in the consolidated statements of income. The company recognized net interest benefit of $3 million and $15 million and expense of $29 million for the years ended December 31, 2022, 2021 and 2020, respectively. The company had $35 million and $40 million of accrued interest and penalties as of December 31, 2022 and 2021, respectively, which were recorded in other long-term liabilities in the consolidated balance sheets (See Note 7).

As of December 31, 2022, the company remained subject to examination in the following major tax jurisdictions for the tax years as indicated below:

Major tax jurisdictions	Open Years
North and South America	
United States	2017 through 2022
Canada	2014 through 2022
Mexico	2014 through 2022
Brazil	2003 through 2022
Europe and Africa	
France	2019 through 2022
Germany	2018 through 2022
Spain	2010 through 2022
United Kingdom	2020 through 2022
Asia and Australia	
Australia	2018 through 2022
China	2017 through 2022
India	2006 through 2022
South Korea	2020 through 2022

The company is currently under audit in a number of jurisdictions. As a result, it is reasonably possible that some of these matters will conclude or reach the stage where a change in unrecognized income tax benefits may occur within the next twelve months. At the time new information becomes available, the company will record any adjustment to income tax expense as required. Final determinations, if any, are not expected to be material to the consolidated financial statements. The company is also subject to income taxes in many hundreds of state and local taxing jurisdictions that are open to tax examinations.

NOTE 6. EARNINGS PER SHARE – LINDE PLC SHAREHOLDERS

Basic and Diluted earnings per share - Linde plc shareholders is computed by dividing Income from continuing operations, Income from discontinued operations, net of tax, and Net income – Linde plc for the period by the weighted average number of either basic or diluted shares outstanding, as follows:

	2022	2021	2020
Numerator (Millions of dollars)			
Income from continuing operations	$ 4,147	$ 3,821	$ 2,497
Income from discontinued operations, net of tax	—	5	4
Net Income – Linde plc	$ 4,147	$ 3,826	$ 2,501
Denominator (Thousands of shares)			
Weighted average shares outstanding	499,254	516,507	526,404
Shares earned and issuable under compensation plans	482	389	332
Weighted average shares used in basic earnings per share	499,736	516,896	526,736
Effect of dilutive securities			
Stock options and awards	4,302	4,979	4,421
Weighted average shares used in diluted earnings per share	504,038	521,875	531,157
Basic earnings per share from continuing operations	$ 8.30	$ 7.39	$ 4.74
Basic earnings per share from discontinued operations	—	0.01	0.01
Basic Earnings Per Share	$ 8.30	$ 7.40	$ 4.75
Diluted earnings per share from continuing operations	$ 8.23	$ 7.32	$ 4.70
Diluted earnings per share from discontinued operations	—	0.01	0.01
Diluted Earnings Per Share	$ 8.23	$ 7.33	$ 4.71

There were no antidilutive shares for the years ended December 31, 2022, 2021 and 2020.

NOTE 7. SUPPLEMENTAL INFORMATION

Income Statement

(Millions of dollars)

Year Ended December 31,	2022	2021	2020
Selling, General and Administrative			
Selling	$ 1,295	$ 1,342	$ 1,303
General and administrative	1,812	1,847	1,890
	$ 3,107	$ 3,189	$ 3,193

Year Ended December 31,	2022	2021	2020
Depreciation and Amortization (a)			
Depreciation	$ 3,633	$ 3,912	$ 3,861
Amortization of intangibles (Note 10)	571	723	765
Depreciation and Amortization	$ 4,204	$ 4,635	$ 4,626

Year Ended December 31,	2022	2021	2020
Other Income (Expenses) – Net			
Currency related net gains (losses)	$ (18)	$ (29)	$ (28)
Partnership income	18	13	10
Severance expense	(13)	(5)	(5)
Asset divestiture gains (losses) – net	(9)	(31)	(78)
Other – net	(40)	26	40
	$ (62)	$ (26)	$ (61)

Year Ended December 31,	2022	2021	2020
Interest Expense – Net			
Interest incurred on debt and other	$ 277	$ 227	$ 277
Interest income	(117)	(40)	(55)
Amortization on acquired debt	(35)	(53)	(85)
Interest capitalized	(62)	(57)	(38)
Bond redemption (b)	—	—	16
	$ 63	$ 77	$ 115

Year Ended December 31,	2022	2021	2020
Income Attributable to Noncontrolling Interests			
Noncontrolling interests' operations (c)	$ 134	$ 135	$ 125

Balance Sheet

(Millions of dollars)

December 31,	2022	2021
Accounts Receivable		
Trade and Other receivables	$ 4,964	$ 4,904
Less: allowance for expected credit losses	(405)	(405)
	$ 4,559	$ 4,499

Receivables

Linde applies loss rates that are lifetime expected credit losses at initial recognition of the receivables. These expected loss rates are based on an analysis of the actual historical default rates for each business, taking regional circumstances into account. If necessary, these historical default rates are adjusted to reflect the impact of current changes in the macroeconomic environment using forward-looking information. The loss rates are also evaluated based on the expectations of the responsible management team regarding the collectability of the receivables. Gross trade receivables aged less than one year were $4,498 million and $4,425 million at December 31, 2022 and December 31, 2021, respectively, and gross receivables aged greater than one year were $321 million and $329 million at December 31, 2022 and December 31, 2021, respectively. Gross other receivables were $145 million and $150 million at December 31, 2022 and December 31, 2021, respectively. Receivables aged greater than one year are generally fully reserved unless specific circumstances warrant exceptions, such as those backed by federal governments.

Provisions for expected credit losses were $163 million, $129 million and $182 million for the twelve months ended December 31, 2022, 2021 and 2020, respectively. The allowance activity in the twelve months ended December 31, 2022 related to write-offs of uncollectible amounts, net of recoveries and currency movements is not material.

December 31,	2022	2021
Inventories		
Raw materials and supplies	$ 567	$ 399
Work in process	368	334
Finished goods	1,043	1,000
	$ 1,978	$ 1,733

December 31,	2022	2021
Prepaid and Other Current Assets		
Prepaid and other deferred charges (d)	$ 597	$ 527
VAT recoverable	225	196
Unrealized gains on derivatives (Note 12)	24	101
Other	104	146
	$ 950	$ 970

December 31,	2022	2021
Other Long-term Assets		
Pension assets (Note 16)	$ 661	$ 139
Insurance contracts (e)	39	46
Long-term receivables, net (f)	164	105
Lease assets (Note 4)	872	1,016
Deposits	52	43
Investments carried at cost (h)	184	18
Deferred charges	66	62
Deferred income taxes (Note 5)	230	242
Unrealized gains on derivatives (Note 12)	4	35
Other	204	278
	$ 2,476	$ 1,984

December 31,	2022	2021
Other Current Liabilities		
Accrued expenses	$ 1,533	$ 1,248
Payroll	614	710
VAT payable	259	295
Pension and postretirement (Note 16)	51	38
Interest payable	118	102
Lease liability (Note 4)	223	262
Insurance reserves	19	19
Unrealized losses on derivatives (Note 12)	23	27
Cost reduction programs (Note 3)	187	200
Other	1,055	998
	$ 4,082	$ 3,899

December 31,	2022	2021
Other Long-term Liabilities		
Pension and postretirement (Note 16)	$ 640	$ 1,802
Tax liabilities for uncertain tax positions (Note 5)	248	302
Tax Act liabilities for deemed repatriation (Note 5)	139	178
Lease liability (Note 4)	654	747
Interest and penalties for uncertain tax positions (Note 5)	35	40
Insurance reserves	52	56
Asset retirement obligation	305	305
Unrealized losses on derivatives (Note 12)	73	8
Cost reduction programs (Note 3)	133	253
Other	516	497
	$ 2,795	$ 4,188

December 31,	2022	2021
Deferred Credits		
Deferred income taxes (Note 5)	$ 5,886	$ 6,239
Other	913	759
	$ 6,799	$ 6,998

December 31,	2022	2021
Accumulated Other Comprehensive Income (Loss)		
Cumulative translation adjustment - net of taxes:		
Americas (g)	$ (3,942)	$ (3,985)
EMEA (g)	(1,249)	94
APAC (g)	(835)	154
Engineering	(241)	24
Other	483	(280)
	(5,784)	(3,993)
Derivatives – net of taxes	62	75
Pension/OPEB funded status obligation (net of $54 million tax obligation in 2022 and $305 million tax benefit in 2021) (Note 16)	(60)	(1,130)
	$ (5,782)	$ (5,048)

(a) Depreciation and amortization expense in 2022 include $1,006 million and $474 million, respectively, of Linde AG purchase accounting impacts. In 2021, depreciation and amortization expense include $1,245 million and $618 million, respectively, of Linde AG purchase accounting impacts.

(b) In December 2020, the company repaid $500 million of 4.05% notes and $500 million of 3.00% notes that were due in 2021 resulting in a $16 million interest charge.

(c) In 2022, 2021 and 2020 noncontrolling interests from continuing operations includes $22 million, $15 million and $57 million, respectively, of Linde AG purchase accounting impacts. The decrease in 2021 is primarily related to the deconsolidation of a joint venture with operations in APAC (see Note 2) and the buyout of minority interests in the Republic of South Africa (see Note 14).

(d) Includes estimated income tax payments of $164 million in 2022 and $122 million in 2021.

(e) Consists primarily of insurance contracts and other investments to be utilized for non-qualified pension and OPEB obligations.

(f) The balances at December 31, 2022 and 2021 are net of reserves of $36 million and $33 million, respectively. The amounts in both years relate primarily to long-term notes receivable from customers in APAC and government receivables in Brazil. The amount in 2022 also includes receivables from the sale of GIST.

(g) Americas consists of currency translation adjustments primarily in Canada, Mexico, and Brazil. EMEA relates primarily to Germany, the U.K. and Sweden. APAC relates primarily to China, South Korea, India and Australia.

(h) In 2022 includes investments from the deconsolidation of Russian subsidiaries.

NOTE 8. PROPERTY, PLANT AND EQUIPMENT – NET

Significant classes of property, plant and equipment are as follows:

(Millions of dollars) December 31,	Depreciable Lives (Yrs)	2022	2021
Production plants (primarily 15-year life) (a)	10-20	$ 30,554	$ 29,120
Storage tanks	15-20	4,807	4,441
Transportation equipment and other	3-15	3,434	2,973
Cylinders	10-30	4,604	4,474
Buildings	25-40	3,002	3,265
Land and improvements (b)	0-20	1,047	1,121
Construction in progress		3,239	3,062
		50,687	48,456
Less: accumulated depreciation		(27,139)	(22,453)
		$ 23,548	$ 26,003

(a) - Depreciable lives of production plants related to long-term customer supply contracts are generally consistent with the contract lives.

(b) - Land is not depreciated.

NOTE 9. GOODWILL

Changes in the carrying amount of goodwill for the years ended December 31, 2022 and 2021 were as follows:

(Millions of dollars)	Americas	EMEA	APAC	Engineering	Other	Total
Balance, December 31, 2020	$ 9,083	$ 10,844	$ 5,262	$ 2,682	$ 330	$ 28,201
Acquisitions	45	1	—	—	—	46
Foreign currency translation and other	(41)	(559)	(173)	(186)	(7)	(966)
Disposals (Note 2)	—	(8)	(235)	—	—	(243)
Balance, December 31, 2021	9,087	10,278	4,854	2,496	323	27,038
Acquisitions	44	28	—	—	—	72
Foreign currency translation and other	5	(773)	(304)	(146)	(13)	(1,231)
Disposals (Note 2 & Note 3)	—	(41)	—	(1)	(20)	(62)
Balance, December 31, 2022	$ 9,136	$ 9,492	$ 4,550	$ 2,349	$ 290	$ 25,817

Linde performs its goodwill impairment tests annually as of October 1 or more frequently if events or circumstances indicate that an impairment loss may have been incurred. For the fourth quarter 2022 test, the company applied the FASB's accounting guidance which allows the company to first assess qualitative factors to determine the extent of additional quantitative analysis, if any, that may be required to test goodwill for impairment. Based on the qualitative assessments performed, the company concluded that it was more likely than not that the fair value of each reporting unit substantially exceeded its carrying value and therefore, further quantitative analysis was not required. As a result, no impairment was recorded. There were no indicators of impairment since the annual goodwill impairment test was performed through December 31, 2022.

NOTE 10. OTHER INTANGIBLE ASSETS

The following is a summary of Linde's other intangible assets at December 31, 2022 and 2021:

(Millions of dollars) ***For the year ended December 31, 2022***	Customer Relationships	Brands/ Tradenames	Other Intangible Assets	Total
Cost:				
Balance, December 31, 2021	$ 11,859	$ 2,685	$ 1,629	$ 16,173
Additions	19	—	53	72
Foreign currency translation	(660)	(120)	(56)	(836)
Disposals (Note 2)	(140)	—	(45)	(185)
Other*	(16)	—	116	100
Balance, December 31, 2022	11,062	2,565	1,697	15,324
Less: accumulated amortization:				
Balance, December 31, 2021	(1,541)	(159)	(671)	(2,371)
Amortization expense (Note 7)	(419)	(42)	(110)	(571)
Foreign currency translation	80	5	13	98
Disposals (Note 2)	34	—	16	50
Other*	5	—	(115)	(110)
Balance, December 31, 2022	(1,841)	(196)	(867)	(2,904)
Net intangible asset balance at December 31, 2022	$ 9,221	$ 2,369	$ 830	$ 12,420

(Millions of dollars) ***For the year ended December 31, 2021***	Customer Relationships	Brands/Tradenames	Other Intangible Assets	Total
Cost:				
Balance, December 31, 2020	$ 13,776	$ 2,895	$ 1,697	$ 18,368
Additions	12	—	61	73
Foreign currency translation	(490)	(113)	(69)	(672)
Disposals	(1,085)	(94)	(46)	(1,225)
Other*	(354)	(3)	(14)	(371)
Balance, December 31, 2021	11,859	2,685	1,629	16,173
Less: accumulated amortization:				
Balance, December 31, 2020	(1,470)	(118)	(596)	(2,184)
Amortization expense (Note 7)	(553)	(45)	(125)	(723)
Foreign currency translation	64	3	22	89
Disposals (Note 2)	66	1	13	80
Other*	352	—	15	367
Balance, December 31, 2021	(1,541)	(159)	(671)	(2,371)
Net balance at December 31, 2021	$ 10,318	$ 2,526	$ 958	$ 13,802

* Other primarily relates to the write-off of fully amortized assets and reclassifications. 2021 Other is primarily due to merger related customer lists in the Americas.

There are no expected residual values related to these intangible assets. Amortization expense for the years ended December 31, 2022, 2021 and 2020 was $571 million, $723 million and $765 million, respectively. The remaining weighted-average amortization period for intangible assets is approximately 24 years.

Total estimated annual amortization expense related to finite-lived intangibles is as follows:

(Millions of dollars)		
2023	$	565
2024		537
2025		519
2026		468
2027		460
Thereafter		8,165
Total amortization related to finite-lived intangible assets		10,714
Indefinite-lived intangible assets at December 31, 2022		1,706
Net intangible assets at December 31, 2022	$	12,420

NOTE 11. DEBT

The following is a summary of Linde's outstanding debt at December 31, 2022 and 2021:

(Millions of dollars)	December 31, 2022	December 31, 2021
SHORT-TERM		
Commercial paper	$ 3,926	$ 278
Other borrowings (primarily non U.S.)	191	885
Total short-term debt	4,117	1,163
LONG-TERM (a)		
(U.S. dollar denominated unless otherwise noted)		
0.250% Euro denominated notes due 2022 (b) (c)	—	1,137
2.20% Notes due 2022 (e)	—	500
2.70% Notes due 2023	501	500
2.00% Euro denominated notes due 2023 (b)	699	759
5.875% GBP denominated notes due 2023 (b)	367	432
1.20% Euro denominated notes due 2024	588	625
1.875% Euro denominated notes due 2024 (b)	324	356
4.800% Notes due 2024 (f)	299	—
4.700% Notes due 2025 (f)	598	—
2.65% Notes due 2025	400	399
1.625% Euro denominated notes due 2025	533	565
0.00% Euro denominated notes due 2026	751	799
3.20% Notes due 2026	724	725
3.434% Notes due 2026	198	197
1.652% Euro denominated notes due 2027	88	94
0.250% Euro denominated notes due 2027	802	850
1.00% Euro denominated notes due 2027 (d)	536	—
1.00% Euro denominated notes due 2028 (b)	749	879
1.10% Notes due 2030	696	696
1.90% Euro denominated notes due 2030	111	118
1.375% Euro denominated notes due 2031 (d)	803	—
0.550% Euro denominated notes due 2032	798	847
0.375% Euro denominated notes due 2033	529	565
1.625% Euro denominated notes due 2035 (d)	849	—
3.55% Notes due 2042	665	664
2.00% Notes due 2050	296	296
1.00% Euro denominated notes due 2051	731	788
Non U.S. borrowings	152	243
Other	10	10
	13,797	13,044
Less: current portion of long-term debt	(1,599)	(1,709)
Total long-term debt	12,198	11,335
Total debt	17,914	14,207

(a) Amounts are net of unamortized discounts, premiums and/or debt issuance costs as applicable.

(b) December 31, 2022 and 2021 included a cumulative $56 million and $42 million adjustment to carrying value, respectively, related to hedge accounting of interest rate swaps.

(c) In January 2022, Linde repaid €1.0 billion of 0.250% note that became due.

(d) In March, 2022, Linde issued €500 million of 1.000% notes due 2027, €750 million of 1.375% notes due 2031, and €800 million of 1.625% notes due 2035.

(e) In May 2022, Linde repaid $500 million of 2.20% notes that were due in August 2022. There was no impact to interest within the consolidated statements of income.

(f) In November 2022, Linde issued $300 million of 4.800% notes due in 2024 and $600 million of 4.700% notes due in 2025.

Credit Facilities

On December 7, 2022, the company and certain of its subsidiaries entered into an amended and restated unsecured revolving credit agreement (the "Five Year Credit Agreement") with a syndicate of banking institutions. The Five Year Credit Agreement provides for total commitments of $5.0 billion, which may be increased up to $6.5 billion, subject to receipt of additional commitments and satisfaction of customary conditions. There are no financial maintenance covenants contained within the Credit Agreement. The revolving credit facility expires on December 7, 2027 with the option to request two one-year extensions of the expiration date.

In addition, on December 7, 2022, the company and certain of its subsidiaries entered into an unsecured 364-day revolving credit agreement (the "364-Day Credit Agreement" and, together with the Five Year Credit Agreement, the "Credit Agreements") with a syndicate of banking institutions. The 364-Day Credit Agreement provides for total commitments of $1.5 billion. There are no financial maintenance covenants contained within the Credit Agreement. The revolving credit facility expires on December 7, 2023 with the option to elect to have the entire principal balance outstanding under the Credit Agreement converted into non-revolving term loans, which will be due and payable one year after the commitment termination date.

No borrowings were outstanding under the Credit Agreements as of December 31, 2022.

Other Debt Information

The weighted-average interest rates of short-term borrowings outstanding were 3.2% and 0.0% as of December 31, 2022 and 2021, respectively.

Expected maturities of long-term debt are as follows:

(*Millions of dollars*)	
2023	$ 1,599
2024	1,219
2025	1,548
2026	1,686
2027	1,442
Thereafter	6,303
	$ 13,797

As of December 31, 2022, the amount of Linde's assets pledged as collateral was immaterial.

See Note 13 for the fair value information related to debt.

NOTE 12. FINANCIAL INSTRUMENTS

In its normal operations, Linde is exposed to market risks relating to fluctuations in interest rates, foreign currency exchange rates, energy and commodity costs. The objective of financial risk management at Linde is to minimize the negative impact of such fluctuations on the company's earnings and cash flows. To manage these risks, among other strategies, Linde routinely enters into various derivative financial instruments ("derivatives") including interest-rate swap and treasury rate lock agreements, currency-swap agreements, forward contracts, currency options, and commodity-swap agreements. These instruments are not entered into for trading purposes and Linde only uses commonly traded and non-leveraged instruments.

There are three types of derivatives that the company enters into: (i) those relating to fair-value exposures, (ii) those relating to cash-flow exposures, and (iii) those relating to foreign currency net investment exposures. Fair-value exposures relate to recognized assets or liabilities, and firm commitments; cash-flow exposures relate to the variability of future cash flows associated with recognized assets or liabilities, or forecasted transactions; and net investment exposures relate to the impact of foreign currency exchange rate changes on the carrying value of net assets denominated in foreign currencies.

When a derivative is executed and hedge accounting is appropriate, it is designated as either a fair-value hedge, cash-flow hedge, or a net investment hedge. Currently, Linde designates all interest-rate and treasury-rate locks as hedges for accounting purposes; however, cross-currency contracts are generally not designated as hedges for accounting purposes. Certain currency contracts related to forecasted transactions are designated as hedges for accounting purposes. Whether designated as hedges for accounting purposes or not, all derivatives are linked to an appropriate underlying exposure. On an ongoing basis, the company assesses the hedge effectiveness of all derivatives designated as hedges for accounting purposes

to determine if they continue to be highly effective in offsetting changes in fair values or cash flows of the underlying hedged items. If it is determined that the hedge is not highly effective, through the use of a qualitative assessment, then hedge accounting will be discontinued prospectively.

Counterparties to Linde's derivatives are major banking institutions with credit ratings of investment grade or better. The company has Credit Support Annexes ("CSAs") in place for certain entities with their principal counterparties to minimize potential default risk and to mitigate counterparty risk. Under the CSAs, the fair values of derivatives for the purpose of interest rate and currency management are collateralized with cash on a regular basis. As of December 31, 2022, the impact of such collateral posting arrangements on the fair value of derivatives was insignificant. Management believes the risk of incurring losses on derivative contracts related to credit risk is remote and any losses would be immaterial.

The following table is a summary of the notional amount and fair value of derivatives outstanding at December 31, 2022 and 2021 for consolidated subsidiaries:

(Millions of dollars)			Fair Value			
	Notional Amounts		Assets (a)		Liabilities (a)	
December 31,	**2022**	**2021**	**2022**	**2021**	**2022**	**2021**
Derivatives Not Designated as Hedging Instruments:						
Currency contracts:						
Balance sheet items	$ 3,056	$ 4,427	$ 13	$ 22	$ 7	$ 17
Forecasted transactions	449	537	9	6	9	11
Cross-currency swaps	42	148	—	21	1	4
Commodity contracts	N/A	N/A	—	—	—	—
Total	$ 3,547	$ 5,112	$ 22	$ 49	$ 17	$ 32
Derivatives Designated as Hedging Instruments:						
Currency contracts:						
Balance sheet items	$ —	$ —	$ —	$ —	$ —	$ —
Forecasted transactions	323	758	6	14	5	3
Commodity contracts	N/A	N/A	—	49	4	—
Interest rate swaps	856	1,251	—	24	70	—
Total Hedges	$ 1,179	$ 2,009	$ 6	$ 87	$ 79	$ 3
Total Derivatives	$ 4,726	$ 7,121	$ 28	$ 136	$ 96	$ 35

(a) Amounts at December 31, 2022 and 2021 included current assets of $24 million and $101 million, which are recorded in prepaid and other current assets; long-term assets of $4 million and $35 million, which are recorded in other long-term assets; current liabilities of $23 million and $27 million, which are recorded in other current liabilities; and long-term liabilities of $73 million and $8 million, which are recorded in other long-term liabilities.

Balance Sheet Items

Foreign currency contracts related to balance sheet items consist of forward contracts entered into to manage the exposure to fluctuations in foreign-currency exchange rates on recorded balance sheet assets and liabilities denominated in currencies other than the functional currency of the related operating unit. Certain forward currency contracts are entered into to protect underlying monetary assets and liabilities denominated in foreign currencies from foreign exchange risk and are not designated as hedging instruments. For balance sheet items that are not designated as hedging instruments, the fair value adjustments on these contracts are offset by the fair value adjustments recorded on the underlying monetary assets and liabilities.

Forecasted Transactions

Foreign currency contracts related to forecasted transactions consist of forward contracts entered into to manage the exposure to fluctuations in foreign-currency exchange rates on (1) forecasted purchases of capital-related equipment and services, (2) forecasted sales, or (3) other forecasted cash flows denominated in currencies other than the functional currency of the related operating units. For forecasted transactions that are designated as cash flow hedges, fair value adjustments are recorded to accumulated other comprehensive income (loss) with deferred amounts reclassified to earnings over the same

time period as the income statement impact of the associated purchase. For forecasted transactions that do not qualify for cash flow hedging relationships, fair value adjustments are recorded directly to earnings.

Cross-Currency Swaps

Cross-currency interest rate swaps are entered into to limit the foreign currency risk of future principal and interest cash flows associated with intercompany loans, and to a more limited extent bonds, denominated in non-functional currencies. The fair value adjustments on the cross-currency swaps are recorded to earnings, where they are offset by fair value adjustments on the underlying intercompany loan or bond.

Commodity Contracts

Commodity contracts are entered into to manage the exposure to fluctuations in commodity prices, which arise in the normal course of business from its procurement transactions. To reduce the extent of this risk, Linde enters into a limited number of electricity, natural gas, and propane gas derivatives. For forecasted transactions that are designated as cash flow hedges, fair value adjustments are recorded to accumulated other comprehensive income (loss) with deferred amounts reclassified to earnings over the same time period as the income statement impact of the associated purchase.

Net Investment Hedges

As of December 31, 2022, Linde has €8.0 billion ($8.5 billion) Euro-denominated notes and intercompany loans and ¥3.2 billion ($0.5 billion) CNY-denominated intercompany loans that are designated as hedges of the net investment positions in certain foreign operations. Since hedge inception, the deferred gain recorded within cumulative translation adjustment component of accumulated other comprehensive income (loss) in the consolidated balance sheet and the consolidated statement of comprehensive income is $473 million (deferred gain of $333 million for the year ended December 31, 2022).

As of December 31, 2022, exchange rate movements relating to previously designated hedges that remain in accumulated other comprehensive income (loss) is a loss of $42 million. These movements will remain in accumulated other comprehensive income (loss), until appropriate, such as upon sale or liquidation of the related foreign operations at which time amounts will be reclassified to the consolidated statements of income.

Interest Rate Swaps

Linde uses interest rate swaps to hedge the exposure to changes in the fair value of financial assets and financial liabilities as a result of interest rate changes. These interest rate swaps effectively convert fixed-rate interest exposures to variable rates; fair value adjustments are recognized in earnings along with an equally offsetting charge/benefit to earnings for the changes in the fair value of the underlying financial asset or financial liability (See Note 11).

Derivatives Impact on Consolidated Statements of Income

The following table summarizes the impact of the company's derivatives on the consolidated statements of income:

(Millions of dollars)	Amount of Pre-Tax Gain (Loss) Recognized in Earnings *		
December 31,	**2022**	**2021**	**2020**
Derivatives Not Designated as Hedging Instruments			
Currency contracts:			
Balance sheet items:			
Debt-related	$ 12	$ 42	$ (125)
Other balance sheet items	8	(5)	(40)
Total	$ 20	$ 38	$ (165)

* The gains (losses) on balance sheet items are offset by gains (losses) recorded on the underlying hedged assets and liabilities. Accordingly, the gains (losses) for the derivatives and the underlying hedged assets and liabilities related to debt items are recorded in the consolidated statements of income as interest expense-net. Other balance sheet items and anticipated net income gains (losses) are recorded in the consolidated statements of income as other income (expenses)-net.

The amounts of gain or loss recognized in accumulated other comprehensive income (loss) and reclassified to the consolidated statement of income was not material for the years ended December 31, 2022, December 31, 2021, and December 31, 2020. Net impacts expected to be reclassified to earnings during the next twelve months are also not material.

NOTE 13. FAIR VALUE DISCLOSURES

The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into three broad levels as follows:

Level 1 – quoted prices in active markets for identical assets or liabilities
Level 2 – quoted prices for similar assets and liabilities in active markets or inputs that are observable
Level 3 – inputs that are unobservable (for example cash flow modeling inputs based on assumptions)

Assets and Liabilities Measured at Fair Value on a Recurring Basis

The following table summarizes assets and liabilities measured at fair value on a recurring basis at December 31, 2022 and 2021:

(Millions of dollars)	Fair Value Measurements Using					
	Level 1		Level 2		Level 3	
	2022	2021	2022	2021	2022	2021
Assets						
Derivative assets	$ —	$ —	$ 28	$ 136	$ —	$ —
Investments and securities *	20	42	—	—	13	20
Total	$ 20	$ 42	$ 28	$ 136	$ 13	$ 20
Liabilities						
Derivative liabilities	$ —	$ —	$ 96	$ 35	$ —	$ —

* Investments and securities are recorded in prepaid and other current assets and other long-term assets in the company's consolidated balance sheets.

Level 1 investments and securities are marketable securities traded on an exchange. Level 2 investments are based on market prices obtained from independent brokers or determined using quantitative models that use as their basis readily observable market parameters that are actively quoted and can be validated through external sources, including third-party pricing services, brokers and market transactions. Level 3 investments and securities consist of a venture fund. For the valuation, Linde uses the net asset value received as part of the fund's quarterly reporting, which for the most part is not based on quoted prices in active markets. In order to reflect current market conditions, Linde proportionally adjusts these by observable market data (stock exchange prices) or current transaction prices.

Changes in level 3 investments and securities were immaterial.

The fair value of cash and cash equivalents, short-term debt, accounts receivable-net, and accounts payable approximate carrying value because of the short-term maturities of these instruments.

The fair value of long-term debt is estimated based on the quoted market prices for the same or similar issues. Long-term debt is categorized within either Level 1 or Level 2 of the fair value hierarchy depending on the trading volume of the issues and whether or not they are actively quoted in the market as opposed to traded through over-the-counter transactions. At December 31, 2022, the estimated fair value of Linde's long-term debt portfolio was $11,994 million versus a carrying value of $13,797 million. At December 31, 2021 the estimated fair value of Linde's long-term debt portfolio was $13,219 million versus a carrying value of $13,044 million. Differences between the carrying value and the fair value are attributable to fluctuations in interest rates subsequent to when the debt was issued and relative to stated coupon rates.

NOTE 14. EQUITY AND NONCONTROLLING INTERESTS

Linde plc Shareholders' Equity

At December 31, 2022 and 2021, Linde has total authorized share capital of €1,825,000 divided into 1,750,000,000 ordinary shares of €0.001 each, 25,000 A ordinary shares of €1.00 each, 25,000 deferred shares of €1.00 each and 25,000,000 preferred shares of €0.001 each.

At December 31, 2022 there were 552,012,862 and 492,457,627 of Linde plc ordinary shares issued and outstanding, respectively. At December 31, 2022 there were no shares of A ordinary shares, deferred shares or preferred shares issued or outstanding.

At December 31, 2021 there were 552,012,862 and 508,680,879 of Linde plc ordinary shares issued and outstanding, respectively. At December 31, 2021, there were no shares of A ordinary shares, deferred shares or preferred shares issued or outstanding.

Linde's Board of Directors may from time to time authorize the issuance of one or more series of preferred stock and, in connection with the creation of such series, determine the characteristics of each such series including, without limitation, the preference and relative, participating, optional or other special rights, and the qualifications, limitations or restrictions of the series.

Other Linde plc Ordinary Share and Treasury Share Transactions

Linde may issue new ordinary shares for dividend reinvestment and stock purchase plans and employee savings and incentive plans. No new ordinary shares were issued in 2022, 2021 and 2020.

On January 22, 2019 the company's board of directors approved the additional repurchase of $6.0 billion of its ordinary shares under which Linde had repurchased 24,847,354 shares through December 31, 2021. Linde completed the repurchases under this program in the first quarter of 2021.

On January 25, 2021 the company's board of directors approved the additional repurchase of $5.0 billion of its ordinary shares ("2021 program") under which Linde had repurchased 16,662,678 shares through December 31, 2022. This program is set to expire on July 31, 2023. Linde completed the repurchases under this program in the first quarter of 2022.

On February 28, 2022, the company's board of directors authorized a new share repurchase program for up to $10.0 billion of its ordinary shares ("2022 program") under which Linde had repurchased 15,474,759 shares through December 31, 2022. This program expires on July 31, 2024.

Noncontrolling Interests

Noncontrolling interest ownership changes are presented within the consolidated statements of equity. 2022 includes the impact of deconsolidating the company's Russian gas and engineering business entities (see to Note 3).

The decrease during 2021 is primarily related to the deconsolidation of a joint venture with operations in APAC (see to Note 2).

The decrease during 2020 primarily relates to the initiated buyout of minority interests in the Republic of South Africa. As of December 31, 2020, the conditions of the buyout were met obligating the company to execute in January 2021. Therefore, the company reclassified $196 million from non-controlling interest to other current liabilities reflecting the transaction price. An additional $35 million of dividends declared to the minority owners, reflected on the Dividends and other capital reductions line, was also reclassified to other current liabilities at December 31, 2020 and was paid in 2021.

Redeemable Noncontrolling Interests

Noncontrolling interests with redemption features, such as put/sell options, that are not solely within the company's control ("redeemable noncontrolling interests") are reported separately in the consolidated balance sheets at the greater of carrying value or redemption value. For redeemable noncontrolling interests that are not yet exercisable, Linde calculates the redemption value by accreting the carrying value to the redemption value over the period until exercisable. If the redemption value is greater than the carrying value, any increase is adjusted directly to retained earnings and does not impact net income. At December 31, 2022 and 2021, the redeemable noncontrolling interest balance includes an industrial gas business in EMEA where the noncontrolling shareholders have put options.

NOTE 15. SHARE-BASED COMPENSATION

Share-based compensation expense was $107 million in 2022 ($128 million and $133 million in 2021 and 2020, respectively). The related income tax benefit recognized was $64 million in 2022 ($64 million and $79 million in 2021 and 2020, respectively). The expense was primarily recorded in selling, general and administrative expenses and no share-based compensation expense was capitalized.

Summary of Plans

The 2021 Linde plc Long Term Incentive Plan (the "2021 Plan") was adopted by the Board of Directors and shareholders of Linde plc on July 26, 2021. Upon adoption of the 2021 Plan, any authorized shares that remained available for grant for new awards under the Amended and Restated 2009 Linde Long Term Incentive Plan (the "2009 Plan") were cancelled. The 2021 Plan permits awards of stock options, stock appreciation rights, restricted stock and restricted stock units, performance-based stock units and other equity awards to eligible officer and non-officer employees and

non-employee directors of the company and its affiliates. As of December 31, 2022, 8,271,252 shares remained available for equity grants under the 2021 Plan, of which 2,726,282 shares may be granted as awards other than options or stock appreciation rights.

Exercise prices for options granted under the 2021 Plan may not be less than the closing market price of the company's ordinary shares on the date of grant and granted options may not be re-priced or exchanged without shareholder approval. Options granted under the 2021 Plan subject only to time vesting requirements may become partially exercisable after a minimum of one year after the date of grant but may not become fully exercisable until at least three years have elapsed from the date of grant, and all options have a maximum duration of ten years.

In order to satisfy option exercises and other equity grants, the company may issue authorized but previously unissued shares or it may issue treasury shares.

Stock Option Fair Value

The company utilizes the Black-Scholes Options-Pricing Model to determine the fair value of stock options consistent with that used in prior years. Management is required to make certain assumptions with respect to selected model inputs, including anticipated changes in the underlying stock price (i.e., expected volatility) and option exercise activity (i.e., expected life). Expected volatility is based on the historical volatility of the company's stock over the most recent period commensurate with the estimated expected life of the company's stock options and other factors. The expected life of options granted, which represents the period of time that the options are expected to be outstanding, is based primarily on historical exercise experience. The expected dividend yield is based on the company's most recent history and expectation of dividend payouts. The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant for a period commensurate with the estimated expected life. If factors change and result in different assumptions in future periods, the stock option expense that the company records for future grants may differ significantly from what the company has recorded in the current period.

The weighted-average fair value of options granted during 2022 was $45.07 ($37.80 in 2021 and $17.37 in 2020) based on the Black-Scholes Options-Pricing model. The increase in the grant date fair value year-over-year is primarily attributable to the increase in the stock price.

The following weighted-average assumptions were used to value the grants in 2022, 2021 and 2020:

Year Ended December 31,	2022	2021	2020
Dividend yield	1.7%	1.7%	2.2%
Volatility	20.6%	18.4%	15.8%
Risk-free interest rate	1.70%	1.10%	0.60%
Expected term years	5	6	6

The following table summarizes option activity under the plans as of December 31, 2022 and changes during the period then ended (averages are calculated on a weighted basis; life in years; intrinsic value expressed in millions):

Activity	Number of Options (000's)	Average Exercise Price	Average Remaining Life	Aggregate Intrinsic Value
Outstanding at January 1, 2022	7,166	$ 152.56		
Granted	476	270.99		
Exercised	(880)	125.03		
Cancelled or expired	(42)	239.21		
Outstanding at December 31, 2022	6,720	$ 164.03	5.0	$ 1,090
Exercisable at December 31, 2022	5,383	$ 145.71	5.0	$ 971

The aggregate intrinsic value represents the difference between the company's closing stock price of $326.18 as of December 31, 2022 and the exercise price multiplied by the number of in the money options outstanding as of that date. The total intrinsic value of stock options exercised during 2022 was $176 million ($294 million and $264 million in 2021 and 2020, respectively).

Cash received from option exercises under all share-based payment arrangements for 2022 was $36 million ($50 million and $36 million in 2021 and 2020, respectively). The cash tax benefit realized from share-based compensation totaled $61 million for 2022 ($64 million and $70 million cash tax benefit in 2021 and 2020, respectively).

As of December 31, 2022, $15 million of unrecognized compensation cost related to non-vested stock options is expected to be recognized over a weighted-average period of approximately 1 year.

Performance-Based and Restricted Stock Unit Awards

In 2022, the company granted 368,600 performance-based stock unit awards under the 2021 Plan to senior management that vest, subject to the attainment of pre-established minimum performance criteria, principally on the third anniversary of their date of grant. These awards are tied to either after tax return on capital ("ROC") performance or relative total shareholder return ("TSR") performance versus that of the S&P 500 (weighted 67%) and Eurofirst 300 (weighted 33%). The actual number of shares issued in settlement of a vested award can range from zero to 200 percent of the target number of shares granted based upon the company's attainment of specified performance targets at the end of a three-year period. Compensation expense related to these awards is recognized over the three-year performance period based on the fair value of the closing market price of the company's ordinary shares on the date of the grant and the estimated performance that will be achieved. Compensation expense for ROC awards will be adjusted during the three-year performance period based upon the estimated performance levels that will be achieved. TSR awards are measured at their grant date fair value and not subsequently re-measured. The number of performance-based stock unit awards granted in 2022 includes an increase of 226,690 stock units to the target number of performance-based awards originally granted in 2019, as these awards achieved a higher payout factor upon completion of the three-year performance period.

The weighted-average fair value of ROC awards granted in 2022 was $257.63 ($241.10 in 2021 and $161.56 in 2020). These fair values are based on the closing market price of Linde's ordinary shares on the grant date adjusted for dividends that will not be paid during the vesting period.

The weighted-average fair value of TSR awards granted in 2022 was $301.42 ($301.04 in 2021 and $198.61 in 2020) and was estimated using a Monte Carlo simulation performed as of the grant date.

There were 139,512 restricted stock units granted to employees by Linde during 2022. The weighted-average fair value of restricted stock units granted during 2022 was $260.27 ($242.60 in 2021 and $174.95 in 2020). These fair values are based on the closing market price of Linde's ordinary shares on the grant date adjusted for dividends that will not be paid during the vesting period. Compensation expense related to the restricted stock units is recognized over the vesting period.

The following table summarizes non-vested performance-based and restricted stock unit award activity as of December 31, 2022 and changes during the period then ended (shares based on target amounts, averages are calculated on a weighted basis):

	Performance-Based		Restricted Stock	
	Number of Shares (000's)	Average Grant Date Fair Value	Number of Shares (000's)	Average Grant Date Fair Value
Non-vested at January 1, 2022	610	$ 204.39	636	$ 172.90
Granted	369	275.31	140	260.27
Vested	(383)	184.32	(113)	168.33
Cancelled and Forfeited	(13)	250.01	(17)	232.51
Non-vested at December 31, 2022	583	$ 226.04	646	$ 190.33

There are approximately 12 thousand performance-based stock units and 18 thousand restricted stock units that are non-vested at December 31, 2022 which will be settled in cash due to foreign regulatory limitations. The liability related to these grants reflects the current estimate of performance that will be achieved and the current share price.

As of December 31, 2022, $42 million of unrecognized compensation cost related to performance-based awards and $32 million of unrecognized compensation cost related to the restricted stock unit awards is expected to be recognized primarily through the first quarter of 2025.

NOTE 16. RETIREMENT PROGRAMS

Defined Benefit Pension Plans – U.S.

The Linde retirement plans are non-contributory defined benefit plans covering eligible employees and its participating affiliates. Effective July 1, 2002, the Linde U.S. Pension Plan was amended to give participating employees a one-time irrevocable choice between a traditional benefit (the "Traditional Design") and an account-based benefit (the "Account-Based Design"). The Traditional Design pays a monthly benefit based on years of service and average pay during the last

years of the participant's career with Linde. The Account-Based Design gives participants annual pay credits equal to 4% of eligible compensation, plus interest credits based on long-term treasury rates on the accumulated account balance. This new formula applies to all new employees hired after April 30, 2002 into businesses adopting this plan. The U.S. pension plan assets are comprised of a diversified mix of investments, including corporate equities, government securities and corporate debt securities. Linde has several plans that provide supplementary retirement benefits primarily to higher level employees that are unfunded and are nonqualified for federal tax purposes. Pension coverage for employees of certain of Linde's non-U.S. subsidiaries generally is provided by those companies through separate plans. Obligations under such plans are primarily provided for through diversified investment portfolios, with some smaller plans provided for under insurance policies or by book reserves.

Defined Benefit Pension Plans – Non-U.S.

Linde has Non-U.S., defined benefit commitments primarily in Germany and the U.K that include pension plan assets comprised of a diversified mix of investments. The defined benefit commitments in Germany relate to old age pensions, invalidity pensions and surviving dependents pensions. These commitments also take into account vested rights for periods of service prior to January 1, 2002 based on earlier final-salary pension plan rules. In addition, there are direct commitments in respect of the salary conversion scheme for the form of cash balance plans. The resulting pension payments are calculated on the basis of an interest guarantee and the performance of the corresponding investment. There are no minimum funding requirements. The pension obligations in Germany are partly funded by a Contractual Trust Agreement (CTA). Defined benefit commitments in the U.K. prior to July 1, 2003 are earnings-related and dependent on the period of service. Such commitments relate to old age pensions, invalidity pensions and surviving dependents pensions. Beginning in April 1, 2011, the amount of future increases in inflation-linked pensions and of increases in pensionable emoluments was restricted.

Multi-employer Pension Plans

In the United States Linde participates in eight multi-employer defined benefit pension plans ("MEPs"), pursuant to the terms of collective bargaining agreements, that cover approximately 200 union-represented employees. The collective bargaining agreements expire on different dates through 2026. In connection with such agreements, the company is required to make periodic contributions to the MEPs in accordance with the terms of the respective collective bargaining agreements. Linde's participation in these plans is not material either at the plan level or in the aggregate. For all MEPs, Linde's contributions were significantly less than 1% of the total contributions to each plan for 2021 and 2020. Total 2022 contributions were not yet available from the MEPs.

Linde has obtained the most recently available Pension Protection Act ("PPA") annual funding notices from the Trustees of the MEPs. As of December 31, 2022, there were three Red Zone plans, deemed to be in "critical" or "critical and declining" status that have implemented financial improvement or rehabilitation plans. Linde does not currently anticipate significant future obligations due to the funding status of these plans and such obligation would be immaterial. If Linde determined it was probable that it would withdraw from an MEP, the company would record a liability for its portion of the MEP's unfunded pension obligations, as calculated at that time. Historically, such withdrawal payments have not been significant.

Defined Contribution Plans

Linde's U.S. employees are eligible to participate in defined contribution savings plans offered by their applicable business. Employee contribution percentages vary by plan and are subject to the maximum allowable by IRS regulations.The cost for these defined contribution plans was $56 million in 2022, $51 million in 2021 and $46 million in 2020 (these costs are not included in the tables that follow).

The defined contribution plans include a non-leveraged employee stock ownership plan ("ESOP") which covers all employees participating in this plan. The collective number of shares of Linde ordinary shares in the ESOP totaled 1,733,281 at December 31, 2022.

Certain non-U.S. subsidiaries of the company also sponsor defined contribution plans where contributions are determined under various formulas. The expense for these plans was $80 million in 2022, $101 million in 2021 and $106 million in 2020 (these expenses are not included in the tables that follow).

Postretirement Benefits Other Than Pensions (OPEB)

Linde provides health care and life insurance benefits to certain eligible retired employees. These benefits are provided through various insurance companies and healthcare providers. The company does not currently fund its postretirement benefits obligations. Linde's retiree plans may be changed or terminated by Linde at any time for any reason with no liability to current or future retirees.

Linde uses a measurement date of December 31 for its pension and other post-retirement benefit plans.

Pension and Postretirement Benefit Costs

The components of net pension and postretirement benefits other than pension ("OPEB") costs for 2022, 2021 and 2020 are shown in the table below:

(Millions of dollars)	Year Ended December 31, 2022	2021	2020
Amount recognized in Operating Profit			
Service cost	$ 127	$ 157	$ 152
Amount recognized in Net pension and OPEB cost (benefit), excluding service cost			
Interest cost	201	154	213
Expected return on plan assets	(518)	(521)	(482)
Net amortization and deferral	74	171	86
Settlement charges (a)	6	4	6
	$ (237)	$ (192)	$ (177)
Net periodic benefit cost (benefit)	$ (110)	$ (35)	$ (25)

(a) Settlement charges were triggered by lump sum benefit payments made from a U.S. non-qualified plan.

Funded Status

Changes in the benefit obligation and plan assets for Linde's pension and OPEB programs, including reconciliation of the funded status of the plans to amounts recorded in the consolidated balance sheet, as of December 31, 2022 and 2021 are shown below.

	Year Ended December 31,			
	2022		2021	
(Millions of dollars)	U.S.	Non-U.S.	U.S.	Non-U.S.
Change in Benefit Obligation ("PBO")				
Benefit obligation, January 1	$ 2,719	$ 9,398	$ 2,895	$ 10,010
Service cost	34	93	39	118
Interest cost	60	141	48	106
Divestitures	—	—	—	(13)
Participant contributions	11	17	11	19
Plan amendment	—	—	—	—
Actuarial loss (gain)	(528)	(2,972)	(101)	(210)
Benefits paid	(158)	(296)	(166)	(333)
Plan settlement	(9)	(8)	(7)	(13)
Foreign currency translation and other changes	—	(787)	—	(286)
Benefit obligation, December 31	$ 2,129	$ 5,586	$ 2,719	$ 9,398
Accumulated benefit obligation ("ABO")	$ 1,982	$ 5,508	$ 2,503	$ 9,278
Change in Plan Assets				
Fair value of plan assets, January 1	$ 2,448	$ 7,968	$ 2,310	$ 7,653
Actual return on plan assets	(421)	(1,302)	281	728
Company contributions	—	51	—	42
Participant contributions	—	17	—	19
Benefits paid from plan assets	(136)	(248)	(143)	(272)
Divestitures	—	—	—	(14)
Foreign currency translation and other changes	—	(692)	—	(188)
Fair value of plan assets, December 31	$ 1,891	$ 5,794	$ 2,448	$ 7,968
Funded Status, End of Year	$ (238)	$ 208	$ (271)	$ (1,430)
Recorded in the Balance Sheet (Note 7)				
Other long-term assets	$ 13	$ 648	$ 15	$ 124
Other current liabilities	(38)	(13)	(25)	(13)
Other long-term liabilities	(213)	(427)	(261)	(1,541)
Net amount recognized, December 31	$ (238)	$ 208	$ (271)	$ (1,430)
Amounts recognized in accumulated other comprehensive income (loss) consist of:				
Net actuarial loss (gain)	$ 357	$ (343)	$ 364	$ 1,078
Prior service cost (credit)	(12)	4	(13)	6
Deferred tax obligation (benefit) (Note 7)	(85)	139	(88)	(217)
Amount recognized in accumulated other comprehensive income (loss) (Note 7)	$ 260	$ (200)	$ 263	$ 867

Comparative funded status information as of December 31, 2022 and 2021 for select non-U.S. pension plans is presented in the table below as the benefit obligations of these plans are considered to be significant relative to the total benefit obligation:

(Millions of dollars)	United Kingdom 2022	Germany 2022	Other Non-U.S. 2022	Total Non-U.S. 2022
Benefit obligation, December 31	$ 3,100	$ 1,485	$ 1,001	$ 5,586
Fair value of plan assets, December 31	3,625	1,285	884	5,794
Funded Status, End of Year	$ 525	$ (200)	$ (117)	$ 208

(Millions of dollars)	United Kingdom 2021	Germany 2021	Other Non-U.S. 2021	Total Non-U.S. 2021
Benefit obligation, December 31	$ 5,879	$ 2,240	$ 1,279	$ 9,398
Fair value of plan assets, December 31	5,577	1,359	1,032	7,968
Funded Status, End of Year	$ (302)	$ (881)	$ (247)	$ (1,430)

The changes in plan assets and benefit obligations recognized in other comprehensive income in 2022 and 2021 are as follows:

(Millions of dollars)	Pensions 2022	Pensions 2021
Current year net actuarial losses (gains)*	$ (1,259)	$ (787)
Amortization of net actuarial gains (losses)	(75)	(170)
Amortization of prior service credits (costs)	1	(1)
Pension settlements	(6)	(4)
Foreign currency translation and other changes	(90)	(39)
Total recognized in other comprehensive income	$ (1,429)	$ (1,001)

* Pension net actuarial gains in 2022 are largely driven by the continued increase in the discount rate environment resulting in actuarial gains from a lower PBO, which is partially offset by unfavorable plan asset experience for both non-U.S. and U.S. plans. In 2021, the actuarial gains were attributable to an increase in actual return on assets and favorability generated from a lower PBO due the initial increase in discount rates.

The following table provides information for pension plans where the accumulated benefit obligation exceeds the fair value of plan assets:

(Millions of dollars) *Year Ended December 31,*	Pensions 2022 U.S.	Pensions 2022 Non-U.S.	Pensions 2021 U.S.	Pensions 2021 Non-U.S.
Accumulated benefit obligation ("ABO")	$ 1,895	$ 1,848	$ 2,387	$ 8,404
Fair value of plan assets	$ 1,791	$ 1,472	$ 2,317	$ 6,947

The following table provides information for pension plans where the projected benefit obligation exceeds the fair value of plan assets:

(Millions of dollars) *Year Ended December 31,*	Pensions 2022 U.S.	Pensions 2022 Non-U.S.	Pensions 2021 U.S.	Pensions 2021 Non-U.S.
Projected benefit obligation ("PBO")	$ 1,948	$ 1,901	$ 2,467	$ 8,499
Fair value of plan assets	$ 1,791	$ 1,478	$ 2,317	$ 6,964

Assumptions

The assumptions used to determine benefit obligations are as of the respective balance sheet dates and the assumptions used to determine net benefit cost are as of the previous year-end, as shown below:

	Pensions			
	U.S.		Non-U.S.	
	2022	2021	2022	2021
Weighted average assumptions used to determine benefit obligations at December 31,				
Discount rate	5.35%	2.78%	4.58%	1.82%
Interest crediting rate	4.02%	2.06%	2.13%	1.03%
Rate of increase in compensation levels	3.25%	3.25%	2.59%	2.55%
Weighted average assumptions used to determine net periodic benefit cost for years ended December 31,				
Discount rate	2.78%	2.40%	1.82%	1.36%
Interest crediting rate	2.06%	1.57%	1.03%	1.01%
Rate of increase in compensation levels	3.25%	3.25%	2.55%	2.55%
Expected long-term rate of return on plan assets (1)	7.00%	7.00%	5.60%	5.28%

(1) The expected long term rate of return on the U.S. and non-U.S. plan assets is estimated based on the plans' investment strategy and asset allocation, historical capital market performance and, to a lesser extent, historical plan performance. For the U.S. plans, the expected rate of return of 7.00% was derived based on the target asset allocation of 50%-70% equity securities (approximately 7.70% expected return), 20%-50% fixed income securities (approximately 5.40% expected return) and 2%-8% alternative investments (approximately 6.30% expected return). For the non-U.S. plans, the expected rate of return was derived based on the weighted average target asset allocation of 15%-25% equity securities (approximately 6.40% expected return), 30%-50% fixed income securities (approximately 5.30% expected return), and 30%-50% alternative investments (approximately 5.00% expected return). For the U.S. plan assets, the actual annualized total return for the most recent 10-year period ended December 31, 2022 was approximately 7.00%. For the non-U.S. plan assets, the actual annualized total return for the same period was approximately 5.10%. Changes to plan asset allocations and investment strategy over this time period limit the value of historical plan performance as a factor in estimating the expected long term rate of return. For 2023, the expected long-term rate of return on plan assets will be 7.00% for the U.S. plans. For 2023, the expected weighted average long-term rate of return for non-U.S. plans will be 5.60%.

Pension Plan Assets

The investments of the U.S. pension plan are managed to meet the future expected benefit liabilities of the plan over the long term by investing in diversified portfolios consistent with prudent diversification and historical and expected capital market returns. Investment strategies are reviewed by management and investment performance is tracked against appropriate benchmarks. There are no concentrations of risk as it relates to the assets within the plans. The non-U.S. pension plans are managed individually based on diversified investment portfolios, with different target asset allocations that vary for each plan. Weighted-average asset allocations at December 31, 2022 and 2021 for Linde's U.S. and non-U.S. pension plans, as well as respective asset allocation ranges by major asset category, are generally as follows:

	U.S.				Non-U.S.			
Asset Category	**Target 2022**	**Target 2021**	**2022**	**2021**	**Target 2022**	**Target 2021**	**2022**	**2021**
Equity securities	50%-70%	40%-60%	60%	66%	15%-25%	15%-25%	20%	27%
Fixed income securities	20%-50%	30%-50%	29%	25%	30%-50%	30%-50%	30%	35%
Other	2%-8%	5%-15%	11%	9%	30%-50%	30%-50%	50%	38%

The following table summarizes pension assets measured at fair value by asset category at December 31, 2022 and 2021. Transfers of assets were not material for the year ended December 31, 2022 and 2021. See Note 13 for the definition of levels within the fair value hierarchy:

	Fair Value Measurements Using							
	Level 1		Level 2		Level 3 **		Total	
(Millions of dollars)	2022	2021	2022	2021	2022	2021	2022	2021
Cash and cash equivalents	$ 313	$ 259	$ —	$ —	$ —	$ —	$ 313	$ 259
Equity securities:								
Global equities	778	1,633	—	—	—	—	778	1,633
Mutual funds	248	314	—	—	—	—	248	314
Fixed income securities:								
Government bonds	—	—	1,317	1,624	—	—	1,317	1,624
Emerging market debt	—	—	245	509	—	—	245	509
Mutual funds	101	121	55	12	—	—	156	133
Corporate bonds	—	—	372	647	—	—	372	647
Bank loans	—	—	18	253	—	—	18	253
Alternative investments:								
Real estate funds	—	—	—	—	353	360	353	360
Private debt	—	—	—	—	1,360	1,368	1,360	1,368
Insurance contracts	—	—	—	—	46	12	46	12
Liquid alternative	—	—	982	1,193	—	—	982	1,193
Other investments	1	1	39	58	—	—	40	59
Total plan assets at fair value, December 31,	$ 1,441	$ 2,328	$ 3,028	$ 4,296	$ 1,759	$ 1,740	$ 6,228	$ 8,364
Pooled funds *							1,457	2,052
Total fair value plan assets December 31,							$ 7,685	$ 10,416

* Pooled funds are measured using the net asset value ("NAV") as a practical expedient for fair value as permissible under the accounting standard for fair value measurements and have not been categorized in the fair value hierarchy.

** The following table summarizes changes in fair value of the pension plan assets classified as level 3 for the periods ended December 31, 2022 and 2021:

(Millions of dollars)	Insurance Contracts	Real Estate Funds	Private Debt	Total
Balance, December 31, 2020	$ 11	$ 335	$ 1120	$ 1466
Gain/(Loss) for the period	1	27	28	56
Purchases	—	13	289	302
Sales	—	(4)	(42)	(46)
Transfer into/ (out of) Level 3	1	(1)	—	—
Foreign currency translation	(1)	(10)	(27)	(38)
Balance, December 31, 2021	12	360	1,368	1,740
Gain/(Loss) for the period	—	5	93	98
Purchases	2	18	63	83
Sales	—	(22)	(34)	(56)
Transfer into / (out of) Level 3	33	—	—	33
Foreign currency translation	(1)	(8)	(130)	(139)
Balance, December 31, 2022	$ 46	$ 353	$ 1,360	$ 1,759

The descriptions and fair value methodologies for the company's pension plan assets are as follows:

Cash and Cash Equivalents – This category includes cash and short-term interest bearing investments with maturities of three months or less. Investments are valued at cost plus accrued interest. Cash and cash equivalents are classified within level 1 of the valuation hierarchy.

Equity Securities – This category is comprised of shares of common stock in U.S. and non-U.S. companies from a diverse set of industries and size. Common stock is valued at the closing market price reported on a U.S. or non-U.S. exchange where the security is actively traded. Equity securities are classified within level 1 of the valuation hierarchy.

Mutual Funds – These categories consist of publicly and privately managed funds that invest primarily in marketable equity and fixed income securities. The fair value of these investments is determined by reference to the net asset value of the underlying securities of the fund. Shares of publicly traded mutual funds are valued at the net asset value quoted on the exchange where the fund is traded and are primarily classified as level 1 within the valuation hierarchy.

Emerging Market Debt - This category includes fixed income debt issued by countries with developing economies as well as by corporations within those nations. They typically have higher yields but lower credit ratings relative to developed country corporate and government bonds. The fair values for these investments are classified as level 2 within the valuation hierarchy.

U.S. and Non-U.S. Government Bonds – This category includes U.S. treasuries, U.S. federal agency obligations and non-U.S. government debt. The majority of these investments do not have quoted market prices available for a specific government security and so the fair value is determined using quoted prices of similar securities in active markets and is classified as level 2 within the valuation hierarchy.

Corporate Bonds – This category is comprised of corporate bonds of U.S. and non-U.S. companies from a diverse set of industries and size. The fair values for U.S. and non-U.S. corporate bonds are determined using quoted prices of similar securities in active markets and observable data or broker or dealer quotations. The fair values for these investments are classified as level 2 within the valuation hierarchy.

Pooled Funds – Pooled fund NAVs are provided by the trustee and are determined by reference to the fair value of the underlying securities of the trust, less its liabilities, which are valued primarily through the use of directly or indirectly observable inputs. Depending on the pooled fund, underlying securities may include marketable equity securities or fixed income securities.

Bank Loans – This category is comprised of traded syndicated loans of larger corporate borrowers. Such loans are issued by sub-investment grade rated companies both in the U.S. and internationally and are syndicated by investment banks to institutional investors. They are regularly traded in an active dealer market comprised of large investment banks, which supply bid and offer quotes and are therefore classified within level 2 of the valuation hierarchy.

Liquid Alternative Investments – This category is comprised of investments in alternative mutual funds whose holdings include liquid securities, cash, and derivatives. Such funds focus on diversification and employ a variety of investing strategies including long/short equity, multi-strategy, and global macro. The fair value of these investments is determined by reference to the net asset value of the underlying holdings of the fund, which can be determined using observable data (e.g., indices, yield curves, quoted prices of similar securities), and is classified within level 2 of the valuation hierarchy.

Insurance Contracts – This category is comprised of purchased annuity insurance contracts (annuity contract buy-ins) and is intended to mitigate the Company's exposure to certain risks, such as longevity risk. The fair value is calculated based on the cash surrender value of the purchased annuity insurance contract, which is determined based on such factors as the fair value of the underlying assets and discounted cash flows. These contracts are with highly rated insurance companies. Insurance contracts are classified within level 3 of the valuation hierarchy.

Real Estate Funds – This category includes real estate properties, partnership equities and investments in operating companies. The fair value of the assets is determined using discounted cash flows by estimating an income stream for the property plus a reversion into a present value at a risk adjusted rate. Yield rates and growth assumptions utilized are derived from market transactions as well as other financial and industry data. The fair value for these investments are classified within level 3 of the valuation hierarchy.

Private Debt – This category includes non-traded, privately-arranged loans between one or a small group of private debt investment managers and corporate borrowers, which are typically too small to access the syndicated market and have no credit rating. This category also includes similar loans to real estate companies or individual properties. Loans included in this category are valued at par value, are held to maturity or to call, and are classified within level 3 of the valuation hierarchy.

Contributions

At a minimum, Linde contributes to its pension plans to comply with local regulatory requirements (e.g., ERISA in the United States). Discretionary contributions in excess of the local minimum requirements are made based on many factors, including long-term projections of the plans' funded status, the economic environment, potential risk of overfunding, pension insurance costs and alternative uses of the cash. Changes to these factors can impact the timing of discretionary contributions from year to year. Pension contributions were $51 million in 2022, $42 million in 2021 and $91 million in 2020. Estimated required contributions for 2023 are currently expected to be in the range of $40 million to $50 million.

Estimated Future Benefit Payments

The following table presents estimated future benefit payments, net of participant contributions:

(Millions of dollars)	Pensions	
Year Ended December 31,	U.S.	Non-U.S.
2023	$216	$ 320
2024	158	319
2025	161	327
2026	160	346
2027	163	345
2028-2032	813	1,788

NOTE 17. COMMITMENTS AND CONTINGENCIES

The company accrues non income-tax liabilities for contingencies when management believes that a loss is probable and the amounts can be reasonably estimated, while contingent gains are recognized only when realized. In the event any losses are sustained in excess of accruals, they will be charged against income at that time. Attorney fees are recorded as incurred. Commitments represent obligations, such as those for future purchases of goods or services, that are not yet recorded on the company's balance sheet as liabilities. The company records liabilities for commitments when incurred (i.e., when the goods or services are received).

Contingent Liabilities

Linde is subject to various lawsuits and government investigations that arise from time to time in the ordinary course of business. These actions are based upon alleged environmental, tax, antitrust and personal injury claims, among others. Linde has strong defenses in these cases and intends to defend itself vigorously. It is possible that the company may incur losses in connection with some of these actions in excess of accrued liabilities. Management does not anticipate individually or in the aggregate such losses would have a material adverse effect on the company's consolidated financial position or liquidity; however, it is possible that the final outcomes could have a significant impact on the company's reported results of operations in any given period.

Significant matters are:

- During 2009, the Brazilian government published Law 11941/2009 instituting a new voluntary amnesty program ("Refis Program") which allowed Brazilian companies to settle certain federal tax disputes at reduced amounts. During 2009, the company decided that it was economically beneficial to settle many of its outstanding federal tax disputes and such disputes were enrolled in the Refis Program, subject to final calculation and review by the Brazilian federal government. The company recorded estimated liabilities based on the terms of the Refis Program. Since 2009, Linde has been unable to reach final agreement on the calculations and initiated litigation against the government in an attempt to resolve certain items. Open issues relate to the following matters: (i) application of cash deposits and net operating loss carryforwards to satisfy obligations and (ii) the amount of tax reductions available under the Refis Program. It is difficult to estimate the timing of resolution of legal matters in Brazil.
- At December 31, 2022 the most significant non-income and income tax claims in Brazil, after enrollment in the Refis Program, relate to state VAT tax matters and a federal income tax matter where the taxing authorities are challenging the tax rate that should be applied to income generated by a subsidiary company that previously

received favorable rulings. The total estimated exposure relating to such claims, including interest and penalties, as appropriate, is approximately $240 million. Linde has not recorded any liabilities related to such claims based on management judgments, after considering judgments and opinions of outside counsel. Because litigation in Brazil historically takes many years to resolve, it is very difficult to estimate the timing of resolution of these matters; however, it is possible that certain of these matters may be resolved within the near term. The company is vigorously defending against the proceedings. On February 8, 2023, the Brazilian Supreme Court issued a decision confirming the constitutionality of a specific federal income tax, with retroactive effect. This decision has not yet been finalized and is subject to ongoing motions for clarification. The timing of when this decision will be final and the potential impact on the company's tax liability remain uncertain at this time.

- On September 1, 2010, CADE (Brazilian Administrative Council for Economic Defense) announced alleged anticompetitive activity on the part of five industrial gas companies in Brazil and imposed fines. Originally, CADE imposed a civil fine of R$2.2 billion Brazilian reais ($417 million) on White Martins, the Brazil-based subsidiary of Linde Inc. The fine was reduced to R$1.7 billion Brazilian reais ($322 million) due to a calculation error made by CADE. The fine against White Martins was overturned by the Ninth Federal Court of Brasilia. CADE appealed this decision, and the Federal Court of Appeals rejected CADE's appeal and confirmed the decision of the Ninth Federal Court of Brasilia. CADE has filed an appeal with the Superior Court of Justice and a decision is pending.

  Similarly, on September 1, 2010, CADE imposed a civil fine of R$237 million Brazilian reais ($45 million) on Linde Gases Ltda., the former Brazil-based subsidiary of Linde AG, which was divested to MG Industries GmbH on March 1, 2019 and with respect to which Linde provided a contractual indemnity. The fine was reduced to R$188 million Brazilian reais ($36 million) due to a calculation error made by CADE. The fine against Linde Gases Ltda. was overturned by the Seventh Federal Court in Brasilia. CADE appealed this decision, and the Federal Court of Appeals rejected CADE's appeal and confirmed the decision of the Seventh Federal Court of Brasilia. CADE filed an appeal with the Superior Court of Justice, and a final decision is pending.

  Linde has strong defenses and is confident that it will prevail on appeal and have the fines overturned. Linde strongly believes that the allegations of anticompetitive activity against our current and former Brazilian subsidiaries are not supported by valid and sufficient evidence. Linde believes that this decision will not stand up to judicial review and deems the possibility of cash outflows to be extremely unlikely. As a result, no reserves have been recorded as management does not believe that a loss from this case is probable.

- On and after April 23, 2019 former shareholders of Linde AG filed appraisal proceedings at the District Court (Landgericht) Munich I (Germany), seeking an increase of the cash consideration paid in connection with the previously completed cash merger squeeze-out of all of Linde AG's minority shareholders for €189.46 per share. Any such increase would apply to all 14,763,113 Linde AG shares that were outstanding on April 8, 2019, when the cash merger squeeze-out was completed. The period for plaintiffs to file claims expired on July 9, 2019. The company believes the consideration paid was fair and that the claims lack merit, and no reserve has been established. We cannot estimate the timing of resolution.

- On December 30, 2022, the Russian Arbitration Court of the St. Petersburg and Leningrad Region issued an injunction preventing (i) the sale of any shares in Linde's subsidiaries and joint ventures in Russia, and (ii) the disposal of any of assets in those entities exceeding 5% of the relevant company's overall asset value. The injunction is not expected to have any impact on the operations of Linde's Russian businesses. The injunction was requested by RusChemAlliance (RCA) as a preliminary measure to secure payment of an eventual award under an arbitration proceeding RCA intends to file against Linde Engineering for alleged breach of contract under the agreement to build a gas processing plant in Ust Luga, Russia entered into between a consortium of Linde Engineering and Renaissance Heavy Industries LLC, and RCA on July 7, 2021. Performance of the agreement was lawfully suspended by Linde Engineering on May 27, 2022 in compliance with applicable sanctions and in accordance with a decision by the sanctions authority in Germany.

  As of December 31, 2022, Linde had approximately $1.2 billion of advance payments recorded in contract liabilities related to engineering projects with RCA which are subject to sanctions and have been suspended accordingly as of May 27, 2022. Contract liabilities are typically recognized as revenue as performance obligations are satisfied under contract terms. Linde deconsolidated its Russian gas and engineering business entities as of June 30, 2022 (see Note 3), and the remaining investment value of its Russia subsidiaries is immaterial. As such, the obligation to satisfy any residual contract liabilities is not expected to have an adverse impact on earnings, but may result in net cash outflows.

It is difficult to estimate the timing of resolution of this matter. The company intends to vigorously defend its interests in both the injunction and arbitration proceedings.

Commitments

At December 31, 2022, Linde had undrawn outstanding letters of credit, bank guarantees and surety bonds valued at approximately $3,578 million from financial institutions. These relate primarily to customer contract performance guarantees (including plant construction in connection with certain on-site contracts), self-insurance claims and other commercial and governmental requirements, including non-U.S. litigation matters.

Other commitments related to leases, tax liabilities for uncertain tax positions, long-term debt, other post retirement and pension obligations are summarized elsewhere in the financial statements (see Notes 4, 5, 11, and 16).

NOTE 18. SEGMENT INFORMATION

Linde's operations consist of two major product lines: industrial gases and engineering. As further described in the following paragraph, Linde's industrial gases operations are managed on a geographic basis, which represent three of the company's reportable segments – Americas, EMEA (Europe/Middle East/Africa), and APAC (Asia/South Pacific); a fourth reportable segment, which represents the company's Engineering business, designs and manufactures equipment for air separation and other industrial gas applications specifically for end customers and is managed on a worldwide basis operating in all three geographic segments. Other consists of corporate costs and a few smaller businesses which individually do not meet the quantitative thresholds for separate presentation.

The industrial gases product line centers on the manufacturing and distribution of atmospheric gases (oxygen, nitrogen, argon, rare gases) and process gases (carbon dioxide, helium, hydrogen, electronic gases, specialty gases, acetylene). Many of these products are co-products of the same manufacturing process. Linde manufactures and distributes nearly all of its products and manages its customer relationships on a regional basis. Linde's industrial gases are distributed to various end-markets within a regional segment through one of three basic distribution methods: on-site or tonnage; merchant or bulk; and packaged or cylinder gases. The distribution methods are generally integrated in order to best meet the customer's needs and very few of its products can be economically transported outside of a region. Therefore, the distribution economics are specific to the various geographies in which the company operates and are consistent with how management assesses performance.

The company's measure of profit/loss for segment reporting is segment operating profit. Segment operating profit is defined as operating profit excluding purchase accounting impacts of the Linde AG merger, intercompany royalties, and items not indicative of ongoing business trends. This is the manner in which the company's CODM assesses performance and allocates resources. Similarly, total assets have not been included as this is not provided to the CODM for their assessment.

The table below presents information about reportable segments for the years ended December 31, 2022, 2021 and 2020.

(Millions of dollars)	2022	2021	2020
Sales (a)			
Americas	$ 13,874	$ 12,103	$ 10,459
EMEA	8,443	7,643	6,449
APAC	6,480	6,133	5,687
Engineering	2,762	2,867	2,851
Other	1,805	2,047	1,797
Total Sales	$ 33,364	$ 30,793	$ 27,243

	2022	2021	2020
Segment Operating Profit			
Americas	$ 3,732	$ 3,368	$ 2,773
EMEA	2,013	1,889	1,465
APAC	1,670	1,502	1,277
Engineering	555	473	435
Other	(66)	(56)	(153)
Reported Segment operating profit	7,904	7,176	5,797
Russia-Ukraine conflict and other charges (Note 3)	(1,029)	(273)	(506)
Purchase accounting impacts – Linde AG	(1,506)	(1,919)	(1,969)
Total operating profit	$ 5,369	$ 4,984	$ 3,322

	2022	2021	2020
Depreciation and Amortization			
Americas	$ 1,320	$ 1,243	$ 1,196
EMEA	661	752	723
APAC	593	611	619
Engineering	33	39	36
Other	116	127	132
Segment depreciation and amortization	2,723	2,772	2,706
Purchase accounting impacts – Linde AG	1,481	1,863	1,920
Total depreciation and amortization	$ 4,204	$ 4,635	$ 4,626

	2022	2021	2020
Capital Expenditures and Acquisitions			
Americas	$ 1,698	$ 1,354	$ 1,425
EMEA	550	669	670
APAC	889	995	1,214
Engineering	28	25	13
Other	118	131	146
Total Capital Expenditures and Acquisitions	$ 3,283	$ 3,174	$ 3,468

	2022	2021	2020
Sales by Major Country			
United States	$ 10,553	$ 9,123	$ 8,475
Germany (c)	3,662	3,601	3,740
China	2,643	2,562	2,061
United Kingdom	1,954	2,060	1,595
Australia	1,372	1,307	1,071
Brazil	1,158	1,065	822
Other – non-U.S.	12,022	11,075	9,479
Total sales	$ 33,364	$ 30,793	$ 27,243

	2022	2021	2020
Long-lived Assets by Major Country (b)			
United States	$ 7,663	$ 7,659	$ 7,777
Germany	1,678	2,003	2,394
China	2,176	2,385	2,413
United Kingdom	704	1,078	1,313
Australia	688	872	1,105
Brazil	720	705	734
Other – non-U.S.	9,919	11,301	12,976
Total long-lived assets	$ 23,548	$ 26,003	$ 28,711

(a) Sales reflect external sales only. Intersegment sales, primarily from Engineering to the industrial gases segments, were $1,035 million, $896 million and $786 million for the year ended December 31, 2022, 2021 and 2020, respectively.

(b) Long-lived assets include property, plant and equipment—net.

(c) Sales in Germany include Engineering sales to third parties, locally and internationally, and represents 44% , 53% and 62% of Germany sales in 2022 , 2021 and 2020, respectively.

19. REVENUE RECOGNITION

Revenue is accounted for in accordance with ASC 606. Revenue is recognized as control of goods or services are transferred to customers in an amount that reflects the consideration to which an entity expects to be entitled to receive in exchange for the goods or services.

Contracts with Customers

Linde serves a diverse group of industries including healthcare, chemicals and energy, manufacturing, metals and mining, food and beverage, and electronics.

Industrial Gases

Within each of the company's geographic segments for industrial gases, there are three basic distribution methods: (i) on-site or tonnage; (ii) merchant or bulk liquid; and (iii) packaged or cylinder gases. The distribution method used by Linde to supply a customer is determined by many factors, including the customer's volume requirements and location. The distribution method generally determines the contract terms with the customer and, accordingly, the revenue recognition accounting practices. Linde's primary products in its industrial gases business are atmospheric gases (oxygen, nitrogen, argon, rare gases) and process gases (carbon dioxide, helium, hydrogen, electronic gases, specialty gases, acetylene). These products are generally sold through one of the three distribution methods.

Following is a description of each of the three industrial gases distribution methods and the respective revenue recognition policies:

On-site. Customers that require the largest volumes of product and that have a relatively constant demand pattern are supplied by cryogenic and process gas on-site plants. Linde constructs plants on or adjacent to these customers' sites and supplies the product directly to customers by pipeline. Where there are large concentrations of customers, a single pipeline may be connected to several plants and customers. On-site product supply contracts generally are total requirement contracts with terms typically ranging from 10-20 years and contain minimum purchase requirements and price escalation provisions. Many of the cryogenic on-site plants also produce liquid products for the merchant market. Therefore, plants are typically not dedicated to a single customer. Additionally, Linde is responsible for the design, construction, operations and maintenance of the plants and our customers typically have no involvement in these activities. Advanced air separation processes also allow on-site delivery to customers with smaller volume requirements.

The company's performance obligations related to on-site customers are satisfied over time as customers receive and obtain control of the product. Linde has elected to apply the practical expedient for measuring progress towards the completion of a performance obligation and recognizes revenue as the company has the right to invoice each customer, which generally corresponds with product delivery. Accordingly, revenue is recognized when product is delivered to the customer and the company has the right to invoice the customer in accordance with the contract terms. Consideration in these contracts is generally based on pricing which fluctuates with various price indices. Variable components of consideration exist within on-site contracts but are considered constrained.

Merchant. Merchant deliveries generally are made from Linde's plants by tanker trucks to storage containers at the customer's site. Due to the relatively high distribution cost, merchant oxygen and nitrogen generally have a relatively small distribution radius from the plants at which they are produced. Merchant argon, hydrogen and helium can be shipped much longer distances. The customer agreements used in the merchant business are usually three to seven year supply agreements based on the requirements of the customer. These contracts generally do not contain minimum purchase requirements or volume commitments.

The company's performance obligations related to merchant customers are generally satisfied at a point in time as the customers receive and obtain control of the product. Revenue is recognized when product is delivered to the customer and the company has the right to invoice the customer in accordance with the contract terms. Any variable components of consideration within merchant contracts are constrained however this consideration is not significant.

Packaged Gases. Customers requiring small volumes are supplied products in containers called cylinders, under medium to high pressure. Linde distributes merchant gases from its production plants to company-owned cylinder filling plants where cylinders are then filled for distribution to customers. Cylinders may be delivered to the customer's site or picked up by the customer at a packaging facility or retail store. Linde invoices the customer for the industrial gases and the use of the cylinder container(s). The company also sells hardgoods and welding equipment purchased from independent manufacturers. Packaged gases are generally sold under one to three-year supply contracts and purchase orders and do not contain minimum purchase requirements or volume commitments.

The company's performance obligations related to packaged gases are satisfied at a point in time. Accordingly, revenue is recognized when product is delivered to the customer or when the customer picks up product from a packaged gas facility or retail store, and the company has the right to payment from the customer in accordance with the contract terms. Any variable consideration is constrained and will be recognized when the uncertainty related to the consideration is resolved.

Engineering

The company designs and manufactures equipment for air separation and other industrial gas applications manufactured specifically for end customers. Sale of equipment contracts are generally comprised of a single performance obligation. Revenue from sale of equipment is generally recognized over time as Linde has an enforceable right to payment for performance completed to date and performance does not create an asset with alternative use. For contracts recognized over time, revenue is recognized primarily using a cost incurred input method. Costs incurred to date relative to total estimated costs at completion are used to measure progress toward satisfying performance obligations. Costs incurred include material, labor, and overhead costs and represent work contributing and proportionate to the transfer of control to the customer. Changes to cost estimates and contract modifications are typically accounted for as part of the existing contract and are recognized as a cumulative adjustments for the inception-to-date effect of such change.

Contract Assets and Liabilities

Contract assets and liabilities result from differences in timing of revenue recognition and customer invoicing. Contract assets primarily relate to sale of equipment contracts for which revenue is recognized over time. The balance represents unbilled revenue which occurs when revenue recognized under the measure of progress exceeds amounts invoiced to customers. Customer invoices may be based on the passage of time, the achievement of certain contractual milestones or a combination of both criteria. Contract liabilities include advance payments or right to consideration prior to performance under the contract. Contract liabilities are recognized as revenue as performance obligations are satisfied under contract terms. Linde has contract assets of $124 million at December 31, 2022 and $134 million at December 31, 2021. Total contract liabilities are $3,986 million at December 31, 2022 (current of $3,073 million and $913 million within deferred credits in the consolidated balance sheets). As of December 31, 2022 Linde has approximately $1.7 billion recorded in contract liabilities related to engineering projects in Russia subject to sanctions. Total contract liabilities were $3,699 million at December 31, 2021 (current contract liabilities of $2,940 million and $759 million within deferred credits in the consolidated balance sheets). Revenue recognized for the twelve months ended December 31, 2022 that was included in the contract liability at December 31, 2021 was $1,305 million. Contract assets and liabilities primarily relate to the Linde Engineering business.

Payment Terms and Other

Linde generally receives payment after performance obligations are satisfied, and customer prepayments are not typical for the industrial gases business. Payment terms vary based on the country where sales originate and local customary payment practices. Linde does not offer extended financing outside of customary payment terms. Amounts billed for sales and use taxes, value-added taxes, and certain excise and other specific transactional taxes imposed on revenue producing transactions are presented on a net basis and are not included in sales within the consolidated statement of income. Additionally, sales returns and allowances are not a normal practice in the industry and are not significant.

Disaggregated Revenue Information

As described above and in Note 18, the company manages its industrial gases business on a geographic basis, while the Engineering and Other businesses are generally managed on a global basis. Furthermore, the company believes that reporting sales by distribution method by reportable geographic segment best illustrates the nature, timing, type of customer, and contract terms for its revenues, including terms and pricing.

The following tables show sales by distribution method at the consolidated level and for each reportable segment and Other for the years ended December 31, 2022, 2021 and 2020.

(Millions of dollars)	Year Ended December 31, 2022						
Sales	**Americas**	**EMEA**	**APAC**	**Engineering**	**Other**	**Total**	**%**
Merchant	$ 3,786	$ 2,509	$ 2,220	$ —	$ 176	$ 8,691	26%
On-Site	4,048	2,415	2,471	—	—	8,934	27%
Packaged Gas	5,831	3,466	1,523	—	51	10,871	33%
Other	209	53	266	2,762	1,578	4,868	14%
	$ 13,874	$ 8,443	$ 6,480	$ 2,762	$ 1,805	$ 33,364	100%

(Millions of dollars)	Year Ended December 31, 2021						
Sales	**Americas**	**EMEA**	**APAC**	**Engineering**	**Other**	**Total**	**%**
Merchant	$ 3,279	$ 2,227	$ 2,181	$ —	$ 173	$ 7,860	26%
On-Site	3,225	1,824	2,296	—	—	7,345	24%
Packaged Gas	5,456	3,539	1,532	—	24	10,551	34%
Other	143	53	124	2,867	1,850	5,037	16%
	$ 12,103	$ 7,643	$ 6,133	$ 2,867	$ 2,047	$ 30,793	100%

(Millions of dollars)	Year Ended December 31, 2020						
Sales	**Americas**	**EMEA**	**APAC**	**Engineering**	**Other**	**Total**	**%**
Merchant	$ 2,839	$ 1,870	$ 2,005	$ —	$ 145	$ 6,859	25%
On-Site	2,513	1,354	2,049	—	—	5,916	22%
Packaged Gas	5,034	3,175	1,559	—	22	9,790	36%
Other	73	50	74	2,851	1,630	4,678	17%
	$ 10,459	$ 6,449	$ 5,687	$ 2,851	$ 1,797	$ 27,243	100%

Remaining Performance Obligations

As described above, Linde's contracts with on-site customers are under long-term supply arrangements which generally require the customer to purchase their requirements from Linde and also have minimum purchase requirements. Additionally, plant sales from the Linde Engineering business are primarily contracted on a fixed price basis. The company estimates the consideration related to future minimum purchase requirements and plant sales was approximately $51 billion (excludes Russian projects which are impacted by sanctions, refer to Note 3). This amount excludes all on-site sales above minimum purchase requirements, which can be significant depending on customer needs. In the future, actual amounts will be different due to impacts from several factors, many of which are beyond the company's control including, but not limited to, timing of newly signed, terminated and renewed contracts, inflationary price escalations, currency exchange rates, and pass-through costs related to natural gas and electricity. The actual duration of long-term supply contracts ranges up to twenty years. The company estimates that approximately half of the revenue related to minimum purchase requirements will be earned in the next five years and the remaining thereafter.

20. SUBSEQUENT EVENTS

On January 6, 2023, Linde purchased the remaining 77.2% ownership interest in nexAir, LLC. nexAir, LLC is one of the largest independent packaged gas distributors in the United States with annual sales of approximately $400 million in 2022.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

Based on an evaluation of the effectiveness of Linde's disclosure controls and procedures, which was made under the supervision and with the participation of management, including Linde's principal executive officer and principal financial officer, the principal executive officer and principal financial officer have each concluded that, as of December 31, 2022, such disclosure controls and procedures are effective in ensuring that information required to be disclosed by Linde in reports that it files or submits under the Exchange Act of 1934 is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and accumulated and communicated to management including Linde's principal executive officer and principal financial officer, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting

Refer to Item 8 for Management's Report on Internal Control Over Financial Reporting as of December 31, 2022.

Changes in Internal Control over Financial Reporting

There were no changes in Linde's internal control over financial reporting that occurred during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, Linde's internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Certain information required by this item is incorporated herein by reference to the sections captioned "Corporate Governance and Board Matters – Director Nominees" and "Corporate Governance And Board Matters – "Delinquent Section 16 (a) Reports" in Linde's Proxy Statement to be filed by April 30, 2023 for the Annual General Meeting.

Identification of the Audit Committee

Linde has a separately-designated standing Audit Committee established in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934 as amended (the "Exchange Act"). The members of that audit committee are Prof. Dr. Martin H. Richenhagen (chairman), Dr. Thomas Enders, Dr. Victoria Ossadnik and Alberto Weisser and each member is independent within the meaning of the independence standards adopted by the Board of Directors and those of the New York Stock Exchange.

Audit Committee Financial Expert

The Linde Board of Directors has determined that Alberto Weisser satisfy the criteria adopted by the SEC to serve as an "audit committee financial expert" as defined by Item 407(d)(5)(ii) of Regulation S-K of the Exchange Act and is independent within the meaning of the independence standards adopted by the Board of Directors and those of the New York Stock Exchange.

Code of Ethics

Linde has adopted a code of ethics that applies to the company's directors and all employees, including its Chief Executive Officer, Chief Financial Officer, and Chief Accounting Officer. This code of ethics, including specific standards for implementing certain provisions of the code, has been approved by the Linde Board of Directors and is named the "Code of Business Integrity". This document is posted on the company's public website, www.linde.com but is not incorporated herein.

ITEM 11. EXECUTIVE COMPENSATION

Information required by this item is incorporated herein by reference to the sections captioned "Executive Compensation Matters" and "Corporate Governance and Board Matters – Director Compensation" in Linde's Proxy Statement to be filed by April 30, 2023 for the Annual General Meeting.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Equity Compensation Plans Information – The table below provides information as of December 31, 2022 about company shares that may be issued upon the exercise of options, warrants and rights granted to employees or members of Linde's Board of Directors under equity compensation plans with awards outstanding as of December 31, 2022.

EQUITY COMPENSATION PLANS TABLE

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights (a)	Weighted-average exercise price of outstanding options, warrants and rights (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by shareholders	7,961,753 (1)	$ 164.11	8,271,252 (2)
Equity compensation plans not approved by shareholders	—	—	—
Total	7,961,753	$ 164.11	8,271,252

(1) This amount includes 649,987 restricted shares and 585,550 performance shares.

(2) This amount reflects shares available for future issuances pursuant to the 2021 Linde plc Long Term Incentive Plan that was approved by shareholders on July 26, 2021.

Certain information required by this item regarding the beneficial ownership of the company's ordinary shares is incorporated herein by reference to the section captioned "Information on Share Ownership" in Linde's Proxy Statement to be filed by April 30, 2023 for the Annual General Meeting.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

Information required by this item is incorporated herein by reference to the sections captioned "Corporate Governance And Board Matters – Review, Approval or Ratification of Transactions with Related Persons," "Corporate Governance And Board Matters – Certain Relationships and Transactions," and "Corporate Governance And Board Matters – Director Independence" in Linde's Proxy Statement to be filed by April 30, 2023 for the Annual General Meeting.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Information required by this item is incorporated herein by reference to the section captioned "Audit Matters" in Linde's Proxy Statement to be filed by April 30, 2023 for the Annual General Meeting.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this report:

(i) The company's 2022 Consolidated Financial Statements and the Report of the Independent Registered Public Accounting Firm are included in Part II, Item 8. Financial Statements and Supplementary Data.

(ii) Financial Statement Schedules – All financial statement schedules have been omitted because they are not applicable or the required information is shown in the financial statements or notes thereto.

(iii) Exhibits – The exhibits filed as part of this Annual Report on Form 10-K are listed in the accompanying index.

INDEX TO EXHIBITS

Linde plc and Subsidiaries

Exhibit No.	Description
2.1	Business Combination Agreement by and among Linde Aktiengesellschaft, Praxair, Inc., Zamalight PLC, Zamalight Holdco LLC and Zamalight Subco, Inc. dated as of June 1, 2017 (Filed as Exhibit 2.1 to Praxair, Inc.'s Current Report on Form 8-K dated June 1, 2017, Filing No. 1-11037, and is incorporated herein by reference.)
2.1a	Amendment No. 1, dated August 10, 2017, to the Business Combination Agreement, by and among Praxair, Inc., Linde Aktiengesellschaft, Linde plc, Zamalight Holdco LLC and Zamalight Subco, Inc. (Filed as Exhibit 2.1 to Praxair, Inc.'s Current Report on Form 8-K dated August 10, 2017, Filing No. 1-11037, and is incorporated hereby by reference.)
**2.2	Sale and Purchase Agreement, dated July 5, 2018, by and among Praxair, Inc., Taiyo Nippon Sanso Corporation ("Taiyo"), and Linde plc with respect to the sale of a majority of Praxair's businesses in Europe to Taiyo in connection with the Business Combination Agreement (Filed as Exhibit 2.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2018, File No. 1-38730, and is incorporated hereby by reference).
**2.3	Sale and Purchase Agreement, dated July 16, 2018, by and among Linde AG, Praxair, Inc., MG Industries GmbH, Messer Canada Inc., MG Industries USA, Inc. (the MG entities and Messer Canada, Inc. being collectively referred to as "Messer"), and Linde plc with respect to the sale of certain assets of Linde AG in the Americas and certain assets of Praxair, Inc. to Messer in connection with the Business Combination Agreement (Filed as Exhibit 2.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2018, File No. 1-38730, and is incorporated hereby by reference).
**2.3a	First Amendment dated September 21, 2018 to the Sale and Purchase Agreement, dated July 16, 2018, by and among Linde AG, Praxair, Inc., Messer, and Linde plc with respect to the sale of certain additional assets of Linde AG in the Americas to Messer in connection with the Business Combination Agreement (Filed as Exhibit 2.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2018, File No. 1-38730, and is incorporated hereby by reference).
**2.3b	Second Amendment dated October 19, 2018 to the Sale and Purchase Agreement, dated July 16, 2018, as amended by the First Amendment thereto, by and among Linde AG, Praxair, Inc., Messer, and Linde plc, with respect to the sale of certain additional assets of Linde AG in the Americas to Messer in connection with the Business Combination Agreement (Filed as Exhibit 2.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2018, File No. 1-11037, and is incorporated hereby by reference).
**2.3c	Third Amendment dated February 20, 2019 to the Sale and Purchase Agreement, dated July 16, 2018, as amended by the First and Second Amendment thereto, by and among Linde AG, Praxair, Inc., Messer, and Linde plc, with respect to the sale of certain additional assets of Linde AG in the Americas to Messer in connection with the Business Combination Agreement dated as of June 1, 2017, as amended, to effect a combination of the businesses of Linde AG and Praxair, Inc. (Filed as Exhibit 2.4 to the Company's Current Report on Form 8-K, filed on March 7, 2019, File No. 1-11037, and is incorporated hereby by reference).
3.01	Amended and Restated Public Limited Company Constitution of Linde plc (Filed as Exhibit 3.1 to the Company's Current Report on Form 8-K, filed on October 31, 2018, File No. 333-218485, and incorporated herein by reference).
4.01	Description of Linde plc Ordinary Shares (Filed as Exhibit 4.01 to Linde plc's 2019 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).
4.02	Indenture, dated as of July 15, 1992, between Praxair, Inc. and U.S. Bank National Association, as the ultimate successor trustee to Bank of America, Illinois, formerly Continental Bank, National Association (Filed as Exhibit 4 to Praxair, Inc.'s Current Report on Form 8-K dated March 19, 2007, Filing No. 1-11037, and incorporated herein by reference).
4.03	Form of Subordinated Indenture for Praxair, Inc. (Filed as Exhibit 4.3 to Praxair, Inc.'s Form S-3, filed on May 12, 2015, File No. 333-204093, and is incorporated herein by reference.)
4.04	Supplemental Indenture, dated as of September 3, 2019, among Linde plc, Praxair, Inc., Linde AG and U.S. Bank National Association, as trustee (Filed as Exhibit 4.2 to the Linde plc Form 8-K dated September 6, 2019, Filing No. 1-38730, and incorporated herein by reference).
4.05	Guarantee and Negative Pledge of Linde plc dated May 11, 2020 (Filed as Exhibit 4.3 to the Linde plc Form 8-K dated May 26, 2020, Filing No.1-38730, and is incorporated herein by reference).

Exhibit No.	Description
4.06	Upstream Guarantee to Linde plc provided by Linde GmbH dated May 11, 2020 (Filed as Exhibit 4.4 to the Linde plc Form 8-K dated May 26, 2020, Filing No.1-38730, and incorporated herein by reference).
4.07	Upstream Guarantee to Linde plc provided by Praxair, Inc. dated May 11, 2020 (Filed as Exhibit 4.5 to the Linde plc Form 8-K dated May 26, 2020, Filing No.1-38730, and incorporated herein by reference).
4.08	Fiscal Agency Agreement, dated May 11, 2020, among Linde plc, as Issuer and as Guarantor, Linde Finance B.V., as Issuer, and Deutsche Bank Aktiengesellschaft, as Fiscal Agent and Paying Agent (Filed as Exhibit 4.6 to the Linde plc Form 8-K dated May 26. 2020, Filing No 1-37830, and incorporated herein by reference).
4.09	Indenture, dated as of August 10, 2020, among Praxair, Inc., Linde plc and U.S. Bank National Association, as trustee (Filed as Exhibit 4.1 to the Linde plc Form 8-K dated August 10, 2020, Filing No. 1-38730, and incorporated herein by reference).
4.10	Amended and Restated Fiscal Agency Agreement, dated August 3, 2021, among Linde plc, as Issuer and as Guarantor, Linde Finance B.V., as Issuer, and Deutsche Bank Aktiengesellschaft, as Fiscal Agent and Paying Agent (Filed as Exhibit 4.6 to Linde plc 's current report on Form 8-K, dated September 30, 2021, Filing No. 1-38730, and incorporated herein by reference).
4.11	Copies of the agreements related to long-term debt which are not required to be filed as exhibits to this Annual Report on Form 10-K will be furnished to the Securities and Exchange Commission upon request.
*10	Form of Non-Employee Director Restricted Stock Unit Award Under the 2021 Linde plc Long Term Incentive Plan (Filed as Exhibit 10.0e to Linde plc's 2021 Annual Report on Form 10-K, Filing No. 1-38730, and is incorporated herein by reference).
10.01	Amended and Restated Five Year Credit Agreement, dated as of December 7, 2022, among Linde plc, certain of its subsidiaries parties thereto as borrowers, the lenders party thereto and Bank of America, N.A., as Administrative Agent.(Filed as Exhibit 10.1 to Linde plc's current report on Form 8-K, dated December 8, 2022, Filing No. 1-38730, and incorporated herein by reference)
10.02	364-Day Credit Agreement, dated as of December 7, 2022, among Linde plc, certain of its subsidiaries parties thereto as borrowers, the lenders party thereto and Bank of America, N.A., as Administrative Agent.(Filed as Exhibit 10.2 to Linde plc's current report on Form 8-K, dated December 8, 2022, Filing No. 1-38730, and incorporated herein by reference)
*10.03	2021 Linde plc Long Term Incentive Plan, Effective as of July 26, 2021 (Filed as Exhibit 10.01 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended June 30, 2021, Filing No. 1-38730, and incorporated herein by reference).
*10.03a	Form of Transferable Stock Option Award Under the 2021 Linde plc Long Term Incentive Plan (Filed as Exhibit 10.01 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended September 30, 2021, Filing No. 1-38730, and incorporated herein by reference).
*10.03b	Form of Restricted Stock Unit Award Under the 2021 Linde plc Long Term Incentive Plan (Filed as Exhibit 10.02 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended September 30, 2021, Filing No. 1-38730, and incorporated herein by reference).
*10.03c	Form of Performance Share Unit Award Under the 2021 Linde plc Long Term Incentive Plan with Return on Capital performance metrics (Filed as Exhibit 10.03 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended September 30, 2021, Filing No. 1-38730, and incorporated herein by reference).
*10.03d	Form of Performance Share Unit Award Under the 2021 Linde plc Long Term Incentive Plan with Total Shareholder Return performance metrics (Filed as Exhibit 10.04 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended September 30, 2021, Filing No. 1-38730, and incorporated herein by reference).
*10.04	Linde plc Annual Variable Compensation Plan effective January 1, 2019 (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, filed on January 25, 2019, File No. 1-38730, and is incorporated hereby by reference).
*10.05	Praxair, Inc. Supplemental Retirement Income Plan A effective January 1, 2008 (Filed as Exhibit 10.05a to Praxair, Inc.'s 2008 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).
*10.05a	First amendment to the Praxair, Inc. Supplemental Retirement Income Plan A effective January 1, 2010 (Filed as Exhibit 10.05b to Praxair, Inc.'s 2009 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).

Exhibit No.	Description
*10.05b	Second Amendment to Praxair, Inc. Supplemental Retirement Income Plan A effective February 28, 2017, (Filed as Exhibit 10.05c to Praxair, Inc.'s 2016 Annual Report on Form 10-K, Filing No. 1-11037, and is incorporated hereby by reference).
*10.05c	Third Amendment to the Praxair, Inc. Supplemental Retirement Income Plan A effective December 1, 2017 (Filed as Exhibit 10.05m to Praxair, Inc.'s 2017 Annual Report on Form 10-K, File No. 1-11037, and is incorporated herein by reference).
*10.05d	Praxair, Inc. Supplemental Retirement Income Plan B amended and restated effective December 31, 2007 (Filed as Exhibit 10.05b to Praxair, Inc.'s 2008 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).
*10.05e	First amendment to the Praxair, Inc. Supplemental Retirement Income Plan B effective January 1, 2010 (Filed as Exhibit 10.05d to Praxair, Inc.'s 2009 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).
*10.05f	Second Amendment to Praxair, Inc. Supplemental Retirement Income Plan B effective July 1, 2012 (Filed as Exhibit 10.05e to Praxair Inc.'s 2012 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).
*10.05g	Third Amendment to Praxair, Inc. Supplemental Retirement Income Plan B effective February 28, 2017, (Filed as Exhibit 10.05g to Praxair, Inc.'s 2016 Annual Report on Form 10-K, Filing No. 1-11037, and is incorporated herein by reference).
*10.05h	Fourth Amendment to the Praxair, Inc. Supplemental Retirement Income Plan B effective December 1, 2017 (Filed as Exhibit 10.05l to Praxair, Inc.'s 2017 Annual Report on Form 10-K, File No. 1-11037, and is incorporated herein by reference).
*10.06	Praxair, Inc. Equalization Benefit Plan amended and restated effective December 31, 2007 (Filed as Exhibit 10.05c to Praxair, Inc.'s 2008 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).
*10.06a	First amendment to the Praxair, Inc. Equalization Benefit Plan effective January 1, 2010 (Filed as Exhibit 10.05f to Praxair Inc.'s 2009 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).
*10.06b	Second Amendment to the Praxair, Inc. Equalization Benefit Plan effective February 28, 2017,(Filed as Exhibit 10.05j to Praxair, Inc.'s 2016 Annual Report on Form 10-K, Filing No. 1-11037, and is incorporated herein by reference).
*10.06c	Third Amendment to the Praxair, Inc. Equalization Benefit Plan effective December 1, 2017 (Filed as Exhibit 10.05k to Praxair, Inc.'s 2017 Annual Report on Form 10-K, File No. 1-11037, and is incorporated herein by reference).
*10.06d	Linde Inc. 2018 Equalization Benefit Plan, Amended and Restated effective September 1, 2020 (Filed as Exhibit 10.5 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, Filing No. 1-38730, and incorporated herein by reference).
*10.06e	Linde Inc. 2018 Supplemental Retirement Income Plan A, Amended and Restated effective September 1, 2020 (Filed as Exhibit 10.3 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, Filing No. 1-38730, and incorporated herein by reference).
*10.06f	Linde Inc. 2018 Supplemental Retirement Income Plan B, Amended and Restated effective September 1, 2020 (Filed as Exhibit 10.4 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, Filing No. 1-38730, and incorporated herein by reference).
*10.07	Praxair, Inc. Director's Fees Deferral Plan amended and restated effective January 26, 2010 (Filed as Exhibit 10.06 to Praxair Inc.'s 2009 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).
*10.08	Linde Compensation Deferral Program Amended and Restated effective September 1, 2020 (Filed as Exhibit 10.2 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020. Filing No. 1-38730, and incorporated herein by reference).
*10.09	First Amendment to the Linde Compensation Deferral Program effective April 1, 2021. (Filed as Exhibit 10.01 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended March 31, 2021. Filing No. 1-38730 and incorporated herein by reference).
*10.10	Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan (Filed as Exhibit 4.03 to Praxair, Inc.'s Form S-8, filed on October 31, 2018, File No. 333-228084, and incorporated herein by reference).
*10.10a	First Amendment, dated as of April 25, 2017, to the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan (Filed as Exhibit 10.01 to Praxair, Inc.'s Quarterly Report on Form 10-Q for the quarter ended March 31, 2017, Filing No. 1-11037, and is incorporated herein by reference).

Exhibit No.	Description
*10.10b	Second Amendment dated September 8, 2020 to the Amended and Restated 2009 Praxair, Inc Long Term Incentive Plan (Filed as Exhibit 10.1 to Linde plc's Quarterly Report on Form 10-Q for the quarter ended September 30, 2020, Filing No. 1-38730, and incorporated herein by reference).
*10.10c	Form of Standard Option Award under the 2009 Praxair, Inc. Long Term Incentive Plan (Filed as Exhibit 10.22 to Praxair, Inc.'s 2009 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).
*10.10d	Form of Transferable Option Award under the 2009 Praxair, Inc. Long Term Incentive Plan (Filed as Exhibit 10.23 to Praxair, Inc.'s 2009 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).
*10.10e	Form of Transferable Option Award under the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan for grants made in 2015-2017 (Filed as Exhibit 10.26 to Praxair, Inc.'s 2014 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).
*10.10f	Form of Transferable Option Award under the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan for grants made in 2018 (Filed as Exhibit 10.26a to Praxair, Inc.'s 2017 Annual Report on Form 10-K, File No. 1-11037, and incorporated herein by reference).
*10.10g	Form of Restricted Stock Unit Award under the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan for grants made in 2018 (Filed as Exhibit 10.27a to Praxair, Inc.'s 2017 Annual Report on Form 10-K, File No. 1-11037, and incorporated herein by reference).
*10.10h	Form of Non-Employee Director Restricted Stock Unit Award under the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan for grants made in 2019 and thereafter (Filed as Exhibit 10.10i to Linde plc's 2019 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).
*10.10i	Form of Transferable Option Award under the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan for grants beginning in 2019 (Filed as Exhibit 10.11L to Linde plc's 2018 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).
*10.10j	Form of Restricted Stock Unit Award under the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan for grants beginning in 2019 (Filed as Exhibit 10.11M to Linde plc's 2018 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).
*10.10k	Form of Performance Share Unit Award under the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan for grants beginning in 2019 with Return on Capital performance metrics (Filed as Exhibit 10.11N to Linde plc's 2018 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).
*10.10l	Form of Performance Share Unit Award under the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan for grants beginning in 2019 with Total Shareholder Return performance metrics (Filed as Exhibit 10.11O to Linde plc's 2018 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).
*10.11	Pension Agreement among Linde AG, Linde Holding GmbH and Mr. Sanjiv Lamba, dated December 20, 2019 (Filed as Exhibit 10.13a to Linde plc's 2019 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).
10.12	Offer Letter between Linde plc and Sanjiv Lamba dated November 12, 2021 (Filed as Exhibit 10.1 to Linde plc's current report on Form 8-K dated November 18, 2021, File No. 1-38730, and incorporated herein by reference).
10.13	Nondisclosure, Nonsolicitation and Noncompetition Agreement between Linde Inc. and Sanjiv Lamba dated as of November 7, 2021 (Filed as Exhibit 10.2 to Linde plc's current report on Form 8-K dated November 18, 2021, File No. 1-38730, and incorporated herein by reference).
*10.14	Form of Linde plc Director Indemnification Agreement (Filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, filed on October 31, 2018, File No. 333-218485, and incorporated herein by reference).
21.01	Subsidiaries of Linde plc
23.01	Consent of Independent Registered Public Accounting Firm.
31.01	Rule 13a-14(a) Certification
31.02	Rule 13a-14(a) Certification
32.01	Section 1350 Certification (such certifications are furnished for the information of the Commission and shall not be deemed incorporated by reference into any filing under the Securities Act or the Exchange Act).

Exhibit No.	Description
32.02	Section 1350 Certification (such certifications are furnished for the information of the Commission and shall not be deemed incorporated by reference into any filing under the Securities Act or the Exchange Act).
101.INS	XBRL Instance Document: The XBRL Instance Document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase

Copies of exhibits incorporated by reference can be obtained from the SEC and are located in SEC File No. 1-11037.

* Indicates a management contract or compensatory plan or arrangement.

** Certain schedules or similar attachments have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The Registrant agrees to furnish supplemental copies of any of the omitted schedules or attachments upon request by the SEC.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Linde plc and Subsidiaries

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Linde plc
(Registrant)

Date: February 28, 2023

By: /s/ KELCEY E. HOYT

Kelcey E. Hoyt
Chief Accounting Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities indicated on February 28, 2023.

/s/ STEPHEN F. ANGEL
Stephen F. Angel
Chairman

/s/ SANJIV LAMBA
Sanjiv Lamba
Chief Executive Officer and Director

/s/ MATTHEW J. WHITE
Matthew J. White
Chief Financial Officer

/s/ PROF. DDR. ANN-KRISTIN ACHLIETNER
Ann-Kristin Achleitner
Director

/s/ ROBERT L. WOOD
Robert L. Wood
Director

/s/ DR. THOMAS ENDERS
Thomas Enders
Director

/s/ JOSEF KAESER
Josef Kaeser
Director

/s/ DR. VICTORIA OSSADNIK
Victoria Ossadnik
Director

/s/ EDWARD G. GALANTE
Edward G. Galante
Director

/s/ ALBERTO WEISSER
Alberto Weisser
Director

/s/ PROF. DR. MARTIN H. RICHENHAGEN
Martin Richenhagen
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/s/ HUGH GRANT
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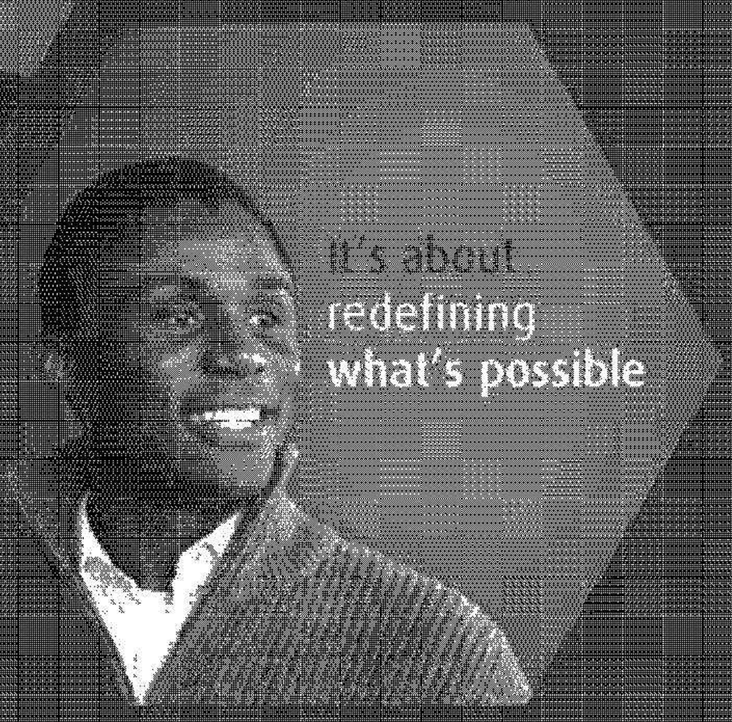


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