
LINDE CRYOGENICS LIMITED

ANNUAL REPORT AND FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2019

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LINDE CRYOGENICS LIMITED

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LINDE CRYOGENICS LIMITED

STRATEGIC REPORT FOR THE YEAR ENDED 31 DECEMBER 2019

The directors present the strategic report for the company for the year ended 31 December 2019.

Review of the company's business and principal activities

The company is a member of the Linde plc group ("Linde Group") and its ultimate parent company is Linde plc.

The company does not trade. The company's principal activity has been throughout the current and preceding year an investment holding company for the Linde Group. It is envisaged that this will continue to be the principal activity of the company for the foreseeable future.

Performance of the company's business during the financial year

The results for the year are contained in the accompanying profit and loss account on page 7 which shows a loss after tax for the financial year of \$2,000 (2018: \$11,997,0000).

Key performance indicators

The company's income is derived from dividends received from its subsidiary. The directors refer to the company's level of income, its operating and retained profits, the value of its investments and net and current asset values in evaluating the company's performance.

Position of the company's business at the year ended 31 December 2019

As at 31 December 2019 the company held net current assets of \$50,000 (2018: \$52,000) and net assets of \$167,148,000 (2018: \$167,150,000).

Objectives and strategies

The company's primary objective and strategy is to continue as a holding company for investments in entities that form part of the Linde Group.

Markets

Linde Cryogenics Limited holds an investment in a company based in the United Kingdom.

Risks and uncertainties

The principal risk and uncertainty facing the company includes but is not limited to investment risk. As an investment holding company, the company is exposed to the risk of impairment through poor performing subsidiaries. Impairment reviews are carried out to effectively manage and mitigate this risk.

The United Kingdom has left the European Union ("EU") ("Brexit"), and is now in a transition period before new rules are expected to come into effect from 1 January 2021. The uncertainty of Brexit, poses potential financial risks to our market and therefore to our business. However, any potential impact of Brexit will, to some extent, be mitigated as the company's investment is located in the United Kingdom.

The directors acknowledge the current outbreak of Covid-19 and its potential to impact the economy and regions in which the company operates. Whilst the directors continue to monitor this risk, as at the date of issuance of these financial statements, there is no adverse material impact on the company's activities and the financial position of the company remains positive.

LINDE CRYOGENICS LIMITED

**STRATEGIC REPORT (CONTINUED)
FOR THE YEAR ENDED 31 DECEMBER 2019**

This report was approved by the board of directors on *8 December 2020* and signed on its behalf by:



Mrs S A Williams
Director

LINDE CRYOGENICS LIMITED

DIRECTORS' REPORT FOR THE YEAR ENDED 31 DECEMBER 2019

The directors present their report and the audited financial statements for the year ended 31 December 2019.

Directors

The directors who held office during and after the year under review were:

Mr J M Bland (alternate director to Mrs S A Williams)
Mr B Patterson
Mrs S A Williams

The directors are not subject to retirement by rotation.

Dividends

No interim dividends were paid during the year (2018: \$11,999,000).

The directors do not recommend the payment of a final dividend for the year ended 31 December 2019 (2018: \$nil).

Political contributions

The company made no political donations and did not incur any political expenditure during the year.

Disclosure of information to auditor

The directors holding office at the date of approval of this directors' report confirm that, so far as they are aware, there is no relevant audit information of which the company's auditor is unaware and each director has taken all steps that ought to have been taken as directors to make themselves aware of any relevant audit information and to establish that the company's auditor is aware of that information.

Auditor

Under section 487(2) of the Companies Act 2006, following the 2018 merger between the Linde GmbH (formerly Linde AG) and Linde Inc. (formerly Praxair, Inc.) the intention is for the Linde Plc Group auditor, PwC LLP, to be appointed as auditor of the Company.

This report was approved by the board of directors on 8 December 2020 and signed on its behalf by:-



S K Kelly
Secretary

The Priestley Centre
10 Priestley Road
The Surrey Research Park
Guildford
Surrey
GU2 7XY
England

LINDE CRYOGENICS LIMITED

STATEMENT OF DIRECTORS' RESPONSIBILITIES IN RESPECT OF THE STRATEGIC REPORT, DIRECTORS' REPORT AND THE FINANCIAL STATEMENTS

The directors are responsible for preparing the strategic report, the directors' report and the financial statements in accordance with applicable laws and regulations.

Company law requires the directors to prepare financial statements for each financial year. Under that law they have elected to prepare the financial statements in accordance with UK Accounting Standards and applicable law (UK Generally Accepted Accounting Practice), including FRS 101 Reduced Disclosure Framework.

Under company law the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the company and of the profit or loss of the company for that period.

In preparing these financial statements, the directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements;
- assess the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and
- use the going concern basis of accounting unless they either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the company's transactions and disclose with reasonable accuracy at any time the financial position of the company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error, and have general responsibility for taking such steps as are reasonably open to them to safeguard the assets of the company and to prevent and detect fraud and other irregularities.

LINDE CRYOGENICS LIMITED

INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF LINDE CRYOGENICS LIMITED

Opinion

We have audited the financial statements of Linde Cryogenics Limited ("the company") for the year ended 31 December 2019 which comprise of the Profit and Loss account, the Balance Sheet, the Statement of Changes of Equity and related notes, including the accounting policies in note 1.

In our opinion the financial statements:

- give a true and fair view of the state of the company's affairs as at 31 December 2019 and of its profit for the year then ended;
- have been properly prepared in accordance with UK accounting standards, including FRS 101 *Reduced Disclosure Framework*; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities are described below. We have fulfilled our ethical responsibilities under, and are independent of the company in accordance with, UK ethical requirements including the FRC Ethical Standard. We believe that the audit evidence we have obtained is a sufficient and appropriate basis for our opinion.

Going concern

The directors have prepared the financial statements on the going concern basis as they do not intend to liquidate the company or to cease its operations, and as they have concluded that the company's financial position means that this is realistic. They have also concluded that there are no material uncertainties that could have cast significant doubt over its ability to continue as a going concern for at least a year from the date of approval of the financial statements ("the going concern period").

We are required to report to you if we have concluded that the use of the going concern basis of accounting is inappropriate or there is an undisclosed material uncertainty that may cast significant doubt over the use of that basis for a period of at least a year from the date of approval of the financial statements. In our evaluation of the directors' conclusions, we considered the inherent risks to the company's business model and analysed how those risks might affect the company's financial resources or ability to continue operations over the going concern period. We have nothing to report in these respects.

However, as we cannot predict all future events or conditions and as subsequent events may result in outcomes that are inconsistent with judgements that were reasonable at the time they were made, the absence of reference to a material uncertainty in this auditor's report is not a guarantee that the company will continue in operation.

Directors' report

The directors are responsible for the strategic report and directors' report. Our opinion on the financial statements does not cover that report and we do not express an audit opinion thereon.

Our responsibility is to read the strategic report and directors' report and, in doing so, consider whether, based on our financial statements audit work, the information therein is materially misstated or inconsistent with the financial statements or our audit knowledge. Based solely on that work:

- we have not identified material misstatements in the strategic report and directors' report;
- in our opinion the information given in that report for the financial year is consistent with the financial

LINDE CRYOGENICS LIMITED

INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF LINDE CRYOGENICS LIMITED

statements; and

- in our opinion that report has been prepared in accordance with the Companies Act 2006. ,

Matters on which we are required to report by exception

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit; or
- the directors were not entitled to take advantage of the small companies exemption from the requirement to prepare a strategic report.

We have nothing to report in these respects.

Directors' responsibilities

As explained more fully in their statement set out on page 4, the directors are responsible for: the preparation of the financial statements and for being satisfied that they give a true and fair view; such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error; assessing the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern; and using the going concern basis of accounting unless they either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue our opinion in an auditor's report. Reasonable assurance is a high level of assurance, but does not guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

A fuller description of our responsibilities is provided on the FRC's website at www.frc.org.uk/auditresponsibilities.

The purpose of our audit work and to whom we owe our responsibilities

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members, as a body, for our audit work, for this report, or for the opinions we have formed.

LINDE CRYOGENICS LIMITED

INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF LINDE CRYOGENICS LIMITED



Nick Plumb (Senior statutory auditor)

for and on behalf of

KPMG LLP, Statutory Auditor

Chartered Accountants

1 Sovereign Square
Sovereign Square
Leeds
LS1 4DA

Date: 11 December 2020

LINDE CRYOGENICS LIMITED

PROFIT AND LOSS ACCOUNT
FOR THE YEAR ENDED 31 DECEMBER 2019

	Note	2019 \$000	2018 \$000
Income from shares in group undertakings	6	-	11,999
Interest payable and expenses	5	(2)	(2)
(Loss)/profit before tax		<u>(2)</u>	<u>11,997</u>
Tax on profit	7	-	-
Profit for the financial year		<u>(2)</u>	<u>11,997</u>

The accompanying notes form an integral part of the financial statements.

All of the above relates to continuing operations.

The company has no other comprehensive income in the year other than that included in the profit and loss account above and therefore no separate statement of other comprehensive income has been prepared.

LINDE CRYOGENICS LIMITED
REGISTERED NUMBER: 03412461

BALANCE SHEET
AS AT 31 DECEMBER 2019

	Note	2019 \$000	2018 \$000
Non current assets			
Investments	8	167,098	167,098
		<u>167,098</u>	<u>167,098</u>
Current assets / (liabilities)			
Debtors: amounts falling due within one year	9	158	157
Creditors: amounts falling due within one year	10	(108)	(105)
		<u>50</u>	<u>52</u>
Net current assets			
		<u>167,148</u>	<u>167,150</u>
Net assets			
		<u>167,148</u>	<u>167,150</u>
Capital and reserves			
Profit and loss account		167,148	167,150
		<u>167,148</u>	<u>167,150</u>
Shareholders' funds			
		<u>167,148</u>	<u>167,150</u>

The accompanying notes form an integral part of the financial statements.

The financial statements were approved by the board of directors on *8 December 2020* and were signed on its behalf by:


S A Williams
Director

LINDE CRYOGENICS LIMITED

**STATEMENT OF CHANGES IN EQUITY
FOR THE YEAR ENDED 31 DECEMBER 2019**

	Profit and loss account \$000	Total equity \$000
Balance at 1 January 2019	167,150	167,150
Loss for the year	(2)	(2)
	<hr/>	<hr/>
Total comprehensive income for the year	(2)	(2)
	<hr/>	<hr/>
Balance at 31 December 2019	167,148	167,148
	<hr/>	<hr/>

**STATEMENT OF CHANGES IN EQUITY
FOR THE YEAR ENDED 31 DECEMBER 2018**

	Profit and loss account \$000	Total equity \$000
Balance at 1 January 2018	167,152	167,152
Profit for the year	11,997	11,997
	<hr/>	<hr/>
Total comprehensive income for the year	11,997	11,997
Dividends:	(11,999)	(11,999)
	<hr/>	<hr/>
Balance at 31 December 2018	167,150	167,150
	<hr/>	<hr/>

The accompanying notes form an integral part of the financial statements.

LINDE CRYOGENICS LIMITED

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2019

1. Accounting policies

Linde Cryogenics Limited is a company incorporated and domiciled in England in the UK. The registered number is 03412461 and the registered address is The Priestley Centre, 10 Priestley Road, The Surrey Research Park, Guildford, Surrey, GU2 7XY, England.

The company is exempt by virtue of the Companies Act 2006 from the requirement to prepare group financial statements. These financial statements present information about the company as an individual undertaking and not about its group.

These financial statements were prepared in accordance with Financial Reporting Standard 101 Reduced Disclosure Framework ("FRS 101").

In preparing these financial statements, the company applies the recognition, measurement and disclosure requirements of International Financial Reporting Standards as adopted by the EU ("Adopted IFRSs"), but makes amendments where necessary in order to comply with the Companies Act 2006 and has set out below where advantage of the FRS 101 disclosure exemptions has been taken.

The company's ultimate parent undertaking, Linde plc, includes the company in its consolidated financial statements. The consolidated financial statements of Linde plc are prepared in accordance with International Financial Reporting Standards and are available to the public and may be obtained from its principal trading address at The Priestley Centre, 10 Priestley Road, The Surrey Research Park, Guildford, Surrey, GU2 7XY, England.

In these financial statements, the company has applied the exemptions available under FRS 101 in respect of the following disclosures:

- a Cash Flow Statement and related notes;
- comparative period reconciliations for share capital;
- disclosures in respect of transactions with wholly owned subsidiaries of the Linde Group;
- disclosures in respect of capital management;
- the effects of new but not yet effective IFRSs;
- disclosures in respect of the compensation of Key Management Personnel.

The accounting policies set out in this note have been applied consistently in preparing the financial statements for the years ended 31 December 2019 and 31 December 2018.

LINDE CRYOGENICS LIMITED

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2019

1. *Accounting policies (continued)*

1.1 Basis of preparation of financial statements

The financial statements are prepared on the historical cost basis.

1.2 Going concern

The use of the going concern basis of accounting is appropriate because there are no material uncertainties related to events or conditions that may cast significant doubt about the ability of the company to continue as a going concern.

The company has net current assets and net assets and can therefore support itself for the foreseeable future.

Covid 19 has been considered in the severe but plausible downside scenario for the going concern assessment period of 18 months following the balance sheet date. The directors have not identified any triggers to suggest the going concern basis of accounting is not appropriate in light of this consideration. In the downside scenario, the directors assume that they do not receive any further dividend income, and therefore fund their obligations with their current cash balances.

The forecasts are dependent on the company's ability to draw on its cash balances on demand. The company places its cash on deposit with Linde Finance BV, a fellow subsidiary of the company's ultimate parent undertaking Linde plc. Under the terms of the deposit agreement between the company and Linde Finance BV, the company is able to withdraw its cash balances without restriction and on demand. The directors acknowledge that Linde Finance BV also holds similar deposits and agreements with other entities within the wider Linde group and as a result the directors do not have visibility of Linde Finance BV's ability to repay the company's cash balances on demand in downside scenarios from its own assets. However, Linde Finance BV has access to a \$5bn overdraft facility which expires in 26 March 2024 and which is undrawn at the time of signing of these financial statements as well as a guarantee (the "Guarantee") from Linde plc over its third party creditors. These facilities are substantially in excess of Linde Finance BV's obligations to Linde Group companies for cash balances placed on deposit and as a result the directors have concluded that Linde Finance BV would be able to repay the company's cash balance on demand throughout the forecast period. In making this assessment, the directors have also considered Linde plc's ability to provide the Guarantee and have concluded that Linde plc has the intent and ability to do so.

Consequently, the directors are confident that the company will have sufficient funds to continue to meet its liabilities as they fall due for at least 18 months from the date of approval of the financial statements and therefore have prepared the financial statements on a going concern basis.

1.3 Functional currency

The functional currency of Linde Cryogenics Limited is US Dollars and the accounts are prepared using its functional currency, which is the currency of the primary economic environment in which it operates.

LINDE CRYOGENICS LIMITED

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2019

1. Accounting policies (continued)

1.4 Foreign currency

Transactions in foreign currencies are translated to the company's functional currency at the foreign exchange rate ruling at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are retranslated to the functional currency at the foreign exchange rate ruling at that date. Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated using the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currencies that are stated at fair value are retranslated to the functional currency at foreign exchange rates ruling at the date the fair value was determined. Foreign exchange differences arising on translation are recognised in the profit and loss account.

1.5 Classification of financial instruments issued by the company

Following the adoption of IAS 32, financial instruments issued by the company are treated as equity only to the extent that they meet the following two conditions:

(a) they include no contractual obligations upon the company to deliver cash or other financial assets or to exchange financial assets or financial liabilities with another party under conditions that are potentially unfavourable to the company; and

(b) where the instrument will or may be settled in the company's own equity instruments, it is either a non-derivative that includes no obligation to deliver a variable number of the company's own equity instruments or is a derivative that will be settled by the company exchanging a fixed amount of cash or other financial assets for a fixed number of its own equity instruments.

To the extent that this definition is not met, the proceeds of issue are classified as a financial liability. Where the instrument so classified takes the legal form of the company's own shares, the amounts presented in these financial statements for called up share capital and share premium account exclude amounts in relation to those shares.

1.6 Non-derivative financial instruments

Non-derivative financial instruments comprise investments in equity and debt securities, trade and other debtors, cash and cash equivalents, loans and borrowings, and trade and other creditors.

Trade and other debtors

Trade and other debtors are recognised initially at fair value. Subsequent to initial recognition they are measured at amortised cost using the effective interest method, less any impairment losses.

Trade and other creditors

Trade and other creditors are recognised initially at fair value. Subsequent to initial recognition they are measured at amortised cost using the effective interest method.

Interest-bearing borrowings

Interest-bearing borrowings are recognised initially at fair value less attributable transaction costs. Subsequent to initial recognition, interest-bearing borrowings are stated at amortised cost using the effective interest method, less any impairment losses.

LINDE CRYOGENICS LIMITED

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2019

1. Accounting policies (continued)

1.7 Intra-group financial instruments

Where the company enters into financial guarantee contracts to guarantee the indebtedness of other companies within its group, the company considers these to be insurance arrangements and accounts for them as such. In this respect, the company treats the guarantee contract as a contingent liability until such time as it becomes probable that the company will be required to make a payment under the guarantee.

1.8 Income

Income from shares in group undertakings is recognised when dividends become a legally binding liability of the company. In the case of interim dividends declared by the board, this is on payment of the dividend. In the case of dividends approved by the company's members, this is recognised once passed by the members.

1.9 Impairment excluding stocks, investment properties and deferred tax assets

Financial assets (including trade and other debtors)

A financial asset not carried at fair value through profit or loss is assessed at each reporting date to determine whether there is objective evidence that it is impaired. A financial asset is impaired if objective evidence indicates that a loss event has occurred after the initial recognition of the asset, and that the loss event had a negative effect on the estimated future cash flows of that asset that can be estimated reliably.

An impairment loss in respect of a financial asset measured at amortised cost is calculated as the difference between its carrying amount and the present value of the estimated future cash flows discounted at the asset's original effective interest rate. For financial instruments measured at cost less impairment an impairment is calculated as the difference between its carrying amount and the best estimate of the amount that the company would receive for the asset if it were to be sold at the reporting date. Interest on the impaired asset continues to be recognised through the unwinding of the discount. When a subsequent event causes the amount of impairment loss to decrease, the decrease in impairment loss is reversed through profit or loss.

1.10 Expenses

Interest receivable and interest payable

Interest payable and similar charges include interest payable, finance charges on shares classified as liabilities and finance leases recognised in profit or loss using the effective interest method, unwinding of the discount on provisions, and net foreign exchange losses that are recognised in the profit and loss account (see foreign currency accounting policy). Borrowing costs that are directly attributable to the acquisition, construction or production of an asset that takes a substantial time to be prepared for use, are capitalised as part of the cost of that asset. Other interest receivable and similar income include interest receivable on funds invested and net foreign exchange gains.

Interest income and interest payable is recognised in profit or loss as it accrues, using the effective interest method. Foreign currency gains and losses are reported on a net basis.

LINDE CRYOGENICS LIMITED

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2019

1. Accounting policies (continued)

1.11 Taxation

Tax on the profit or loss for the year comprises current and deferred tax. Tax is recognised in the profit and loss account except to the extent that it relates to items recognised directly in equity or other comprehensive income, in which case it is recognised directly in equity or other comprehensive income.

Current tax is the expected tax payable or receivable on the taxable income or loss for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided on temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The following temporary differences are not provided for: the initial recognition of goodwill; the initial recognition of assets or liabilities that affect neither accounting nor taxable profit other than in a business combination, and differences relating to investments in subsidiaries to the extent that they will probably not reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the balance sheet date.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the temporary difference can be utilised.

1.12 Adoption of new and revised standards

The company has applied IFRS 16 'Leases' for the first time for its annual reporting period commencing 1 January 2019. Applying this new accounting standards has not had a material impact on the company's financial statements for the year ended 31 December 2019. There were no amendments to other accounting standards or IFRIC interpretations that are effective for the year ended 31 December 2019 which have had a material impact on the company's financial statements. Further details in relation to IFRS 16 is noted below:

IFRS 16 Leases

IFRS 16 was adopted in full in 2019 by The BOC Group Limited, however due to the low value of the assets being leased and materiality considerations applied, the low value lease exemption has been applied. As such no transitional adjustments have been recognised in 2019 or are expected in future periods unless the lease portfolio was seen to change materially.

2. Directors' emoluments

The directors did not receive any remuneration during the year for services to the company (2018: \$nil).

3. Auditor's remuneration

The remuneration payable in relation to audit services of £3,100 (2018: £3,100) is borne by The BOC Group Limited and is included in the aggregated fees disclosed in the financial statements of The BOC Group Limited.

LINDE CRYOGENICS LIMITED

**NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2019**

4. Employees

The company had no employees in the year. The company is not charged for the services provided to the company by employees of other Linde Group companies.

5. Interest

	2019	2018
	\$000	\$000
Interest payable and similar expenses		
Total interest expense on financial liabilities	2	2
	2	2

6. Income from fixed investments

	2019	2018
	\$000	\$000
Dividends received from equity investments	-	11,999

7. Taxation

	2019	2018
	\$000	\$000
Analysis of credit in year		
Current tax		
UK corporation tax on profits for the period	-	-
	-	-
Tax on profit	-	-

LINDE CRYOGENICS LIMITED

**NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2019**

7. Taxation (continued)

Factors affecting tax charge for the year

The tax assessed for the year is the same as *(2018 - lower than)* the standard rate of corporation tax in the UK of 19% *(2018 - 19%)*. The differences are explained below:

	2019 \$000	2018 \$000
Profit before tax	<u>(2)</u>	<u>11,997</u>
Profit multiplied by standard rate of corporation tax in the UK of 19% (2018 - 19%)	-	2,279
Effects of:		
Income not taxable	-	(2,279)
Total tax charge for the year	<u>-</u>	<u>-</u>

Factors that may affect future tax charges

The standard rate of Corporation Tax in the UK is 19% and will remain at the same rate for the period beginning on 1 April 2020.

8. Investments

	Investments in subsidiary companies \$000
Cost or valuation	
At 1 January 2019	167,098
At 31 December 2019	<u>167,098</u>
Net book value	
At 31 December 2019	<u>167,098</u>
At 31 December 2018	<u>167,098</u>

LINDE CRYOGENICS LIMITED

**NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2019**

9. Debtors

	2019	<i>2018</i>
	\$000	<i>\$000</i>
Amounts falling due within one year		
Amounts owed by group undertakings	158	<i>157</i>
	<u>158</u>	<u><i>157</i></u>

Amounts owed by group undertaking of £158,000 (2018: £157,000) are unsecured, interest free and repayable on demand.

10. Creditors

	2019	<i>2018</i>
	\$000	<i>\$000</i>
Amounts falling due within one year		
Amounts owed to group undertakings	108	<i>105</i>
	<u>108</u>	<u><i>105</i></u>

Amounts owed to group undertakings of £108,000 (2018: £105,000) are unsecured, interest bearing and repayable on demand.

11. Share capital

	2019	<i>2018</i>
	\$	<i>\$</i>
Allotted and fully paid		
100 ordinary shares of £1.00 each	142	<i>142</i>
	<u>142</u>	<u><i>142</i></u>

12. Post balance sheet event

The directors acknowledge the existence of the current outbreak of Covid-19 and its potential to impact the economy and regions in which the entity operates. As at the date of issuance of these financial statements, there is no impact on the financial position of the entity, and no future impact is expected.

As part of the Directors impact assessment in relation to Covid-19, material estimates have been considered individually. In addition, no impairment triggers have been noted in respect of investments held in subsidiaries, a breakdown of these participating interests is included in note 14.

LINDE CRYOGENICS LIMITED

NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2019

13. Ultimate parent undertaking and parent company of larger group

The immediate parent undertaking is The BOC Group Limited.

The ultimate parent undertaking and controlling party of the company is Linde plc, which is registered in Ireland at Ten Earlsfort Terrace, Dublin 2, D02 T380, Ireland.

Linde plc is the smallest and largest group to consolidate these financial statements. Copies of Linde plc's consolidated financial statements can be obtained from that company at its principal trading address, The Priestley Centre, 10 Priestley Road, The Surrey Research Park, Guildford, Surrey GU2 7XY, England. The ultimate parent company was Linde GmbH (formerly Linde AG), a company registered in Germany at Dr.-Carl-von-Linde-Straße 6 - 14, Pullach, 82049 Germany, until 31 October 2018 when Linde plc acquired the majority of the shares of Linde GmbH.

14. Participating Interests

Subsidiary and associated undertakings						
Country of incorporation		Name	% of nominal value held as at 31.12.2019	% of nominal value held as at 31.12.2018	Nature of interest	Registered Office
Republic of Ireland	of	BOC Gases Ireland Holdings	35*	35*	EUR 1.26 Ordinary	J F Kennedy Drive, Bluebell, Dublin 12,
Republic of Ireland	of	BOC Gases Ireland Limited	35*	35*	EUR 1.26 Ordinary	J F Kennedy Drive, Bluebell, Dublin 12,
United Kingdom		BOC Investments No.5	100	100	USD 1.00 Ordinary shares	The Priestley Centre, 10 Priestley Road, The Surrey Research Park, Guildford, Surrey, GU2 7XY, England
			100	100	USD 514.40 Ordinary A	
Republic of Ireland	of	BOC (Trading) Limited	35*	35*	EUR 1.26 Ordinary	J F Kennedy Drive, Bluebell, Dublin 12,
Republic of Ireland	of	Cooper Cryoservice	35*	35*	EUR 1.27 Ordinary	J F Kennedy Drive, Bluebell, Dublin 12,
United Kingdom		Spalding Haulage Limited	100*	100*	£1.00 Ordinary shares	The Priestley Centre, 10 Priestley Road, The Surrey Research Park, Guildford, Surrey, GU2
* indirect interest held						

Annual Report 2019

Linde

Making
our world
more
productive

Xe

Kr

O₂

THESE ACCOUNTS
FORM PART OF THE
GROUP ACCOUNTS
OF COMPANY
No. 3412461

H₂

Financial Highlights

Year ended December 31	2019	2018
Dollar amounts in millions, except per share data	\$	\$

Reported

Sales	28,228	14,836
Operating Profit	2,933	5,247
Income from Continuing Operations	2,183	4,273
Diluted Earnings Per Share from Continuing Operations	4.00	12.79

Adjusted Pro Forma¹

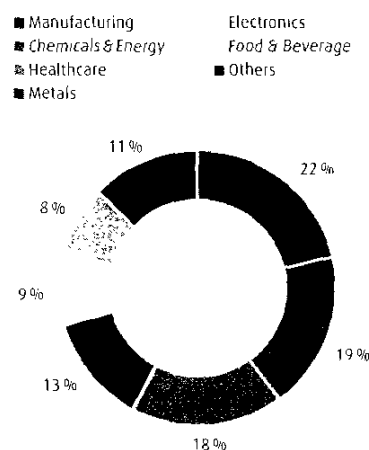
Sales	28,163	28,084
Operating Profit	5,272	4,796
Income from Continuing Operations	4,003	3,433
Diluted Earnings Per Share from Continuing Operations	7.34	6.19
After-Tax Return on Capital ²	11.6%	10.3%

Other Information

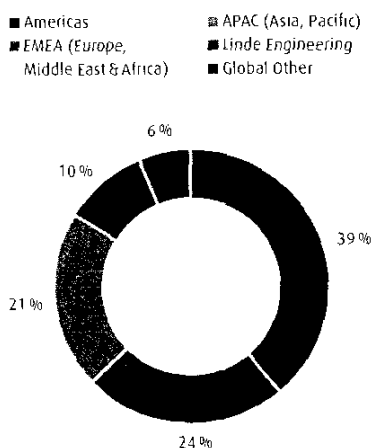
Cash Flow from Operations	6,119
Capital Expenditures	3,682

2019 Sales

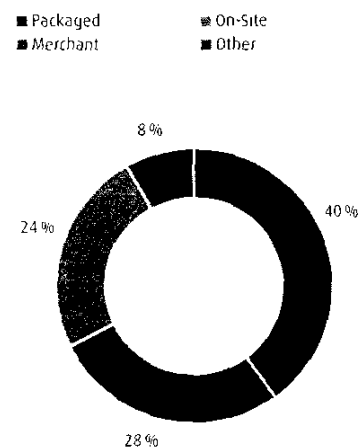
End Markets³



Business Segments



Distribution Mode³

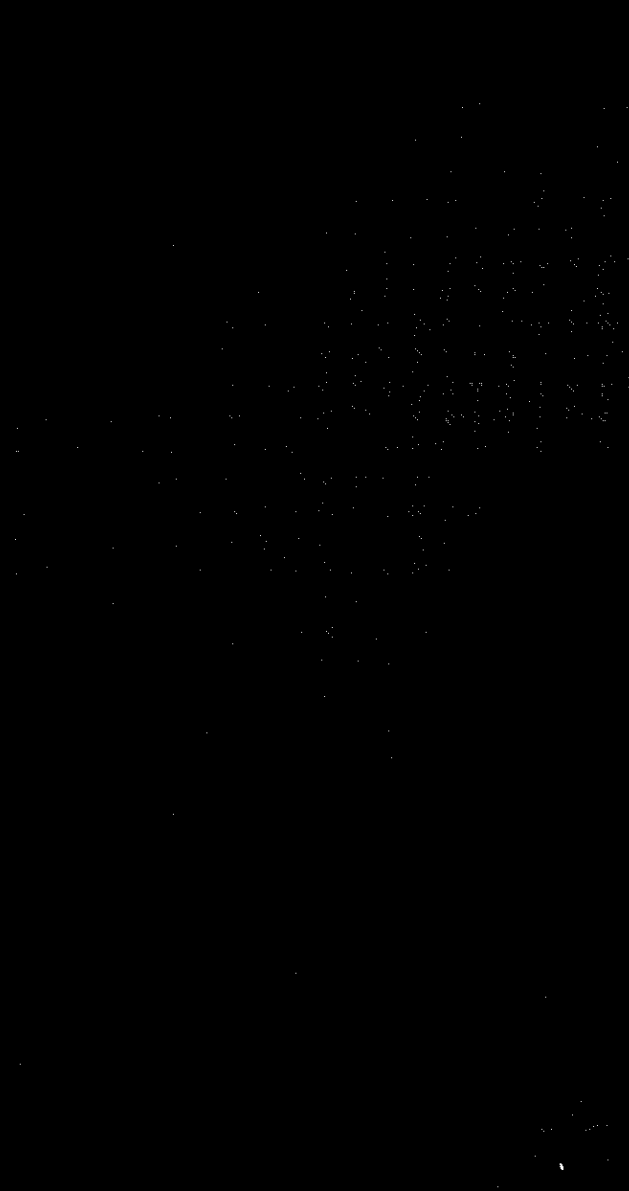


¹ Pro forma sales and adjusted operating profit and earnings per share are non-GAAP measures prepared on a basis consistent with Article 11 and include certain non-GAAP adjustments. Amounts are reconciled to reported amounts in the "Non-GAAP Financial Measures" Section in Item 7.

² After-tax return on capital is a non-GAAP measure. For definition and reconciliation please see Appendix to the Investor Tell conference Presentation Fourth Quarter 2019.

³ Total sales excluding Linde Engineering.

Letter to Shareholders



Dear Shareholders,

As I write this letter, the world is navigating an unprecedented global health crisis, one that will shape our world for many months if not years to come. In this challenging time, it is more important than ever to remain vigilant on safeguarding the health and well-being of our employees and communities while reliably supplying products and services to our customers.

Currently, one of Linde's key priorities is the continuous supply of oxygen and essential medical gases to support hospitals, doctors, nurses and other medical professionals as they care for COVID-19 patients. We are increasing the amount of oxygen produced at our air separation plants and are working very closely with local healthcare providers to anticipate demand and adjust deliveries as required. Our teams around the world are working tirelessly to install new liquid oxygen tanks and optimize cylinder filling plants to meet the surging demand for vital medical gases. They are helping to increase critical respiratory care capacity by setting up emergency sites and transitioning patients to in-home care. I could not be prouder of the resilience and resourcefulness demonstrated by Linde's employees in the face of this crisis.

Letter to Shareholders

This determination and commitment has been evident not just in recent weeks but over the past year. 2019 marked our first year as a merged company and the team executed beautifully. Excluding the effects of currency, sales and EPS grew 4% and 23% respectively. ROC, the single most important metric for a capital-intensive business, rose 130 basis points to 11.6% and we closed the year with an industry leading backlog of \$10 billion.

With respect to integration – it's largely done. We conducted our first employee survey and I am pleased with the results. This is a good indication of how well we integrated two high-quality companies in a relatively short period of time. We have implemented strong processes and best practices at every level of the new organization, making huge strides in building a productivity-oriented culture. The focus on operational excellence will help ensure success now and well into the future. In particular, the ongoing expansion of our digital tools and capabilities is invaluable and will drive continuous improvement for many years to come.

Predictions on how the current crisis will affect global economies in the long term are difficult to make, but I have confidence in our ability to outperform given our resilient business model and productivity opportunities to mitigate any macroeconomic headwinds. As an example, during the financial crisis of 2009 we nearly doubled our free cash flow and continued to increase the annual dividend.

As a high-quality business with a team that knows how to execute in both good and challenging times, we have an opportunity to dramatically differentiate Linde in the months and years ahead. For example, our commercial contract terms and conditions ensure a steady stream of cash flow irrespective of volumes. Furthermore, our products are sourced, produced and sold locally, and are therefore not directly subject to global supply chain or trade risks. Additionally, our well-diversified portfolio has a significant proportion of sales from resilient industries such as healthcare, food, beverage and electronics. This combination of contractual revenues, a well-diversified and resilient portfolio and localized markets enables us to better align our cost structure with each market reality.

Our record backlog of more than \$10 billion in projects provides a strong growth foundation for the next several years. Many of these projects will supply blue chip companies such as Samsung, TSMC, Sinopec, ExxonMobil, Phillips66 and BASF and are all supported by long-term contracts to protect expected returns.

All of these business traits result in a resilient business model supported by a very robust and high-quality balance sheet. Our track record of expanding free cash flow through the most challenging economic cycles has enabled 27 straight years of annual dividend growth and instills confidence that we'll continue that trend going forward.

Our mission statement *making our world more productive* includes resource efficiency – making more with less – and being a good steward of the environment in the places we live and work around the world. To that end, we announced ambitious new climate change goals, including a commitment to lower our GHG emissions intensity by 35% by 2028, which marks 10 years from the date of the merger. As the world drives towards a low carbon future, we anticipate a new wave of opportunities from decarbonization, including green hydrogen for mobility, hydrogen for renewable fuels, and carbon capture utilization and sequestration.

When you combine our resilient business model with a record project backlog, strong balance sheet, growth opportunities from decarbonization and a successful track record through many cycles – you can see why I remain confident in our ability to deliver outstanding value for stakeholders regardless of the challenges we face.

Stay safe!



Steve Angel

Chief Executive Officer

Highlights

Singapore – ExxonMobil Project

Single largest investment (\$1.4 bn)
for Linde

Linde has signed a long-term agreement with ExxonMobil Asia Pacific Pte. Ltd. to support the latest multi-billion dollar expansion of the company's integrated manufacturing complex in Singapore. With an investment of \$1.4 billion this will be the single largest sale of gas contract in the history of the newly merged Linde and of its legacy companies.

The project will include building and operating four additional gasifiers, a 1,200 metric ton per day air separation plant, as well as Linde's proprietary downstream gas processing units and sulphur recovery plants. Upon completion, the investment will supply hydrogen, carbon monoxide and synthesis gas to ExxonMobil and other customers on Jurong Island and quadruple Linde's present capacity.

Sustainability – Dow Jones World Index



Included for 17 consecutive years

Linde has been included in the Dow Jones Sustainability World Index in its first year as a new company. To be listed, the companies must demonstrate continuous improvement in a variety of economic, ecological and social criteria. Linde was rated as the third highest company in the chemical sector.

Linde Participates in Swiss H₂ Joint Venture

10 % stake in Hydros spider AG
acquired

The investment offers the opportunity to shape one of the most attractive projects for green hydrogen and emission-free mobility in Europe. Hydros spider will be producing and marketing green hydrogen from renewable electricity. Linde will contribute its experience in the construction and operation of electrolysis plants.

Investment in Electrolysis Technology

ITM Linde Electrolysis: Investment of \$50 mm in the development of electrolysis technology as part of our H₂ strategy

The transaction provides Linde with a strategic investment in a world leading manufacturer of integrated hydrogen energy solutions. In addition to its investment, Linde has formed a joint venture (JV) with ITM Power to implement projects based on ITM Power's technology. The JV will open new commercial opportunities, create capacity to deliver a higher volume of projects, shorten lead times, improve execution and reduce costs.

Linde Leadership



From left to right:

Eduardo Menezes Executive Vice President EMEA

Matt White Executive Vice President and Chief Financial Officer

Jürgen Nowicki Executive Vice President and CEO Linde Engineering

Steve Angel Chief Executive Officer and Member of the Board of Directors

Anne Roby Executive Vice President

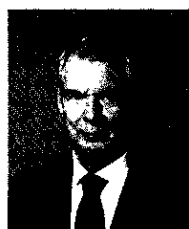
Sanjiv Lamba Executive Vice President APAC

Andreas Opfermann Executive Vice President Americas

Board of Directors



Wolfgang Reitzle
Chairman,
Executive Committee
(Chairman)



Steve Angel
Executive Committee



Ann-Kristin Achleitner
Compensation Committee,
Nomination and
Governance Committee



Clemens Börsig
Audit Committee
(Chairman),
Nomination and
Governance Committee



Nance Dicciani
Audit Committee,
Compensation Committee



Thomas Enders
Executive Committee,
Audit Committee



Franz Fehrenbach
Compensation Committee,
Nomination and
Governance Committee



Edward Galante
Compensation Committee
(Chairman),
Audit Committee



Larry McVay
Audit Committee,
Nomination and
Governance Committee



Victoria Ossadnik
Audit Committee,
Compensation Committee



Martin Richenhagen
Compensation Committee,
Nomination and
Governance Committee



Robert Wood
Nomination and
Governance Committee
(Chairman),
Executive Committee

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

Sustainable Development

Best-in-class safety performance

4x better than U.S. Occupational
Health and Safety Administration
industrial average for lost
workday case rate

Several applications enabled
**2x more
GHG emissions
to be avoided**
than were emitted in all of the
company's operations

Building
**world's first
hydrogen station**
for fuel cell-powered
passenger trains

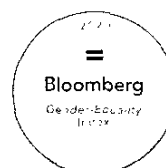
Operate world's
**first commercial
hydrogen storage
cavern**

The most on purpose
**H₂ electrolysis
operating experience**
in the industry: 40 MW, 80 units

300,000
students in our communities
benefitted from employee
community engagement projects

An industry leader in
diversity & inclusion

MEMBER OF
**Dow Jones
Sustainability Indices**
In Collaboration with RobecoSAM



Linde's 2028 Climate Goals

Drive **operational efficiency** across our business to further reduce GHG intensity

Invest +\$1 billion in **decarbonization projects**

Spend at least **1/3 of our R&D annual budget** on decarbonization

As a result, we will lower our GHG emissions intensity by 35 %, compared with a 2018 baseline.*

Double our annual purchases of **renewable power**

Continue to develop **industry leading technologies** like **electrolysis**

Continue to invest in promising **green H₂ technologies**

*2018 baseline: 12.5 tCO₂e/tonne of product. GHG emissions vs adjusted EBITDA

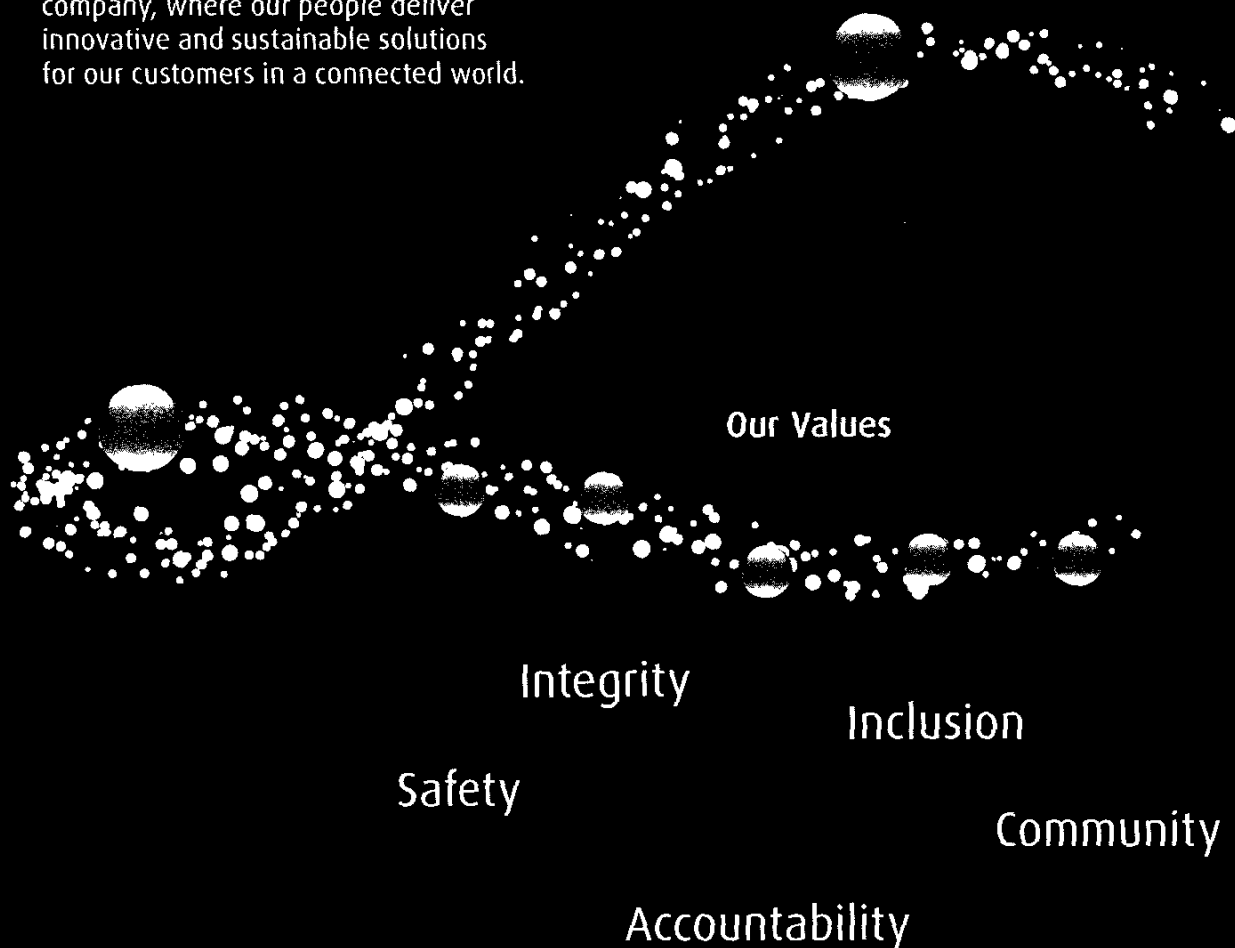
Our Mission, Vision and Values

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.



**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, 2019

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

(State or other jurisdiction of incorporation)

98-1448883

(I.R.S. Employer Identification No.)

The Priestley Centre

10 Priestley Road,

Surrey Research Park,

Guildford, Surrey GU2 7XY

United Kingdom

(Address of principal executive offices) (Zip Code)

+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:
Ordinary shares (€0.001 nominal value per share)

Trading Symbol(s)
LIN

Name of each exchange on which registered:
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-I (§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 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, 2019, was approximately \$108 billion (based on the closing sale price of the stock on that date as reported on the New York Stock Exchange).

At January 31, 2020, 532,959,736 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 2020 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, 2019

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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 ability to successfully integrate the Praxair and Linde AG businesses; regulatory or other requirements imposed as a result of the business combination of Praxair and Linde AG that could reduce anticipated benefits of the transaction; the risk that Linde plc may be unable to achieve expected synergies or that it may take longer or be more costly than expected to achieve those synergies; 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 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, including the impact of the U.S. Tax Cuts and Jobs Act of 2017; 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.

Linde plc and Subsidiaries

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. Linde plc was formed in 2017 in accordance with the requirements of the business combination agreement, dated June 1, 2017, as amended, between Linde plc, Praxair, Inc. ("Praxair") and Linde Aktiengesellschaft ("Linde AG"). Effective October 31, 2018, the business combination was completed and Linde plc is comprised of the businesses of Praxair and Linde AG (hereinafter the combined group will be referred to as "the company" or "Linde").

The business combination brought together two leading companies in the global industrial gases industry, leveraging the proven strengths of each. Linde believes the merger will combine Linde AG's long-held expertise in technology with Praxair's efficient operating model, thus creating a global leader. The company is expected to have strong positions in key geographies and end markets that will create a more diverse and balanced global portfolio.

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). The company also designs and builds equipment that produces industrial gases primarily for internal use 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, petroleum refining, manufacturing, food, beverage carbonation, fiber-optics, steel making, aerospace, chemicals, electronics and water treatment.

In 2018, the company, Praxair and Linde AG entered into various agreements with regulatory authorities to satisfy antitrust requirements to secure approval to consummate the business combination. These agreements required the sale of the majority of Praxair's European industrial gases business (completed on December 3, 2018), the majority of Linde AG's Americas industrial gases business (completed on March 1, 2019), select assets of Linde AG's South Korea industrial gases business (completed April 30, 2019), select assets of Praxair's Indian industrial gases business (completed July 12, 2019), select assets of Linde AG's Indian industrial gases business (completed December 16, 2019) as well as certain divestitures of other Praxair and Linde AG businesses in Asia that are expected to be sold in 2020. As of December 31, 2018 and until the completion of the majority of such divestitures, Linde AG and Praxair were obligated to operate their businesses globally as separate and independent companies, and not coordinate any of their commercial operations. The U.S. Federal Trade Commission's ("FTC") hold separate order ("HSO") restrictions were lifted March 1, 2019, concurrent with the sale of the required merger-related divestitures in the United States. See Note 4 to the consolidated financial statements for additional information relating to divestitures.

Praxair was determined to be the accounting acquirer in the business combination. Accordingly, the historical financial statements of Praxair for the periods prior to the business combination are considered to be the historical financial statements of the company. The results of Linde AG are included in Linde's consolidated results from the date of the completion of the business combination forward. During 2018, the company reported its continuing operations in six reporting segments under which it managed its operations, assessed performance, and reported earnings: North America, South America, Asia, Europe, Surface Technologies and Linde AG. Effective with the lifting of the hold separate order on March 1, 2019, new operating segments were established. Linde's industrial gases operations are managed on a geographic basis, which represents three of the company's new 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.

Linde's sales were \$28,228 million, \$14,836 million, and \$11,358 million for 2019, 2018, and 2017, respectively. Refer to Item 7, Management's Discussion and Analysis, for a discussion of consolidated sales and Note 20 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, carbon monoxide, helium, specialty gases and acetylene are produced by methods other than air separation. 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. Hydrogen and carbon monoxide can be produced by either steam methane reforming or auto-thermal reforming of natural gas or other feed streams such as naphtha. Hydrogen is also produced by purifying by-product sources obtained from the chemical and petrochemical industries. Acetylene is primarily sourced as a chemical by-product, but may also be produced from calcium carbide and water.

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. Customers using these systems usually enter into requirement contracts with terms typically ranging from ten to twenty years.

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 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.

A substantial amount of the cylinder gases sold in the United States are distributed by independent distributors that buy merchant gases in liquid form and repackage the products in their facilities. Packaged gas distributors, including Linde, also distribute hardgoods and welding equipment purchased from independent manufacturers. Over time, Linde has acquired a number of independent industrial gases and welding products distributors at various locations in the United States and continues to sell merchant gases to other independent distributors. Between its own distribution business, joint ventures and sales to independent distributors, Linde is represented in 48 states, the District of Columbia and Puerto Rico.

Engineering

Linde's Engineering business has a global presence, with its focus on market segments such as olefin, natural gas, air separation, hydrogen and synthesis gas plants. The company utilizes its own extensive process engineering know-how in the planning, project development and construction of turnkey industrial plants and associated services. Linde 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 hydrogen and synthesis gases, to treat natural gas and to produce noble gases. The Engineering business either supplies plant components and services directly to the customer or to the industrial gas business of Linde which operates the plants on behalf of the customer under a long-term gases supply contract.

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Inventories – Linde carries inventories of merchant and cylinder gases, hardgoods and coatings materials 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 70% of its 2019 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, France, Sweden, the Republic of South Africa, and the United Kingdom); approximately 20 Asian and South Pacific countries (including China, Taiwan, India and Australia); 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 international business is subject to risks customarily encountered in foreign 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, 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 as well as the frequent introduction of new industrial gas applications. Research and development is primarily conducted at Pullach, 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, specialty gases and surface technologies, 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 the industrial gases, engineering and healthcare businesses, 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 and medical 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 and Labor Relations – As of December 31, 2019, Linde had 79,886 employees worldwide. Linde has collective bargaining agreements with unions at numerous locations throughout the world, which expire at various dates. Linde considers relations with its employees to be satisfactory.

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.

Stephen F. Angel, 64, is Chief Executive Officer of Linde. Prior to that, Mr. Angel was Chairman, President and CEO of Praxair, Inc. since 2007. Angel joined Praxair in 2001 as an executive vice president and was named president and chief operating officer in February 2006. Prior to joining Praxair, Angel spent 22 years in a variety of management positions with General Electric. Angel serves on the board of directors of PPG Industries and the U.S.-China Business Council and is a member of The Business Council. Angel received a bachelor of science degree in civil engineering from North Carolina State University and an MBA from Loyola College in Baltimore.

Dr. Christian Bruch, age 49, became an executive officer and a member of the Management Committee of Linde in connection with the business combination in October 2018. He is also the Head of Engineering for Linde and is a member of the Executive Board of Linde AG. Dr. Bruch joined The Linde Group's Gases Division in 2004 as a Business Development Manager for Airgases. In 2006 he became the Head of Tonnage Business Development for air separation projects in Europe, the Middle East and Africa. In 2009 he transferred to the Engineering Division, where he was responsible for the product line Air Separation Plants. In 2013 he was appointed a member of the Board of Directors at the Engineering Division, a position he held until becoming a member of the Executive Board of Linde AG at the beginning of 2015 responsible for the Linde Engineering Division and the Corporate & Support Function Technology & Innovation. Prior to joining The Linde Group, Dr. Bruch worked for the Swiss Institute of Technology in Zürich and for the RWE Group in Essen, Germany.

Kelcey E. Hoyt, age 50, became the Chief Accounting Officer of Linde in connection with the business combination in October 2018. Prior to this, she served as Vice President and Controller of Praxair, Inc. effective August 1, 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 had five years of experience in audit at KPMG, LLP.

Sanjiv Lamba age 55, became an executive officer and a member of the Management Committee of Linde in connection with the business combination in October 2018. He is the Head of APAC. 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. He was appointed Managing Director for BOC's India's business in 2001. Throughout his years with BOC/Linde, he has worked in a number of geographies including Germany, the UK, Singapore and India where he has held numerous roles across the organization.

Eduardo F. Menezes, age 56, became an executive officer and a member of the Management Committee of Linde in connection with the business combination in October 2018. He is the Head of EMEA. Mr. Menezes previously served as Executive Vice President of Praxair, Inc. since 2012, responsible for Praxair Europe, Praxair Mexico, Praxair South America and Praxair Asia. From 2010 to March 2011, he was a Vice President of Praxair with responsibility for the North American Industrial Gases business and was named senior vice president in 2011. From 2007 to 2010, he was President of Praxair Europe. He served as Managing Director of Praxair's business in Mexico from 2004 to 2007, as Vice President and General Manager for Praxair Distribution, Inc. from 2003 to 2004 and as Vice President, U.S. West Region, for North American Industrial Gases, from 2000 to 2003.

Dr. Andreas Opfermann, 48, became Executive Vice President of Americas and a member of the Management Committee of Linde in November 2019. Prior to this, from 2016-2019, he was the regional business unit leader for Linde's North European region. Dr. Opfermann joined Linde in 2005 initially in Corporate Strategy. He has subsequently served as Head of Innovation Management from 2008 to 2010, Head of Clean Energy and Innovation Management from 2010 to 2014, and Head of Technology and Innovation from 2015 to 2016, responsible for all Linde research and development. Before joining Linde, he held positions at McKinsey & Company.

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Anne K. Roby, age 55, became an executive officer and a member of the Management Committee of Linde in connection with the business combination in October 2018. She is the Head of Global Functions. Prior to this, Dr. Roby served as Senior Vice President of Praxair, Inc. since January 1, 2014, responsible for Global Supply Systems, R&D, Global Market Development, Global Operations Excellence, Global Strategic Sales, Global Procurement, Sustainability and Safety, Health and Environment. From 2011 to 2013, she served as President of Praxair Asia, responsible for Praxair's industrial gases business in China, India, South Korea and Thailand as well as the electronics market globally. In 2010, Dr. Roby became President of Praxair Electronics, after having served as Vice President, Global Sales, for Praxair from 2009 to 2010. Prior to this, she was Vice President of the Praxair U.S. South Region from 2006 to 2009. Dr. Roby joined Praxair in 1991 as a development associate in the company's R&D organization and was promoted to other positions of increasing responsibility.

Matt J. White, age 47, became an executive officer and a member of the Management Committee of Linde in connection with the business combination in October 2018. He is the Chief Financial Officer for Linde. 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 2011-2014. 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:

The company may fail to realize the anticipated strategic and financial benefits sought from the business combination.

The company may not realize all of the anticipated benefits of the business combination between Praxair, Inc. and Linde AG, which was completed on October 31, 2018. The success of the business combination will depend on, among other things, the company's ability to combine Praxair, Inc.'s and Linde AG's businesses in a manner that facilitates growth and realizes the anticipated annual synergies and cost reductions without adversely affecting current revenues and investments in future growth. The actual integration will continue to involve complex operational, technological and personnel-related challenges. Difficulties in the integration of the businesses, which may result in significant costs and delays, include:

- managing a significantly larger combined group;
- aligning and executing the strategy of the company;
- integrating and unifying the offerings and services available to customers and coordinating distribution and marketing efforts in geographically separate organizations;
- coordinating corporate and administrative infrastructures and aligning insurance coverage;
- coordinating accounting, reporting, information technology, communications, administration and other systems;
- addressing possible differences in corporate cultures and management philosophies;
- the company being subject to Irish laws and regulations and legal action in Ireland;
- coordinating the compliance program and uniform financial reporting, information technology and other standards, controls, procedures and policies;
- the implementation, ultimate impact and outcome of post-completion reorganization transactions, which may be delayed;
- unforeseen and unexpected liabilities related to the business combination or the combined businesses;
- managing tax costs or inefficiencies associated with integrating operations;
- identifying and eliminating redundant and underperforming functions and assets; and
- effecting actions that may be required in connection with obtaining regulatory approvals.

These and other factors could result in increased costs and diversion of management's time and energy, as well as decreases in the amount of expected revenue and earnings. The integration process and other disruptions resulting from the business combination may also adversely affect the company's relationships with employees, suppliers, customers, distributors, licensors and others with whom Praxair, Inc. and Linde AG have business or other dealings, and difficulties in integrating the businesses could harm the reputation of the company.

If the company is not able to successfully integrate the businesses of Praxair, Inc. and Linde AG in an efficient, cost-effective and timely manner, the anticipated benefits and cost savings of the business combination may not be realized fully, or at all, or may take longer to realize than expected.

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 100 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, electronics, 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, specialty gases and surface technologies, 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, domestic and international tax laws 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. For example, Linde has a meaningful presence in the U.K. and the U.K.'s ongoing exit process from the EU has continued to cause, and may in the future cause, political and economic uncertainty, which could have an adverse impact on the markets which Linde supplies.

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, 2019, the net carrying value of goodwill and other indefinite-lived intangible assets was \$27 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; 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 air separation 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, operational failures and breaches of security from increasingly sophisticated cyber threats could lead to the loss or disclosure of confidential information, result in business interruption or malfunction or regulatory actions and have a material adverse impact on Linde's operations, reputation and 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.

In addition to the business combination, 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;
- domestic and international 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, such as evolving environmental legislation in China, 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. Such changes may also restrict Linde's ability to compete effectively in the marketplace. 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.

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 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 will be 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, including the U.K.'s ongoing exit process from the EU, tax rates and policies in any jurisdiction, including the U.S., the U.K. and the EU, are subject to significant change. 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 United Kingdom and becomes resident in another jurisdiction, it may be subject to United Kingdom 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 disagree with 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.

When tax rules change, this may result in a higher tax expense and the need to make higher tax payments. In addition, changes in tax legislation may have a significant impact on Linde's and its subsidiaries' tax receivables and tax liabilities as well as on their deferred tax assets and deferred tax liabilities and uncertainty about the tax environment in some regions may restrict their opportunities to enforce their respective rights under the law. Linde also operates in countries with complex tax regulations which could be interpreted in different ways. Interpretations of these regulations or changes in the tax system might have an adverse impact on the tax liabilities, profitability and business operations of

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Linde. Linde and its subsidiaries are subject to periodic audits by the tax 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.

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 plc's principal executive offices are located in owned office space in Guildford, United Kingdom. Linde also owns principal administrative office space in Danbury, Connecticut and Houston, Texas, United States; Pullach, Germany; and Singapore.

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, 2019. Generally, these facilities are fully 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. Many of the South American plants support one pipeline complex in Southern Brazil. 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 Italy, Spain, Germany, the Benelux region, the United Kingdom, Scandinavia and Russia which include approximately 230 cryogenic air separation plants and carbon dioxide plants. Also located throughout Europe are noncryogenic air separation plants, packaged gas facilities and other smaller plant facilities.

APAC

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

Engineering

The Linde Engineering business designs and constructs turnkey process plants for third-party customers as well as for the Linde gases businesses in many locations worldwide, such as olefin plants, natural gas plants, air separation plants, hydrogen and synthesis gas plants. Plant components are produced in owned factories in Pullach and Tacherting, Germany; Hesingue, France; 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 – 19. 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, 2019 there were 9,322 shareholders of record.

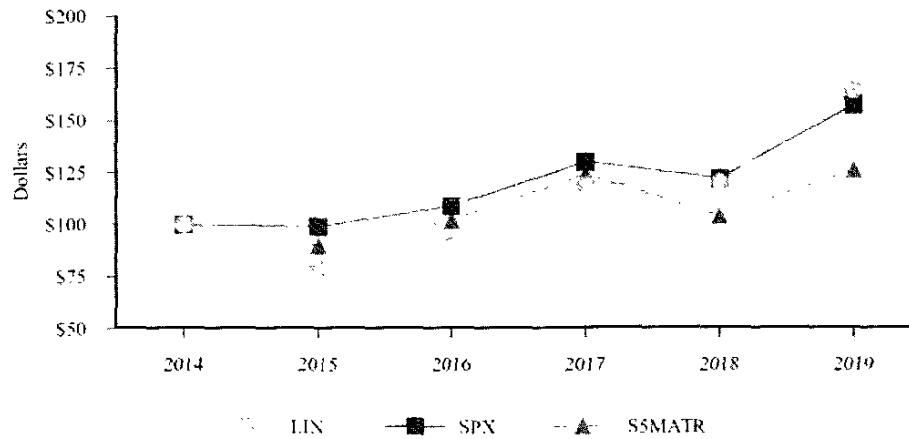
Purchases of Equity Securities – Certain information regarding purchases made by or on behalf of the company or any affiliated purchaser (as defined in Rule 10b-18(a)(3) under the Securities Exchange Act of 1934, as amended) of its ordinary shares during the three months ended December 31, 2019 is provided below:

<u>Period</u>	<u>Total Number of Shares Purchased (Thousands)</u>	<u>Average Price Paid Per Share</u>	<u>Total Number of Shares Purchased as Part of Publicly Announced Program (1) (Thousands)</u>	<u>Approximate Dollar Value of Shares that May Yet be Purchased Under the Program (2) (Millions)</u>
October 2019	716	\$ 191.19	716	\$ 4,322
November 2019	1,039	\$ 205.74	1,039	\$ 4,108
December 2019	1,896	\$ 207.31	1,896	\$ 3,715
Fourth Quarter 2019	3,651	\$ 203.70	3,651	\$ 3,715

- (1) On January 22, 2019 the company's board of directors approved the repurchase of \$6.0 billion of its ordinary shares ("2019 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 2019 program has a maximum repurchase amount of 15% of outstanding shares and a stated expiration date of February 1, 2021.
- (2) As of December 31, 2019, the company repurchased \$2.3 billion of its ordinary shares pursuant to the 2019 program, leaving an additional \$3.7 billion authorized.

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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 from October 31, 2018 through December 31, 2019 with those of the Standard & Poor's 500 Index ("SPX") and the S5 Materials Index ("S5MATR") which covers 22 companies, including Linde. The figures assume an initial investment of \$100 on December 31, 2014 and that all dividends have been reinvested.



	2014	2015	2016	2017	2018	2019
LIN	\$100	\$79	\$90	\$119	\$120	\$164
SPX	\$100	\$99	\$109	\$130	\$122	\$157
S5MATR	\$100	\$90	\$102	\$124	\$104	\$126

ITEM 6. SELECTED FINANCIAL DATA
FIVE-YEAR FINANCIAL SUMMARY
(Dollar amounts in millions, except per share data)

The year ended December 31, 2019 reflects the results of both Praxair and Linde AG for the entire year. The year ended December 31, 2018 reflects the results of Praxair for the entire year and the results of Linde AG for the period beginning after October 31, 2018 (the merger date), including the impacts of purchase accounting (See Notes 1, 3 and 4 to the consolidated financial statements). The historical periods prior to 2018 reflect the results of Praxair.

Year Ended December 31,	2019(a)	2018(a)	2017(a)	2016(a)	2015(a)
From the Consolidated Statements of Income					
Sales	\$ 28,228	\$ 14,836	\$ 11,358	\$ 10,469	\$ 10,710
Cost of sales, exclusive of depreciation and amortization	16,644	9,020	6,382	5,790	5,852
Selling, general and administrative	3,457	1,629	1,207	1,145	1,152
Depreciation and amortization	4,675	1,830	1,184	1,122	1,106
Research and development	184	113	93	92	93
Cost reduction programs and other charges	567	309	52	96	165
Net gain on sale of businesses	164	3,294	—	—	—
Other income (expenses) – net	68	18	4	23	28
Operating profit	2,933	5,247	2,444	2,247	2,370
Interest expense – net	38	202	161	190	161
Net pension and OPEB cost (benefit), excluding service cost	(32)	(4)	(4)	9	49
Income from continuing operations before income taxes and equity investments	2,927	5,049	2,287	2,048	2,160
Income taxes on continuing operations	769	817	1,026	551	612
Income from continuing operations before equity investments	2,158	4,232	1,261	1,497	1,548
Income from equity investments	114	56	47	41	43
Income from continuing operations (including noncontrolling interests)	2,272	4,288	1,308	1,538	1,591
Noncontrolling interests from continuing operations	(89)	(15)	(61)	(38)	(44)
Income from continuing operations	\$ 2,183	\$ 4,273	\$ 1,247	\$ 1,500	\$ 1,547
Per Share Data – Linde plc Shareholders					
Basic earnings per share from continuing operations	\$ 4.03	\$ 12.93	\$ 4.36	\$ 5.25	\$ 5.39
Diluted earnings per share from continuing operations	\$ 4.00	\$ 12.79	\$ 4.32	\$ 5.21	\$ 5.35
Cash dividends per share	\$ 3.50	\$ 3.30	\$ 3.15	\$ 3.00	\$ 2.86
Weighted Average Shares Outstanding (000's) (b)					
Basic shares outstanding	541,094	330,401	286,261	285,677	287,005
Diluted shares outstanding	545,170	334,127	289,114	287,757	289,055
Other Information and Ratios					
Total assets	\$ 86,612	\$ 93,386	\$ 20,436	\$ 19,332	\$ 18,319
Total debt	\$ 13,956	\$ 15,296	\$ 9,000	\$ 9,515	\$ 9,231
Cash flow from operations	\$ 6,119	\$ 3,654	\$ 3,041	\$ 2,789	\$ 2,695
Net cash provided by (used for) investing activities	\$ 1,189	\$ 5,363	\$ (1,314)	\$ (1,770)	\$ (1,304)
Net cash used for financing activities	\$ (8,997)	\$ (4,998)	\$ (1,656)	\$ (659)	\$ (1,310)
Capital expenditures	\$ 3,682	\$ 1,883	\$ 1,311	\$ 1,465	\$ 1,541
Shares outstanding (000's)	534,381	547,242	286,777	284,901	284,879
Number of employees	79,886	80,820	26,461	26,498	26,657

(a) Amounts for 2019 include: (i) charges of \$567 million for cost reduction programs and other charges primarily related to the merger and synergies, (ii) pension settlement charges of \$97 million related to lump sum benefit payments made from pension plans, (iii) a net gain on sale of businesses of \$164 million and (iv) the purchase accounting impacts of the merger of \$1,952 million.

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Amounts for 2018 include: (i) charges of \$309 million for transaction costs and other charges primarily related to the merger, (ii) pension settlement charges of \$14 million related to lump sum benefit payments made from pension plans, (iii) income tax benefit, net of \$17 million due to U.S. Tax Cuts and Jobs Act and other tax charges, (iv) a net gain on sale of businesses of \$3,294 million, (v) bond redemption costs of \$26 million, and (vi) the purchase accounting impacts of the merger of \$714 million.

Amounts for 2017 include: (i) charges of \$52 million for transaction costs related to the merger, (ii) a pension settlement charge of \$2 million related to lump sum benefit payments made from an international pension plan, and (iii) income tax charges, net of \$394 million due to U.S. Tax Cuts and Jobs Act.

Amounts for 2016 include: (i) a \$16 million charge to interest expense related to the redemption of the \$325 million 5.20% notes due 2017, (ii) a pre-tax pension settlement charge of \$4 million related to lump sum benefit payments made from the U.S. supplemental pension plan, and (iii) pre-tax charges of \$96 million primarily related to cost reduction actions.

Amounts for 2015 include: (i) a pre-tax charge of \$165 million related to the cost reduction program and other charges; and (ii) a pre-tax charge of \$7 million related to a pension settlement.

See Notes 1, 3, 4, 5, 7, 13 and 18 to the consolidated financial statements.

- (b) As a result of the merger, share amounts for the year ended December 31, 2018 reflect the weighted averaging effect of Praxair shares outstanding prior to October 31, 2018 and Linde shares outstanding from October 31, 2018 through December 31, 2018.

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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MERGER OF PRAXAIR, INC. AND LINDE AG

Linde plc (“Linde”) is a public limited company formed under the laws of Ireland in 2017 in accordance with the requirements of the business combination agreement between Praxair, Inc. (“Praxair”) and Linde Aktiengesellschaft (“Linde AG”). On October 31, 2018 Praxair and Linde AG combined their respective businesses through an all-stock transaction, and became subsidiaries of Linde plc (collectively referred to as the “business combination” or “merger”). The business combination of Praxair and Linde AG has been accounted for using the acquisition method of accounting under the provisions of Financial Accounting Standards Board (“FASB”) Accounting Standards Codification 805, “Business Combinations,” with Praxair representing the accounting acquirer under this guidance. Accordingly, the historical financial statements of Praxair for the periods prior to the merger are considered to be the historical financial statements of Linde. The results of Linde AG are included in Linde’s consolidated results from the merger date forward. The Linde shares trade on the New York Stock Exchange and the Frankfurt Stock Exchange under the ticker symbol “LIN”. See Notes 1 and 3 to the consolidated financial statements for additional information.

In connection with the business combination, the company, Praxair and Linde AG, entered into various agreements with regulatory authorities to satisfy anti-trust requirements to secure approval to consummate the business combination. These agreements required the sale of the majority of Praxair’s European businesses (completed on December 3, 2018), a significant portion of Linde AG’s Americas business (completed on March 1, 2019), select assets of Linde AG’s South Korean industrial gases business (completed April 30, 2019), select assets of Praxair’s Indian industrial gases business (completed July 12, 2019), select assets of Linde AG’s Indian industrial gases business (completed December 16, 2019) as well as certain divestitures of other Praxair and Linde AG businesses in Asia that are currently expected to be sold in 2020 (collectively, the “merger-related divestitures”). In the consolidated financial statements included in Item 8, Praxair’s merger-related divestitures are included in the results of operations until sold and Linde AG’s merger-related divestitures are accounted for as discontinued operations. See Notes 1, 3 and 4 to the consolidated financial statements included in Item 8 for additional information relating to merger-related divestitures.

Additionally, to obtain merger approval in the United States Linde, Praxair and Linde AG entered into an agreement with the U.S. Federal Trade Commission dated October 1, 2018 (“hold separate order” or “HSO”). Under the HSO, the company, Praxair and Linde AG agreed to continue to operate Linde AG and Praxair as independent, ongoing, economically viable, competitive businesses held separate, distinct, and apart from each other’s operations; and not coordinate any aspect of their operations until certain divestitures in the United States were completed. Accordingly, Linde had accounted for Linde AG as a separate segment for 2018 reporting purposes effective with the merger date. Prior to the merger date, the company’s Linde AG segment did not exist. Since the FTC hold separate order restrictions were lifted effective March 1, 2019, the company subsequently implemented a new segment structure as follows: Americas; EMEA

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(Europe/Middle East/Africa); APAC (Asia/South Pacific) and Engineering. This new management organization structure was implemented during the first quarter 2019 and, accordingly, segment information has been retrospectively recast for all prior periods.

ITEMS AFFECTING COMPARABILITY

Because Praxair and Linde AG combined their respective businesses effective with the merger date of October 31, 2018, the year ended December 31, 2019 reflects the results and cash flows of the combined business, while the year ended December 31, 2018 includes twelve months of Praxair and two months of Linde AG. Due to the size of Linde AG's businesses prior to the merger, the reported results for 2019 and 2018 periods are not comparable. The balance sheets at December 31, 2019 and December 31, 2018 are comparable because both periods reflect the merger.

Pro Forma Income Statement Information

Therefore, to assist with a discussion of the 2019 and 2018 results on a comparable basis, certain supplemental unaudited pro forma income statement information is provided on both a consolidated and segment basis (referred to as "pro forma income statement information" or "pro forma information").

The pro forma information has been prepared on a basis consistent with Article 11 of Regulation S-X, assuming the merger and merger-related divestitures had been consummated on January 1, 2018. In preparing this pro forma information, the historical financial information has been adjusted to give effect to pro forma Adjustments that are (i) directly attributable to the business combination and other transactions presented herein, such as the merger-related divestitures, (ii) factually supportable, and (iii) expected to have a continuing impact on the combined entity's consolidated results. The pro forma information is based on management's assumptions and is presented for illustrative purposes and does not purport to represent what the results of operations would actually have been if the business combination and merger-related divestitures had occurred as of the dates indicated or what the results would be for any future periods. Pro forma information was not developed for the year ended December 31, 2017. Also, the pro forma information does not include the impact of any revenue, cost or other operating synergies that may result from the business combination or any related restructuring costs.

BUSINESS OVERVIEW

With the merger, Linde is the leading industrial gas company worldwide. 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 primarily for internal use; 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 2019 83% of sales were generated by Linde's three geographic segments (Americas, EMEA and APAC) and the remaining 17% is related primarily to the Engineering segment, and to a lesser extent Other (see Note 20 to the consolidated financial statements for operating segment details).

Linde serves a diverse group of industries including healthcare, petroleum refining, manufacturing, food, beverage carbonation, fiber-optics, steel making, aerospace, chemicals and water treatment. 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 twelve 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.

<u>North and South America ("Americas")</u>	<u>Europe, Middle East and Africa ("EMEA")</u>	<u>Asia and Pacific ("APAC")</u>
United States	Germany	China & Taiwan
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. 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 energy, electronics, chemicals, metals, healthcare, food and beverage, and aerospace.

EXECUTIVE SUMMARY – FINANCIAL RESULTS & OUTLOOK

2019 Year in review

On October 31, 2018 Praxair and Linde AG combined their respective businesses through an all-stock merger transaction, and became subsidiaries of Linde plc. The year ended December 31, 2018 reflects the results of Praxair for the entire year and the results of Linde AG for the period beginning after October 31, 2018.

- Sales of \$28,228 million were 90% above 2018 sales of \$14,836 million, primarily driven by the merger that contributed 89% to sales, net of divestitures. Underlying sales increased 1% driven by 3% higher pricing across all geographic segments and 1% volume growth, partially offset by unfavorable currency translation and lower cost pass-through.
- Reported operating profit of \$2,933 million was 44% below 2018 primarily driven by the net gain on sale of businesses in 2018 partially offset by the impact of the merger, including purchase accounting impacts, in the current year. On an adjusted pro forma basis, operating profit increased \$476 million, or 10%, for 2019 versus 2018, as the impacts of higher pricing and volumes were partially offset by unfavorable currency impacts and cost inflation.*
- Income from continuing operations of \$2,183 million and diluted earnings per share from continuing operations of \$4.00 decreased from \$4,273 million and \$12.79, respectively in 2018. Adjusted pro forma income from continuing operations of \$4,003 million and adjusted pro forma diluted earnings per share from continuing operations of \$7.34 were 17% and 19%, respectively above 2018 adjusted pro forma amounts.*
- Cash flow from operations was \$6,119 million, or 22% of sales. Capital expenditures were \$3,682 million; dividends paid were \$1,891 million; net purchases of ordinary shares of \$2,586 million; and debt repayments, net were \$1,260 million.

* A reconciliation of the adjusted pro forma amounts can be found in the "Supplemental Pro Forma Income Statement Information" and "Non-GAAP Financial Measures" section in this MD&A. See Notes 1, 3, 4, 5, 7, 13 and 18 to the consolidated financial statements.

2020 Outlook

The company's business is to build, own, and operate industrial gas plants in order to supply atmospheric and process gases to customers. As such, Linde believes that its sale of gas project backlog is one indicator of future sales growth. At December 31, 2019, Linde's sale of gas backlog of large projects under construction was \$4.4 billion. This represents the total estimated capital cost of large plants under construction. APAC and Americas represent 64 percent and 29 percent of the backlog, respectively, with the remaining backlog in EMEA. These plants will primarily supply customers in the energy, chemical, and electronics end-markets.

The above outlook should be read in conjunction with the section entitled "Forward-Looking Statements."

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 following table provides summary information for 2019, 2018 and 2017. The reported amounts are GAAP amounts from the Consolidated Statements of Income. The pro forma and adjusted pro forma amounts are intended to supplement investors' understanding of the company's financial information and are not a substitute for GAAP measures. The year ended December 31, 2018 reflects the results of Praxair for the entire year and the results of Linde AG for the period beginning after October 31, 2018 (the merger date), including the impacts of purchase accounting (See Notes 1, 3 and 4 to the consolidated financial statements). The historical periods prior to 2018 reflect the results of Praxair, Inc:

(Millions of dollars, except per share data) Year Ended December 31, Reported Amounts	Reported Amounts (GAAP)					Pro Forma Amounts (a)		
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017	2019	2018	2019 vs. 2018
Sales	\$ 28,228	\$ 14,836	\$ 11,358	90 %	31 %	\$ 28,163	\$ 28,084	— %
Cost of sales, exclusive of depreciation and amortization	\$ 16,644	\$ 9,020	\$ 6,382	85 %	41 %	\$ 16,584	\$ 16,929	(2)%
As a percent of sales	59.0%	60.8%	56.2%			58.9%	60.3%	
Selling, general and administrative	\$ 3,457	\$ 1,629	\$ 1,207	112 %	35 %	\$ 3,456	\$ 3,635	(5)%
As a percent of sales	12.2%	11.0%	10.6%			12.3%	12.9%	
Depreciation and amortization	\$ 4,675	\$ 1,830	\$ 1,184	155 %	55 %	\$ 4,675	\$ 4,924	(5)%
Cost reduction programs and other charges (b)	\$ 567	\$ 309	\$ 52			\$ 377	\$ 56	
Net gain on sale of businesses (b)	\$ 164	\$ 3,294	\$ —			\$ —	\$ —	
Operating Profit	\$ 2,933	\$ 5,247	\$ 2,444	(44)%	115 %	\$ 2,955	\$ 2,561	15 %
Operating margin	10.4%	35.4%	21.5%			10.5%	9.1%	
Interest expense – net	\$ 38	\$ 202	\$ 161	(81)%	25 %	\$ 38	\$ 379	(90)%
Net pension and OPEB cost (benefit), excluding service cost	\$ (32)	\$ (4)	\$ (4)	700 %	— %	\$ (129)	\$ (165)	(22)%
Effective tax rate	26.3%	16.2%	44.9%			24.6%	28.5%	
Income from equity investments	\$ 114	\$ 56	\$ 47	104 %	19 %	\$ 114	\$ 52	119 %
Noncontrolling interests from continuing operations	\$ (89)	\$ (15)	\$ (61)		(75)%	\$ (89)	\$ —	
Income from continuing operations	\$ 2,183	\$ 4,273	\$ 1,247	(49)%	243 %	\$ 2,322	\$ 1,729	34 %
Diluted earnings per share from continuing operations	\$ 4.00	\$ 12.79	\$ 4.32	(69)%	196 %	\$ 4.25	\$ 3.11	37 %
Diluted shares outstanding (c)	545,170	334,127	289,114	63 %	16 %	545,170	555,151	(2)%
Number of employees	79,886	80,820	26,461					
Adjusted Pro forma Amounts (d)								
Operating profit						\$ 5,272	\$ 4,796	10 %
Operating margin						18.7%	17.1%	
Income from continuing operations						\$ 4,003	\$ 3,433	17 %
Diluted earnings per share from continuing operations						\$ 7.34	\$ 6.19	19 %
Other Financial Data (d)								
EBITDA and pro forma EBITDA from continuing operations	\$ 7,722	\$ 7,133	\$ 3,675	8 %	94 %	\$ 7,744	\$ 7,537	3 %
As percent of sales	27.4%	48.1%	32.4%	(43)%	48 %	27.5%	26.8%	
Adjusted pro forma EBITDA from continuing operations						\$ 8,178	\$ 7,603	8 %
As percent of sales						29.0%	27.1%	

(a) Pro forma amounts are supplemental to the GAAP presentations and are prepared on a basis consistent with Article 11 of Regulation S-X. See "Supplemental Pro Forma Income Statement Information" and "Non-GAAP Reconciliations" sections of this MD&A.

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- (b) See Notes 4 and 5 to the consolidated financial statements.
- (c) As a result of the merger, share amounts for the year ended December 31, 2018 reflect the weighted averaging effect of Praxair shares outstanding prior to October 31, 2018 and Linde shares outstanding from October 31, 2018 through December 31, 2018.
- (d) Adjusted pro forma amounts and Other Financial Data are non-GAAP performance measures. A reconciliation of reported amounts to adjusted pro forma amounts can be found in the "Supplemental Pro Forma Income Statement Information" and "Non-GAAP Reconciliations" sections of this MD&A.

Results of Operations

The following table provides a summary of changes in consolidated reported and pro forma sales:

	2019 vs. 2018		2018 vs. 2017
	% Change		% Change
	Reported	Pro forma	Reported
Factors Contributing to Changes - Sales			
Volume	1 %	2 %	4 %
Price/Mix	3 %	2 %	2 %
Cost pass-through	(1)%	(1)%	1 %
Currency	(2)%	(4)%	(1)%
Acquisitions/Divestitures	89 %	1 %	25 %
	90 %	— %	31 %

2019 Compared With 2018

Sales

Reported sales increased \$13,392 million, or 90% for the year primarily due to the merger, net of related divestitures. On a pro forma basis sales increased \$79 million in 2019 compared to 2018.

On a reported basis, sales increased 90% to \$28,228 million in 2019 compared to \$14,836 million in 2018 primarily due to the merger, net of related divestitures. Volume increased sales by 1% driven by higher volumes largely in the APAC segment, including new project start-ups. Higher pricing across all geographic segments contributed 3% to sales. Currency translation decreased sales by 2% driven by the weakening of the Brazilian real, Canadian dollar and Chinese yuan against the US dollar. Lower cost pass-through, primarily natural gas, decreased sales by 1% with minimal impact on operating profit.

On a pro forma basis, sales were relatively flat with prior year. Volume growth of 2% was largely driven by higher volumes in the Americas and APAC segments, including new project start-ups. Higher pricing across the gases segments contributed 2% to sales. Unfavorable currency translation, primarily driven by the weakening of the Euro, British pound, Chinese yuan and Australian dollar, decreased sales by 4%. Lower cost pass-through, primarily natural gas, decreased sales by 1% with minimal impact on operating profit. Acquisitions, largely in the Americas segment, contributed 1% to sales.

Cost of sales, exclusive of depreciation and amortization

Reported cost of sales, exclusive of depreciation and amortization increased \$7,624 million, or 85%, for the year primarily due to the merger, net of related divestitures.

On a pro forma basis, cost of sales, exclusive of depreciation and amortization decreased \$345 million or 2% in 2019 as compared to 2018. Pro forma cost of sales, exclusive of depreciation and amortization was 58.9% of sales in the year versus 60.3% of sales for 2018. The decrease as a percentage of sales in the year was due primarily to higher pricing.

Selling, general and administrative expenses

Reported selling, general and administrative ("SG&A") expenses increased \$1,828 million, or 112%, in 2019 to \$3,457 million primarily due to the merger. On a pro forma basis, SG&A decreased \$179 million, or 5%, versus the 2018 period.

On a reported basis, SG&A increased 112% in 2019, primarily due to the merger. SG&A was 12.2% of sales in 2019 versus 11.0% in 2018, primarily due to the merger.

On a pro forma basis, SG&A decreased 5% in 2019 versus 2018. SG&A was 12.3% of sales in 2019 versus 12.9% in 2018. Currency impacts decreased SG&A by approximately \$145 million in the 2019 period. Excluding currency impacts, underlying SG&A decreased due to cost reduction actions and productivity improvements which also drove the improvement of SG&A as a percentage of sales in the period.

Depreciation and amortization

Reported depreciation and amortization expense increased \$2,845 million, or 155%, versus 2018. The increase is primarily due to the merger, including \$1,940 million of purchase accounting impacts related to the depreciation and amortization of the fair value adjustments of fixed assets and intangible assets acquired in the merger.

On a pro forma basis, depreciation and amortization expense decreased \$249 million, or 5%, versus 2018. Currency movements decreased depreciation and amortization by approximately \$197 million for the year. Excluding currency effects, depreciation and amortization expense decreased approximately \$52 million, primarily driven by measurement period adjustments recognized in 2019 (see Note 3 to the consolidated financial statements), partially offset by increases due to large project start-ups.

Cost reduction programs and other charges

Linde recorded cost reduction programs and other charges of \$567 million and \$309 million for 2019 and 2018, respectively, primarily related to merger and synergy-related costs and an asset impairment in the third quarter 2019 of approximately \$73 million related to a joint venture in APAC resulting from an unfavorable arbitration ruling (see Note 5 to the consolidated financial statements).

On an adjusted pro forma basis, these costs have been eliminated in both periods.

Operating profit

Reported operating profit decreased \$2,314 million in 2019, or 44%, primarily driven by the net gain on sale of businesses in 2018 partially offset by the impact of the merger, including purchase accounting impacts, in the current year. On an adjusted pro forma basis, operating profit increased \$476 million, or 10%, for 2019 versus 2018.

On a reported basis, operating profit decreased \$2,314 million, or 44%. 2019 includes Linde AG's operating results for the full year and a gain on merger-related divestitures of \$164 million, which was offset by \$1,952 million which primarily related to \$1,940 million of purchase accounting charges for additional depreciation and amortization, and \$567 million in cost reduction program and other charges. 2018 included Linde AG's operating results from October 31, 2018 forward and a gain on merger-related divestitures of \$3,294 million, partially offset by purchase accounting impacts of \$714 million and \$309 million of merger-related charges.

On an adjusted pro forma basis, which excludes the impacts of purchase accounting, cost reduction programs and other charges and net gains from merger-related divestitures, operating profit increased \$476 million, or 10%, as the impacts of higher pricing and volumes were partially offset by unfavorable currency impacts and cost inflation. A discussion of operating profit by segment is included in the segment discussion that follows.

Interest expense - net

Reported interest expense – net in 2019 decreased \$164 million, or 81%, versus 2018. On an adjusted pro forma basis interest expense decreased \$145 million, or 52% in 2019 as compared to 2018.

On a reported basis, interest expense - net decreased \$164 million in 2019 and included a decrease of \$96 million related to purchase accounting impacts on the fair value of debt acquired in the merger. Excluding this purchase accounting impact, reported interest expense decreased \$68 million in the year as interest on debt acquired in the merger was more than offset by higher interest income.

On an adjusted pro forma basis, interest expense - net decreased \$145 million in 2019 primarily due to lower debt levels and higher interest income.

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

Reported net pension and OPEB cost (benefit), excluding service cost was a benefit of \$32 million in 2019 versus a benefit of \$4 million in 2018 and included pension settlement charges of \$97 million and a net \$8 million curtailment charge (see Note 18 to the consolidated financial statements). Excluding the impact of these charges, the net pension and OPEB benefit, excluding service cost increased \$133 million in 2019, primarily due to the impact of pension and OPEB plans acquired in the merger.

On an adjusted pro forma basis, net pension and OPEB (benefit), excluding service cost was a benefit of \$129 million in 2019 versus a benefit of \$165 million in 2018.

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Effective tax rate

The reported effective tax rate ("ETR") for 2019 was 26.3% versus 16.2% in 2018. 2018 included the impact of the sale of Praxair's European industrial gas business (see Note 7 to the consolidated financial statements).

On an adjusted pro forma basis, the ETR for 2019 was 24.0% versus 25.8% in 2018.

Income from equity investments

Reported income from equity investments for 2019 increased \$58 million to \$114 million largely related to investments in APAC and EMEA. This increase is primarily related to the merger.

On an adjusted pro forma basis, income from equity investments for 2019 increased \$55 million to \$171 million. The increase is primarily related to increased earnings from equity investments.

Noncontrolling interests from continuing operations

At December 31, 2019, noncontrolling interests from continuing operations consisted primarily of noncontrolling shareholders' investments in APAC (primarily in China) and surface technologies.

Reported noncontrolling interests from continuing operations increased \$74 million to \$89 million in 2019 from \$15 million in 2018, primarily driven by the merger. 2019 noncontrolling interests includes a \$33 million impact for an asset impairment charge in the third quarter related to a joint venture in APAC (see Note 5 to the consolidated financial statements).

On an adjusted pro forma basis, noncontrolling interests from continuing operations increased \$10 million in 2019 driven by higher income from continuing operations.

Income from continuing operations

Reported income from continuing operations decreased \$2,090 million, or 49%, primarily due to the 2018 gain on merger-related divestitures, partially offset by the merger. Other impacts related to interest - net; net pension and OPEB cost (benefit), excluding service cost; income taxes; income from equity investments; and noncontrolling interest largely offset in the aggregate.

On an adjusted pro forma basis, which excludes the impacts of purchase accounting and other non-GAAP adjustments, income from continuing operations increased \$570 million, or 17%, in 2019 primarily due to higher adjusted pro forma operating profit, lower adjusted pro forma interest expense-net, lower adjusted ETR, and higher adjusted pro forma income from equity investments.

Diluted earnings per share from continuing operations

Reported diluted earnings per share from continuing operations decreased \$8.79, or 69%, in 2019 as compared to 2018, primarily due to lower net income from continuing operations and higher diluted shares outstanding as a result of the merger.

On an adjusted pro forma basis, diluted EPS of \$7.34 in 2019 increased 19% versus 2018, primarily due to higher adjusted pro forma income from continuing operations and lower diluted shares outstanding.

Employees

The number of employees at December 31, 2019 was 79,886, a decrease of 934 employees from December 31, 2018 primarily driven by cost reduction actions partially offset by acquisitions.

Other Financial Data

EBITDA increased to \$7,722 million in 2019 from \$7,133 million in 2018, primarily due to the merger.

Adjusted pro forma EBITDA from continuing operations increased to \$8,178 million for 2019 as compared to \$7,603 million in 2018 primarily due to higher income from continuing operations versus the prior year period.

See the "Supplemental Pro Forma Income Statement Information" for pro forma amounts and "Non-GAAP Reconciliations" for adjusted pro forma amounts sections below for definitions and reconciliations of these pro forma and adjusted pro forma non-GAAP measures to reported GAAP amounts.

Other Comprehensive Income (Loss)

Other comprehensive loss for the year ended December 31, 2019 of \$435 million resulted primarily from a decrease in the funded status of the company's largest retirement programs. Driven by the low discount rate environment,

the other comprehensive loss of \$544 million related to the remeasurement of such retirement programs was partially offset by benefits from cumulative translation adjustments. 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 9 to the consolidated financial statements for a summary of the currency translation adjustment component of accumulated other comprehensive income by segment.

2018 Compared With 2017

Sales increased 31% to \$14,836 million in 2018 compared to \$11,358 million in 2017 primarily reflecting the merger with Linde AG which contributed 25% to sales, net of divestitures. Underlying sales increased 6% driven by higher volumes and pricing. Volume growth of 4% was driven by higher volumes in North America and Asia, including new project start-ups. Higher overall pricing across all geographic segments contributed 2% to sales. Currency translation impact decreased sales by 1%. Higher cost pass-through, primarily natural gas, increased sales by 1% with minimal impact on operating profit. The divestiture of Praxair's European businesses in December of 2018 decreased sales by 1%.

Selling, general and administrative expenses increased \$422 million, or 35%, in 2018 to \$1,629 million primarily due to the merger. SG&A was 11.0% of sales in 2018 versus 10.6% in 2017, primarily due to the merger.

Depreciation and amortization expense increased \$646 million, or 55%, versus 2017. The increase is primarily due to the merger, including \$346 million of purchase accounting impacts related to the fair value of fixed assets and intangible assets acquired in the merger.

Cost reduction programs and other charges were \$309 million and \$52 million in 2018 and 2017, respectively and are primarily related to the merger. See Note 5 to the consolidated financial statements.

Net gain on the sale of businesses was \$3,294 million and related primarily to the divestiture of Praxair's European industrial gases business in connection with the merger. See Note 4 to the consolidated financial statements.

Other income (expenses) – net in 2018 was a \$18 million benefit versus a \$4 million benefit in 2017 (see Note 9 to the consolidated financial statements for a summary of major components). In North America, 2018 included a \$30 million asset impairment charge which was more than offset by \$43 million of gains on asset disposals. In Asia, 2018 included a \$22 million asset impairment charge, offset by a litigation settlement gain.

Reported operating profit of \$5,247 million in 2018 was \$2,803 million, or 115% higher than reported operating profit of \$2,444 million in 2017. 2018 includes a net gain on sale of businesses of \$3,294 million, partially offset by transaction costs and other charges of \$309 million, and purchase accounting impacts of \$714 million related to the Linde AG merger (see Notes 4, 5 and 3, respectively, to the consolidated financial statements). 2017 included transaction costs of \$52 million (see Note 5 to the consolidated financial statements). Excluding the impact of these items, adjusted operating profit of \$2,976 million in 2018 was \$480 million, or 19%, higher than adjusted operating profit of \$2,496 million in 2017 driven primarily by the merger. Higher volumes and price in the geographic segments and surface technologies also contributed to operating profit growth. A discussion of operating profit by segment is included in the segment discussion that follows.

Reported interest expense – net in 2018 increased \$41 million, or 25%, versus 2017. 2018 included charges of \$26 million relating to the early redemption of notes and a decrease of \$21 million related to purchase accounting impacts related to the fair value of debt acquired in the merger (see Notes 13 and 3 to the consolidated financial statements, respectively). Excluding these impacts, adjusted interest expense of \$197 million increased \$36 million, or 22%, largely attributable to interest on the debt acquired in the merger and lower capitalized interest. See Note 9 to the consolidated financial statements for further information relating to interest expense.

The reported effective tax rate ("ETR") for 2018 was 16.2% versus 44.9% in 2017. The decrease in the ETR for the 2018 period versus the U.S. statutory rate of 21% was primarily due to the impact of the sale of Praxair's European industrial gases business. The increase in the ETR for the 2017 period versus the U.S. statutory rate of 35% was primarily due to the net \$394 million charge related to the Tax Act. Excluding these and other smaller impacts as set forth in the "Non-GAAP financial measures" section of this MD&A, on an adjusted basis the ETR for the 2018 and 2017 periods was 23.8% and 27.2%, respectively. The decrease was driven primarily by the impact of the Tax Act enacted in the fourth quarter of 2017 which lowered the U.S. statutory tax rate from 35% in 2017 to 21% in 2018 (see Note 7 to the consolidated financial statements).

Equity income increased \$9 million in 2018 versus 2017 and included charges of \$9 million for purchase accounting impacts related to the fair value step up of equity investments acquired in the merger. Excluding this impact, equity income increased \$18 million, primarily driven by income from equity investments acquired in the merger.

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At December 31, 2018, reported noncontrolling interests from continuing operations consisted primarily of noncontrolling shareholders' investments in Asia (primarily in China) and surface technologies. Reported noncontrolling interests from continuing operations decreased \$46 million to \$15 million in 2018 from \$61 million in 2017. 2018 includes the impact of the merger and related purchase accounting impacts. Excluding these impacts, adjusted noncontrolling interests from continuing operations of \$73 million increased \$12 million, or 20%, primarily due to noncontrolling interests acquired in the merger.

Reported income from continuing operations for 2018 was \$4,273 million, \$3,026 million, or 243%, higher than reported income from continuing operations of \$1,247 million in 2017. Adjusted income from continuing operations of \$2,121 million in 2018 was \$431 million, or 26%, higher than adjusted income from continuing operations of \$1,690 million in 2017 primarily due to higher adjusted operating profit and a lower effective tax rate.

Reported diluted earnings per share from continuing operations ("EPS") of \$12.79 in 2018 increased \$8.47 per diluted share, or 196% from \$4.32 in 2017. Adjusted diluted EPS of \$6.35 in 2018 increased \$.50 per diluted share, or 9%, from adjusted diluted EPS of \$5.85 in 2017. The increase in adjusted diluted EPS was primarily due to the merger and higher adjusted income from continuing operations; partially offset by an increase in diluted shares resulting from equity acquired in the merger.

Other comprehensive losses for the year ended December 31, 2018 of \$299 million resulted primarily from (i) a \$221 million unfavorable impact in the funded status of Linde's retirement obligations and (ii) adverse currency translation adjustments of \$76 million, net of a benefit of \$318 million related to the release of currency translation adjustments on Praxair's European business (See Note 4 to the consolidated financial statements). The decrease in the funded status of retirement obligations was primarily the result of higher current year actuarial losses, as the impact of higher U.S. discount rates was largely offset by a lower actual return on assets. Unfavorable translation adjustments reflect the impact of translating local currency foreign subsidiary financial statements into U.S. dollars, and are largely driven by the strengthening of the U.S. dollar against major currencies including the Euro, Brazilian real and Canadian dollar.

Unfavorable currency translation adjustments included \$343 million in South America and \$149 million in Asia, partially offset by favorable currency translation adjustments of \$231 million related to Linde AG (primarily Europe and Asia) representing translation impacts for the period from merger date through December 31, 2018. Remaining other comprehensive losses of \$2 million relate to the amortization of deferred losses on the company's derivatives and unrealized losses on available for sale securities. Refer to the Currency section of the MD&A and Notes 9 and 18 to the consolidated financial statements.

The number of employees at December 31, 2018 was 80,820, an increase of 54,359 employees from December 31, 2017 primarily driven by an increase of approximately 56,000 related to the merger partially offset by a decrease of approximately 2,500 from the divestiture of Praxair's European industrial gases business.

Other Financial Data

Earnings before interest taxes depreciation and amortization ("EBITDA") increased \$3,458 million to \$7,133 million in 2018 from \$3,675 million in 2017. EBITDA in 2018 includes a gain on sale of businesses and purchase accounting impacts, and both periods include transaction and other costs. Excluding the impacts of these items, adjusted EBITDA increased \$789 million to \$4,516 million in 2018 from \$3,727 million in 2017 driven by the consolidation of Linde AG starting October 31, 2018, and higher adjusted income from continuing operations plus depreciation and amortization versus the prior year.

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

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 historically have not had a significant impact on the environment. However, worldwide costs relating to environmental

protection may continue to grow due to increasingly stringent laws and regulations, and Linde's ongoing commitment to rigorous internal standards. 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 perceived adverse effects of greenhouse gas ("GHG") emissions and 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, and Linde and many of its suppliers and customers are subject to these rules. 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, GHGs are regulated in the European Union under the Emissions Trading System, which has wide implications for the company's customers and may impact certain operations of Linde in Europe. There are also requirements for mandatory reporting in Canada, which apply to certain Linde operations and will be used in developing cap-and-trade regulations on GHG emissions. These regulations are expected to impact certain Linde facilities in Canada. Climate change and energy efficiency laws and policies are also being widely introduced in jurisdictions throughout Latin America and parts of Asia. China has announced plans to implement its national carbon emissions trading system in 2020, though it does not appear the regulations will have a direct impact on GHG emissions from Linde facilities. 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 its hydrogen business, as hydrogen is essential to refineries that use it to remove sulfur from transportation fuels in order to meet ambient air quality standards in the United States and fuel standards in other regions. 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 footprint through research and development in customer applications and rigorous operational energy efficiency, investment in renewable energy, and purchasing hydrogen as a chemical byproduct where feasible. Linde maintains related performance improvement targets and reports progress against these targets regularly to business management and annually to Linde's Board of Directors.

At the same time, Linde may benefit from business opportunities arising from 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 lower emissions, including GHG emissions, in Linde's processes and help customers lower energy consumption and increase 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. 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 2019 were not significant. Linde anticipates that future annual environmental protection expenditures will be similar to 2019, 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 19 to the consolidated financial statements for information concerning legal proceedings.

Retirement Benefits

Pensions

The net periodic benefit cost for the U.S. and international pension plans was \$107 million in 2019, \$24 million in 2018 and \$58 million in 2017. The net periodic pension cost for 2019 includes pension settlement charges of \$97 million related to lump sum payments, which were triggered by either a change in control provision or merger-related divestitures and a net curtailment charge of \$8 million for termination benefits, primarily in connection with a defined benefit pension plan freeze. Settlement charges for 2018 and 2017 were \$14 million and \$2 million, respectively.

The funded status (pension benefit obligation ("PBO") less the fair value of plan assets) for the U.S. plans was a deficit of \$504 million as of December 31, 2019 and a deficit of \$556 million at December 31, 2018. The funded status for international plans was a deficit of \$1,801 million as of December 31, 2019 and a deficit of \$1,241 million at December 31, 2018. In the U.S., the benefit from the actual return on assets more than offset the impacts of unfavorable liability experience, resulting from the low discount rate environment. For the international plans, the unfavorable impact of lower discount rates outweighed favorable plan asset experience.

Global pension contributions were \$94 million in 2019, \$87 million in 2018 and \$19 million in 2017. 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 cash. Changes to these factors can impact the timing of discretionary contributions from year to year. Estimated required contributions for 2020 are currently expected to be in the range of \$50 million to \$80 million.

Linde assumes expected returns on plan assets for 2020 of 7.00% and 5.31% for the U.S. and international plans, respectively, which are consistent with the long-term expected returns on its investment portfolios.

Excluding the impact of any settlements, 2020 consolidated pension expense is expected to be a benefit of approximately \$45 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 amortization of deferred losses.

Refer to the Critical Accounting Policies section and Note 18 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 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 effecting 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, 2019 and 2018, the company had recorded a total of \$66 million and \$60 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

Effective October 31, 2018, Praxair and Linde AG completed the previously announced merger, resulting in the formation of Linde plc (see Note 1 to the consolidated financial statements for additional information on the merger). As a result of the merger and effective with the lifting of the hold separate order effective on March 1, 2019, new operating segments were created which are used by the company's Chief Operating Decision Maker ("CODM") to allocate company resources and assess performance. 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 new 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 remains unchanged - 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. For a description of Linde's previous operating segments, refer to Note 20 to the consolidated financial statements of Linde's 2018 Annual Report on Form 10-K.

The table below presents sales and operating profit information about reportable segments and Other for the year ended December 31, 2019, 2018 and 2017. The year ended December 31, 2019 reflects the results of both Praxair and Linde AG for the entire year. The year ended December 31, 2018 reflects the results of Praxair for the entire year and the results of Linde AG for the period beginning after October 31, 2018 (the merger date), including the impacts of purchase accounting (See Notes 1, 3 and 4 to the consolidated financial statements). The historical periods prior to 2018 reflect the results of Praxair. Prior periods presented have been recast to be consistent with the new segment structure.:

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Reported

(Millions of dollars)
Year Ended December 31,

Sales

	2019	2018	2017	Variance	
				2019 vs. 2018	2018 vs. 2017
Americas	\$ 10,993	\$ 8,017	\$ 7,204	37%	11%
EMEA	6,643	2,644	1,520	151%	74%
APAC	5,839	2,446	1,571	139%	56%
Engineering	2,799	459	N/A	N/M	N/A
Other	1,954	1,270	1,063	54%	19%
	<u>\$ 28,228</u>	<u>\$ 14,836</u>	<u>\$ 11,358</u>	90%	31%

Operating Profit

Americas	\$ 2,578	\$ 2,053	\$ 1,854	26%	11%
EMEA	1,367	481	317	184%	52%
APAC	1,198	465	329	158%	41%
Engineering	390	14	N/A	N/M	N/A
Other	(245)	(37)	(4)	N/M	N/M
Segment operating profit	<u>5,288</u>	<u>2,976</u>	<u>2,496</u>	78%	19%

Reconciliation to reported operating Profit :

Cost reduction programs and other charges (Note 5)	(567)	(309)	(52)		
Net gain on sale of businesses	164	3,294	N/A		
Purchase accounting impacts - Linde AG	(1,952)	(714)	N/A		
Total operating profit	<u>\$ 2,933</u>	<u>\$ 5,247</u>	<u>\$ 2,444</u>		

Pro Forma

(Dollar amounts in millions)
Year Ended December 31,

Sales

	2019	2018	Variance
			2019 vs. 2018
Americas	\$ 10,989	\$ 10,539	4 %
EMEA	6,643	6,991	(5)%
APAC	5,779	5,950	(3)%
Engineering	2,799	2,792	— %
Other	1,953	1,812	8 %
	<u>\$ 28,163</u>	<u>\$ 28,084</u>	— %

Operating Profit

Americas	\$ 2,577	\$ 2,433	6 %
EMEA	1,367	1,344	2 %
APAC	1,184	1,029	15 %
Engineering	390	285	37 %
Other	(246)	(295)	(17)%
Segment operating profit	<u>\$ 5,272</u>	<u>\$ 4,796</u>	10 %

Americas

(Dollar amounts in millions) Year Ended December 31,				Variance	
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
Reported sales	\$ 10,993	\$ 8,017	\$ 7,204	37%	11%
Pro forma sales	\$ 10,989	\$ 10,539	N/A	4%	N/A
Reported operating profit	\$ 2,578	\$ 2,053	\$ 1,854	26%	11%
As a percent of sales	23.5%	25.6%	25.7%		
Pro forma operating profit	\$ 2,577	\$ 2,433	N/A	6%	N/A
As a percent of sales	23.5%	23.1%	N/A		

	2019 vs. 2018		2018 vs. 2017
	% Change		% Change
	Reported	Pro forma	Reported
Factors Contributing to Changes - Sales			
Volume/Equipment	— %	1 %	3 %
Price/Mix	3 %	3 %	2 %
Cost pass-through	(1)%	(1)%	1 %
Currency	(2)%	(2)%	(2)%
Acquisitions/Divestitures	37 %	3 %	7 %
	37 %	4 %	11 %

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

Sales

Reported sales for the Americas segment for 2019 increased \$2,976 million, or 37%, versus 2018, primarily due to the merger. On a pro forma basis, sales increased \$450 million, or 4%, versus 2018.

On a reported basis, sales increased 37% in 2019 primarily due to the merger. Higher pricing contributed 3% to sales. Unfavorable currency translation decreased sales by 2%, primarily driven by the weakening of the Brazilian real, Mexican peso and Canadian dollar against the U.S. Dollar. Lower cost pass-through, primarily natural gas, decreased sales by 1% with minimal impact on operating profit.

On a pro forma basis, volume growth contributed 1% to sales in 2019 as compared to 2018 primarily driven by base volume growth in the United States and Latin America and project start ups in the United States Gulf Coast. Higher pricing contributed 3% to sales. Currency translation decreased sales by 2%. Acquisitions and divestitures increased sales by 3%, related primarily to acquisitions in North America. Lower cost pass-through decreased sales by 1% with minimal impact on operating profit.

Reported sales for 2018 increased \$813 million, or 11%, versus 2017 primarily due to the merger which contributed 7% to sales. Underlying sales growth was 4%, driven by higher volumes and higher price. Unfavorable currency impacts decreased sales by 2%. Higher cost pass-through increased sales by 1% with minimal impact on operating profit.

Operating Profit

Reported operating profit for the Americas segment for 2019 increased \$525 million, or 26% from 2018, due primarily to the merger. On a pro forma basis, operating profit increased \$144 million, or 6%, for 2019 as compared to 2018.

On a reported basis, operating profit increased 26% in 2019 largely driven by the merger and higher pricing, partially offset by unfavorable currency translation impacts of 2%.

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Pro forma operating profit in the Americas segment increased \$144 million for 2019, or 6%, versus the 2018 period. Operating growth from higher volumes, higher price and acquisitions was partially offset by unfavorable currency translation impacts of 2% in the year. The 2018 year also included net gains on asset disposals of approximately \$20 million.

Reported operating profit for 2018 increased \$199 million, or 11%, driven primarily by the merger, higher volumes and higher price partially offset by unfavorable currency translation. The 2018 period also included net gains on asset disposals of \$13 million.

EMEA

(Dollar amounts in millions) Year Ended December 31,				Variance	
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
Reported sales	\$ 6,643	\$ 2,644	\$ 1,520	151 %	74%
Pro forma sales	\$ 6,643	\$ 6,991	N/A	(5)%	N/A
Reported operating profit	\$ 1,367	\$ 481	\$ 317	184 %	52%
As a percent of sales	20.6%	18.2%	20.9%		
Pro forma operating profit	\$ 1,367	\$ 1,344	N/A	2 %	N/A
As a percent of sales	20.6%	19.2%	N/A		

Factors Contributing to Changes	2019 vs. 2018		2018 vs. 2017
	% Change		% Change
	Reported	Pro forma	Reported
Volume		(1)%	1%
Price/Mix	1 %	2 %	2%
Cost pass-through	(1)%	— %	2%
Currency	(1)%	(6)%	4%
Acquisitions/Divestitures	153 %	— %	65%
	151 %	(5)%	74%

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

Sales

On a reported basis, EMEA segment sales increased by \$3,999 million, or 151%, in 2019 as compared to 2018, primarily due to the merger, net of related divestitures. On a pro forma basis, sales decreased \$348 million, or 5%, in 2019 versus 2018.

On a reported basis, sales increased 151% in 2019 driven primarily by the net impact of the merger with Linde AG and the related divestiture of Praxair's European gases business in the fourth quarter of 2018. Excluding this net impact, sales decreased 2%. Volumes decreased 1% driven by weaker industrial production. Higher price contributed 1% to sales. Unfavorable currency translation and cost pass-through each decreased sales by 1%.

On a pro forma basis, sales decreased 5% in 2019, primarily driven by unfavorable currency translation due to the weakening of the Euro, British pound and South African rand against the U.S. Dollar which decreased sales by 6%. Higher price increased sales by 2%. Volumes decreased 1% driven by weaker industrial production.

Reported sales increased \$1,124 million, or 74%, in 2018 driven primarily by the merger, net of related divestitures. Excluding the impact of the merger and related divestitures, sales increase 9% from 2017. Higher cost pass-through

increased sales by 2% with minimal impact on operating profit. Favorable currency translation increased sales by 4%. Higher volumes and higher price increased sales by 1% and 2%, respectively.

Operating Profit

On a reported basis, operating profit for the EMEA segment increased by \$886 million, or 184%, in 2019 as compared to 2018. On a pro forma basis, operating profit increased \$23 million, or 2%, in 2019 versus the respective 2018 period.

On a reported basis, operating profit increased 184% in 2019, driven primarily by the net impact of the merger with Linde AG and the related divestiture of Praxair's European gases business in the fourth quarter of 2018.

On a pro forma basis, operating profit increased 2% in 2019 as compared to 2018 as higher pricing and the impact of cost reduction actions more than offset the impacts of unfavorable currency translation and cost inflation.

Reported operating profit increased \$164 million, or 52%, in 2018 driven primarily by the merger, net of related divestitures. Favorable currency translation increased operating profit by 5%. Excluding the impact of the merger and related divestitures and currency, operating profit increased driven by higher price and higher volumes, partially offset by cost inflation.

APAC

(Dollar amounts in millions) Year Ended December 31,				Variance	
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
Reported sales	\$ 5,839	\$ 2,446	\$ 1,571	139 %	56%
Pro forma sales	\$ 5,779	\$ 5,950	N/A	(3)%	N/A
Reported operating profit	\$ 1,198	\$ 465	\$ 329	158 %	41%
As a percent of sales	20.5%	19.0%			
Pro forma operating profit	\$ 1,184	\$ 1,029	N/A	15 %	N/A
As a percent of sales	20.5%	17.3%	N/A		

Factors Contributing to Changes	2019 vs. 2018		2018 vs. 2017
	% Change		% Change
	Reported	Pro forma	Reported
Volume	4 %	1 %	9%
Price/Mix	2 %	2 %	2%
Cost pass-through	— %	(1)%	1%
Currency	(3)%	(4)%	1%
Acquisitions/Divestitures	136 %	(1)%	43%
	139 %	(3)%	56%

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

Sales

On a reported basis, APAC segment sales increased by \$3,393 million, or 139%, in 2019 as compared to 2018, primarily due to the merger. On a pro forma basis, sales decreased \$171 million, or 3%, in 2019 versus 2018.

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On a reported basis, sales increased 139% in 2019 driven by the merger. Unfavorable currency translation decreased sales by 3%, driven primarily by the weakening of the Chinese yuan, Korean won and Indian rupee against the U.S. Dollar. Excluding the impacts of the merger and currency, sales increased by 6% driven by higher base volumes, new project start ups and higher price.

On a pro forma basis, sales decreased 3% in 2019. Higher pricing increased sales by 2%. Higher volumes contributed 1% to sales driven by higher base volumes and new project start-ups. Currency translation decreased sales by 4%. Lower cost pass-through decreased sales by 1% with minimal impact on operating profit. Acquisitions and divestitures decreased sales by 1%.

Reported sales in 2018 increased \$875 million, or 56%, versus 2017 driven primarily by the merger which contributed 43% to sales. Cost pass-through, primarily energy, and currency impacts each increased sales by 1%. Volume growth of 9% was primarily attributable to base volume growth in China, Korea and India and new project start-ups in China. Higher price increased sales by 2% driven by China.

Operating Profit

On a reported basis, operating profit for the APAC segment increased by \$733 million, or 158%, in 2019 as compared to 2018, due primarily to the merger. On a pro forma basis, operating profit increased \$155 million, or 15%, in 2019 versus the respective 2018 period.

On a reported basis, operating profit increased 158% in 2019, driven by the net impact of the merger with Linde AG. Unfavorable currency translation decreased operating profit by 3% for the year. Excluding the merger and currency impacts, operating profit growth was driven by higher price and cost reduction programs.

On a pro forma basis, operating profit increased 15% in 2019 as compared to 2018. Unfavorable currency translation decreased operating profit by 5% in the year. Excluding currency impacts, operating growth was driven by higher price and cost reduction programs.

Reported operating profit in 2018 increased \$136 million, or 41%, versus 2017 driven primarily by the merger, higher volumes and price. Operating profit for 2018 included a \$22 million asset impairment charge, offset by a litigation settlement gain.

Engineering

(Dollar amounts in millions) Year Ended December 31,				Variance	
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
Reported sales	\$ 2,799	\$ 459	N/A	510%	100%
Pro forma sales	\$ 2,799	\$ 2,792	N/A	—%	N/A
Reported operating profit	\$ 390	\$ 14	N/A	N/M	100%
As a percent of sales	13.9%	3.1%			
Pro forma operating profit	\$ 390	\$ 285	N/A	37%	N/A
As a percent of sales	13.9%	10.2%	N/A		

Factors Contributing to Changes	2019 vs. 2018		2018 vs. 2017
	% Change		% Change
	Reported	Pro forma	Reported
Volume/Price	8 %	4 %	—%
Currency	(2)%	(4)%	—%
Acquisitions/Divestitures	504 %	— %	100%
	510 %	— %	100%

Sales

Reported Engineering segment sales increased \$2,340 million, or 510%, in 2019 as compared to the respective 2018 period. On a pro forma basis, segment sales increased \$7 million in 2019 as compared to the respective 2018 period.

On a reported basis, 2019 sales increased 510% in year primarily related to the merger of the Linde Engineering business. Excluding the impact of the merger, volume growth of 8% was partially offset by unfavorable currency translation of 2%.

On a pro forma basis, 2019 sales were flat versus 2018 as volume growth of 4% was offset by unfavorable currency translation of 4%.

Reported sales for 2018 increased 100% versus 2017 due to the merger of the Linde Engineering business.

Operating profit

Reported Engineering segment operating profit increased \$376 million, or 2,686%, in 2019 versus 2018. On a pro forma basis, operating profit increased \$105 million, or 37%, in 2019 versus 2018.

On a reported basis, operating profit increased in 2019 related primarily to the merger of the Linde Engineering business.

On a pro forma basis, operating profit increased 37% for the year. Unfavorable currency translation decreased operating profit by 4% in 2019. Excluding the impact of currency, operating profit increased due to timing of project completion, favorable costs and procurement savings.

Reported operating profit for 2018 increased 100% versus 2017 due to the merger of the Linde Engineering business.

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Other

(Dollar amounts in millions) Year Ended December 31,				Variance	
	2019	2018	2017	2019 vs. 2018	2018 vs. 2017
Reported sales	\$ 1,954	\$ 1,270	\$ 1,063	54 %	19%
Pro forma sales	\$ 1,953	\$ 1,812	N/A	8 %	N/A
Reported operating profit	\$ (245)	\$ (37)	\$ (4)	(562)%	825%
As a percent of sales	(12.5)%	(2.9)%			
Pro forma operating profit	\$ (246)	\$ (295)	N/A	17 %	N/A
As a percent of sales	(12.6)%	(16.3)%	N/A		

Factors Contributing to Changes	2019 vs. 2018		2018 vs. 2017
	% Change		% Change
	Reported	Pro forma	Reported
Volume/Price	9 %	12 %	8%
Currency	(2)%	(4)%	2%
Acquisitions/Divestitures	47 %	— %	9%
	54 %	8 %	19%

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

Sales

Reported sales for Other increased \$684 million, or 54%, for the 2019 year versus the respective 2018 period, primarily due to the merger. On a pro forma basis, sales increased \$141 million, or 8%, for 2019 versus the respective 2018 periods.

On a reported basis, sales increased 54% for the year, primarily due to the merger which increased sales by 47%. Higher volumes and price increased sales by 9% in the year, primarily driven by higher surface technologies volumes to the aerospace and manufacturing end-markets and higher price. Currency translation decreased sales by 2% for the year.

On a pro forma basis, sales increased 8% for 2019. Volume and price growth increased sales by 12%, driven by helium and surface technologies. Currency translation decreased sales by 4%.

Reported sales for 2018 increased \$207 million, or 19%, versus 2017 driven primarily by the merger. Excluding the impact of the merger, underlying sales increased driven by surface technologies volumes to the aerospace and manufacturing end-markets and higher price.

Operating profit

Reported operating profit in Other decreased \$208 million in 2019 versus the respective 2018 periods, due primarily to the merger. On a pro forma basis, operating loss improved \$49 million, or 17%, when comparing 2019 to the 2018 period.

On a reported basis, operating profit decreased \$208 million primarily related to the merger as operating profit increases from higher volumes and price were more than offset by the merger of Linde AG corporate.

On a pro forma basis, operating profit improved \$49 million in the year. Higher volumes, helium pricing and cost reduction actions improved operating profit which was partially offset by higher helium sourcing costs.

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Reported operating profit for 2018 decreased \$33 million versus 2017 primarily related to the merger as operating profit increases from higher volumes and price were more than offset by the merger of Linde AG corporate.

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):

Currency	Percent of 2019 Consolidated Sales	Statements of Income			Balance Sheets	
		Average Year Ended December 31,			December 31,	
		2019	2018	2017	2019	2018
Euro	20%	0.89	0.85	0.89	0.89	0.87
Chinese yuan	7%	6.90	6.60	6.76	6.96	6.88
British pound	6%	0.78	0.75	0.78	0.75	0.78
Australian dollar	4%	1.44	1.34	N/A	1.42	1.42
Brazilian real	4%	3.94	3.63	3.19	4.03	3.87
Korean won	3%	1,165	1,100	1,131	1,156	1,111
Canadian dollar	3%	1.33	1.30	1.30	1.30	1.36
Mexican peso	2%	19.24	19.20	18.86	18.93	19.65
Taiwan dollar	2%	30.90	30.13	30.43	29.99	30.55
Indian rupee	2%	70.40	68.00	65.00	71.38	69.77
South African rand	1%	14.43	13.16	N/A	14.00	14.35
Swedish kroner	1%	9.45	8.68	8.53	9.37	8.85
Thailand bhat	1%	31.04	32.30	33.91	29.71	32.33

LIQUIDITY, CAPITAL RESOURCES AND OTHER FINANCIAL DATA

(Millions of dollars)

Year Ended December 31,

Net Cash Provided by (Used for)

Operating Activities

	2019	2018	2017
Income from continuing operations (including noncontrolling interests)	\$ 2,272	\$ 4,288	\$ 1,308
Non-cash charges (credits):			
Add: Cost reduction programs and other charges, net of payments (a)	(236)	40	26
Add: Amortization of merger-related inventory step-up	12	368	—
Less: Net gain on sale of businesses, net of tax (b)	(108)	(2,923)	—
Add: Tax Act income tax charge, net	—	(61)	394
Add: Depreciation and amortization	4,675	1,830	1,184
Add (Less): Deferred income taxes, excluding Tax Act	(303)	(187)	136
Add (Less): non-cash charges and other	(32)	237	102
Income from continuing operations adjusted for non-cash charges and other	6,280	3,592	3,150
Less: Pension contributions	(94)	(87)	(19)
Add (Less): Working capital	(160)	202	(158)
Add (Less): Other	93	(53)	68
Net cash provided by operating activities	\$ 6,119	\$ 3,654	\$ 3,041

Investing Activities

Capital expenditures	\$ (3,682)	\$ (1,883)	\$ (1,311)
Acquisitions, net of cash acquired	(225)	(25)	(33)
Divestitures and asset sales, net of cash divested	5,096	5,908	30
Cash acquired in merger transaction	—	1,363	—
Net cash provided by (used for) investing activities	\$ 1,189	\$ 5,363	\$ (1,314)

Financing Activities

Debt increases (decreases) – net	\$ (1,260)	\$ (2,908)	\$ (771)
Issuances (purchases) of ordinary shares – net	(2,586)	(522)	108
Cash dividends – Linde plc shareholders	(1,891)	(1,166)	(901)
Noncontrolling interest transactions and other	(3,260)	(402)	(92)
Net cash (used) for financing activities	\$ (8,997)	\$ (4,998)	\$ (1,656)

Effect of exchange rate changes on cash

\$ (77)	\$ (60)	\$ 22
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Cash and cash equivalents, end-of-period

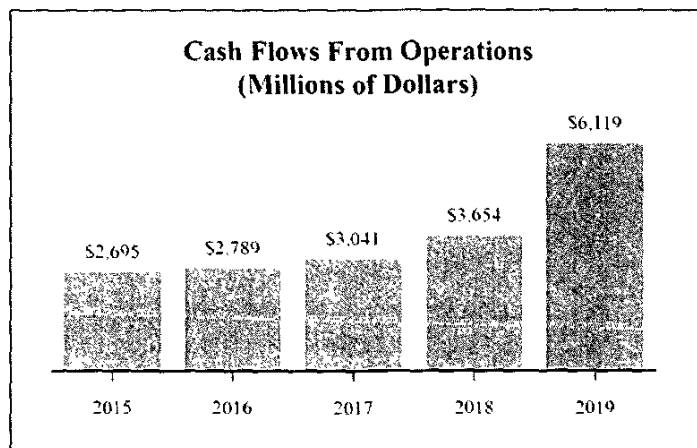
\$ 2,700	\$ 4,466	\$ 617
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(a) See Note 5 to the consolidated financial statements.

(b) See Note 4 to the consolidated financial statements.

Cash decreased \$1,766 million in 2019 versus 2018. The primary sources of cash in 2019 were cash flows from operations of \$6,119 million and proceeds from divestitures and asset sales of \$5,096 million. The primary uses of cash included capital expenditures of \$3,682 million, transactions with noncontrolling interests of \$3,260 million, net purchases of ordinary shares of \$2,586 million, cash dividends to shareholders of \$1,891 million and net debt repayments of \$1,260 million. Noncontrolling interest transactions and other of \$3,260 million included a payment of approximately \$3.2 billion related to the cash-merger squeeze-out of the 8% of Linde AG shares completed on April 8, 2019 (see Note 16 to the consolidated financial statements).

Cash Flows From Operations



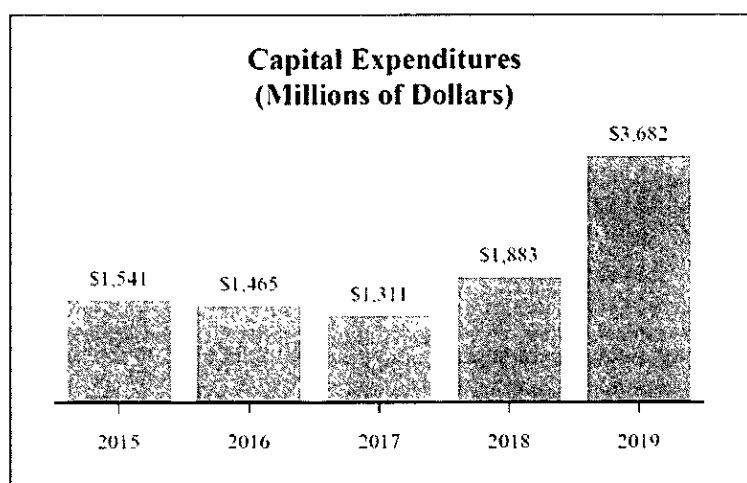
2019 compared with 2018

Cash flows from operations was \$6,119 million, or 22% of sales, an increase of \$2,465 million from \$3,654 million, or 25% of sales in 2018. The increase was primarily attributable to the merger which drove higher net income adjusted for non-cash charges, partially offset by higher working capital requirements and higher merger and synergy related cash outflows. 2019 included merger and synergy related cash outflows of \$803 million, of which \$567 million is included within "Net income (including noncontrolling interests)" and \$236 million is included within "Cost reduction programs and other charges, net of payments".

2018 compared with 2017

Cash flows from operations was \$3,654 million, or 25% of sales, an increase of \$613 million from \$3,041 million, or 27% of sales in 2017. The increase was primarily attributable to the merger, higher net income adjusted for non-cash charges and favorable working capital requirements, partially offset by unfavorable changes in other long-term assets and liabilities and higher pension contributions.

Investing



2019 compared with 2018

Net cash provided by investing activities of \$1,189 million decreased \$4,174 million from 2018 primarily driven by lower proceeds from merger-related divestitures, cash acquired in the merger and higher capital expenditures.

Capital expenditures in 2019 were \$3,682 million, an increase of \$1,799 million from 2018, driven primarily by the merger. Capital expenditures during 2019 related primarily to investments in new plant and production equipment for growth. Approximately 44% of the capital expenditures were in the Americas segment with 33% in the APAC segment and the rest primarily in the EMEA segment.

Acquisition expenditures in 2019 were \$225 million, an increase of \$200 million from 2018 and related primarily to acquisitions in the Americas.

Divestitures and asset sales in 2019 totaled \$5,096 million primarily driven by proceeds from merger-related divestitures including \$3.4 billion from the sale of Linde AG's Americas business, \$1.2 billion from the sale of Linde Korea, and approximately \$200 million each from the sale of the legacy Praxair and legacy Linde India selected assets (see Note 4 to the consolidated financial statements). 2018 divestiture and asset sale cash flows included \$5.6 billion from the sale of Praxair's European business and \$214 million related to the sale of Praxair's Italian joint venture (see Note 4 to the consolidated financial statements).

2018 compared with 2017

Net cash provided by investing activities of \$5,363 million increased \$6,677 million from 2017 primarily driven by proceeds from the divestiture of Praxair's European business and cash acquired in the merger, partially offset by higher capital expenditures.

Capital expenditures in 2018 were \$1,883 million, an increase of \$572 million from 2017, driven primarily by the merger with Linde AG. Capital expenditures during 2018 related primarily to investments in new plant and production equipment for growth and density.

Acquisition expenditures in 2018 were \$25 million, a decrease of \$8 million from 2017. Additionally, \$1,363 million of cash was acquired in the merger (see Note 3 to the consolidated financial statements).

Divestitures and asset sales in 2018 totaled \$5,908 million primarily driven by proceeds from merger-related divestitures including \$5.6 billion from the sale of Praxair's European business and \$214 million related to the sale of Praxair's Italian joint venture (see Note 4 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 14 to the consolidated financial statements and Item 7A. Quantitative and Qualitative Disclosures About Market Risk).

Cash used for financing activities was \$8,997 million in 2019 compared to \$4,998 million in 2018. The primary financing uses of cash were for transactions with noncontrolling interests, net debt repayments, cash dividends and net purchases of Linde ordinary shares. Noncontrolling interest transactions and other payments of \$3,260 million increased \$2,858 million from 2018 driven by a payment of approximately \$3.2 billion for the cash-merger squeeze-out of the 8% of Linde AG shares completed on April 8, 2019 (see Note 16 to the consolidated financial statements). Amounts paid in 2018 include \$315 million for the purchase of the noncontrolling interest in Praxair's Italian joint venture in a merger-related transaction (see Note 4 to the consolidated financial statements) and \$25 million in interest related to the early redemption of bonds. Cash dividends of \$1,891 million increased \$725 million from 2018 driven primarily by higher shares outstanding after the merger and a 6% increase in dividends per share from \$3.30 to \$3.50. Net purchases of ordinary shares were \$2,586 million in 2019 versus \$522 million in 2018 driven by increased share repurchases. The cash used for debt repayments-net of \$1,260 million decreased \$1,648 million from \$2,908 million during 2018 while cash decreased \$1,766 million. Net debt (calculated as total debt less cash and cash equivalents) increased \$426 million primarily due to lower cash balances partially offset by debt repayments.

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, 2019, 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 13 to the consolidated financial statements includes information with respect to the company's debt repayments in 2019, current debt position, debt covenants and the available credit facilities; and Note 14 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, 2019 and expects to remain in compliance for the foreseeable future.

Linde's total net debt outstanding at December 31, 2019 was \$11,256 million, \$426 million higher than \$10,830 million at December 31, 2018. The December 31, 2019 net debt balance includes \$12,752 million in public securities, \$1,204 million representing primarily worldwide bank borrowings, net of \$2,700 million of cash. Linde's global effective borrowing rate was approximately 2% for 2019.

In February 2019, Linde repaid \$500 million of 1.90% rate notes that became due; in May 2019 Linde repaid \$150 million of variable rate notes that became due; in June 2019 Linde repaid €500 million of 1.75% notes that due and AUD100 million of variable rate notes that became due; in August 2019 Linde repaid \$200 million of variable rate notes that became due.

On March 26, 2019 the company and certain of its subsidiaries entered into an unsecured revolving credit agreement ("the Credit Agreement") with a syndicate of banking institutions, which became effective on March 29, 2019. The 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 March 26, 2024 with the option to request two one-year extensions of the expiration date. In connection with the effectiveness of the Credit Agreement, Praxair and Linde AG terminated their respective existing revolving credit facilities. No borrowings were outstanding under the Credit Agreement as of December 31, 2019.

On September 3, 2019, Linde and the company's subsidiaries Praxair and Linde AG entered into a series of parent and subsidiary guarantees related to currently outstanding notes issued by Praxair and Linde AG as well as the \$5 billion Credit Agreement.

On December 10, 2018, the company announced a \$1.0 billion share repurchase program, which was completed in February of 2019. On January 22, 2019, the company's board of directors approved the additional repurchase of \$6.0 billion of its ordinary shares, of which \$2.3 billion had been repurchased through December 31, 2019. 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.

CONTRACTUAL OBLIGATIONS

The following table sets forth Linde's material contract obligations and other commercial commitments as of December 31, 2019:

(Millions of dollars)	Due or expiring by December 31,						Total
	2020	2021	2022	2023	2024	Thereafter	
Long-term debt obligations:							
Debt and capitalized lease maturities (Note 13)	\$ 1,531	\$ 1,855	\$ 2,330	\$ 1,798	\$ 983	\$ 3,727	\$ 12,224
Contractual interest	297	237	175	146	98	585	1,538
Operating leases (Note 6)	275	208	163	110	75	251	1,082
Retirement obligations	101	36	37	37	36	183	430
Unconditional purchase obligations	833	769	718	660	650	2,877	6,507
Construction commitments	2,234	871	291	25	—	—	3,421
Total Contractual Obligations	\$ 5,271	\$ 3,976	\$ 3,714	\$ 2,776	\$ 1,842	\$ 7,623	\$ 25,202

Contractual interest on long-term debt of \$1,538 million represents interest the company is contracted to pay on outstanding long-term debt, current portion of long-term debt and capital lease obligations, calculated on a basis consistent with planned debt maturities, excluding the interest impact of interest rate swaps. At December 31, 2019, Linde had fixed-rate debt of \$10,799 million and floating-rate debt of \$3,157 million. The rate assumed for floating-rate debt was the rate in effect at December 31, 2019.

Retirement obligations of \$430 million include estimates of pension plan contributions and expected future benefit payments for unfunded pension and OPEB plans. Pension plan contributions are forecasted for 2020 only. For purposes of the table, \$60 million of estimated contributions have been included for 2020. Expected future unfunded pension and OPEB benefit payments are forecasted only through 2029. Contribution and unfunded benefit payment estimates are based upon current valuation assumptions. Estimates of pension contributions after 2020 and unfunded benefit payments after 2029 are not included in the table because the timing of their resolution cannot be estimated. Retirement obligations are more fully described in Note 18 to the consolidated financial statements.

Unconditional purchase obligations of \$6,507 million represent contractual commitments under various long and short-term take-or-pay arrangements with suppliers and are not included on Linde's balance sheet. These obligations are primarily minimum-purchase commitments for helium, electricity, natural gas and feedstock used to produce atmospheric and process gases. A significant portion of these obligations is passed on to customers through similar take-or-pay or other contractual arrangements. Purchase obligations that are not passed along to customers through such contractual arrangements are subject to market conditions, but do not represent a material risk to Linde. Approximately \$2,983 million of the purchase obligations relates to power and is intended to secure the uninterrupted supply of electricity and feedstock to Linde's plants to reliably satisfy customer product supply obligations, and extend through 2030. Certain of the power contracts contain various cancellation provisions requiring supplier agreement, and many are subject to annual escalations based on local inflation factors.

Construction commitments of \$3,421 million represent outstanding commitments to complete authorized construction projects as of December 31, 2019. A significant portion of Linde's capital spending is related to the construction of new production facilities to satisfy customer commitments which may take a year or more to complete.

Liabilities for uncertain tax positions totaling \$415 million, including interest and penalties, are not included in the table because the timing of their resolution cannot be estimated. Tax liabilities for deemed repatriation of earnings of \$261 million are payable over the next six years. See Note 7 to the consolidated financial statements for disclosures surrounding the "Tax Act" and uncertain income tax positions.

OFF-BALANCE SHEET ARRANGEMENTS

As discussed in Note 19 to the consolidated financial statements, at December 31, 2019, 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 POLICIES

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.

Purchase Accounting

Linde AG's assets and liabilities were measured at fair value as of the date of the merger. Estimates of fair value represent management's best estimate of assumptions about future events and uncertainties. In determining the fair value, Linde utilized various forms of the income, cost and market approaches depending on the asset or liability being fair valued. The estimation of fair value includes significant judgments related to future cash flows (sales, costs, customer attrition rates, and contributory asset charges), discount rates, competitive trends, market comparables and others. Inputs were generally obtained from historical data supplemented by current and anticipated market conditions and growth rates. The estimates and assumptions used to determine the estimated fair value assigned to each class of assets and liabilities, as well as asset lives, have a material impact to the company's consolidated financial statements, and are based upon assumptions believed to be reasonable but that are inherently uncertain. As of the end of 2019, the valuation process to determine the fair value of the acquired assets and liabilities is complete.

See Note 3 to the consolidated financial statements for additional information.

Depreciation and Amortization

Depreciable Lives of Property, Plant and Equipment

Linde's net property, plant and equipment at December 31, 2019 was \$29,064 million, representing 34% of the company's consolidated total assets. Depreciation expense for the year ended December 31, 2019 was \$3,940 million, or 16% of total operating costs. Management judgment is required in the determination of the estimated depreciable lives that are used to calculate the annual depreciation expense and accumulated depreciation.

Property, plant and equipment are recorded at cost and depreciated over the assets' estimated useful lives on a straight-line basis for financial reporting purposes. The estimated useful life represents the projected period of time that the asset will be productively employed by the company and is determined by management based on many factors, including historical experience with similar assets, technological life cycles, geographic locations and contractual supply relationships with on-site customers. Circumstances and events relating to these assets, such as on-site contract modifications, are monitored to ensure that changes in asset lives or impairments (see "Asset Impairments") are identified and prospective depreciation expense or impairment expense is adjusted accordingly. Linde's largest asset values relate to cryogenic air-separation production plants with depreciable lives of principally 15 years.

Based upon the assets as of December 31, 2019, if depreciable lives of machinery and equipment, on average, were increased or decreased by one year, annual depreciation expense would be decreased by approximately \$471 million or increased by approximately \$618 million, respectively.

See Notes 3, 9 and 10 to the consolidated financial statements for additional information.

Amortization of Other Intangible Assets

Linde's net other intangible assets at December 31, 2019 was \$16,137 million, representing 19% of the company's consolidated total assets, including \$1,870 million of indefinite-lived intangibles. Amortization expense related to finite-lived intangible assets for the year ended December 31, 2019 was \$735 million, or 3% of total operating costs. Management judgment is required in the determination of the estimated amortizable lives that are used to calculate the annual amortization expense and accumulated amortization. See Note 12 to the consolidated financial statements.

Based upon the assets as of December 31, 2019, if amortization lives of other intangible assets, on average, were increased or decreased by one year, annual amortization expense would be decreased by approximately \$33 million or increased by approximately \$36 million, respectively.

See Notes 3, 9, and 12 to the consolidated financial statements for additional information.

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. 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. 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.

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 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 (e.g., divestiture-related settlement charges, settlement charges resulting from change in control provisions, etc.).

The weighted-average expected long-term rates of return on pension plan assets were 7.27% for U.S. plans and 5.15% for international plans for the year ended December 31, 2019 (7.62% and 5.13%, respectively at December 31, 2018). The expected long-term rate of return on the U.S. and international 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 \$8,778 million, or \$158 million lower than the fair value of assets of \$8,936 million at December 31, 2019. These net deferred investment losses of \$158 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 international 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 international plans are based on market yields for high-quality fixed income investments representing the approximate duration of the pension liabilities on the measurement

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date. Refer to Note 18 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 2019 benefit costs. A 0.50% reduction in discount rates, with all other variables held constant, would increase Linde's pension expense by approximately \$29 million whereas a 0.50% increase in discount rates would result in a decrease of \$25 million. A 0.50% reduction in discount rates would increase the PBO by approximately \$976 million whereas a 0.50% increase in discount rates would have a favorable impact to the PBO of approximately \$855 million.

The weighted-average expected rate of compensation increase was 3.25% for U.S. plans and 2.46% for international plans at December 31, 2019 (3.25% and 2.38%, respectively, at December 31, 2018). 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 \$8 million and would impact the PBO by approximately \$65 million.

Asset Impairments

Goodwill and Other Indefinite-Lived Intangibles Assets

At December 31, 2019, the company had goodwill of \$27,019 million and \$1,870 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 or more frequently if events or circumstances indicate that an impairment loss may have been incurred. During the fourth quarter of fiscal year 2019, the company changed the date of its annual goodwill impairment test from April 30 to October 1. The change was made to more closely align the impairment testing date with the company's planning process. The change in annual impairment testing date did not delay, accelerate or avoid an impairment charge. The company has determined this change in the method of applying an accounting principle is preferable.

The impairment tests performed during the second and fourth quarters of 2019 indicated no impairment. At December 31, 2019, Linde's enterprise value was approximately \$125 billion (outstanding shares multiplied by the year-end stock price plus net debt, and without any control premium) while its total capital was approximately \$63 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. In estimating the fair value of each reporting unit, management applied a multiple of earnings from a peer group to the company's forecasted earnings for the year ending December 31, 2019. The peer group is comprised of comparable entities with similar operations and economic characteristics.

Such analysis requires the use of certain market assumptions and discount factors, which are subjective in nature. As applicable, estimated values can be affected by many factors beyond the company's control such as business and economic trends, government regulation, and technological changes. Management believes that the quantitative and qualitative factors used to perform its annual goodwill impairment assessment are appropriate and reasonable. Although the 2019 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 recent merger are at greater risk of impairment in future periods.

Other indefinite-lived intangible assets from Linde AG recently fair valued 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 3, 11 and 12 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, for property, plant and equipment 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 pipeline complex which includes multiple interdependent plants and related assets connected by pipelines within a geographic area used to support the same distribution methods.

Income Taxes

At December 31, 2019, Linde had deferred tax assets of \$2,179 million (net of valuation allowances of \$222 million), and deferred tax liabilities of \$8,825 million. At December 31, 2019, uncertain tax positions totaled \$472 million (see Notes 2 and 7 to the consolidated financial statements). Income tax expense was \$769 million for the year ended December 31, 2019, or about 26.3% of pre-tax income (see Note 7 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 19 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 2 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 15 to the consolidated financial statements.

SUPPLEMENTAL PRO FORMA INCOME STATEMENT INFORMATION

To assist with a discussion of the 2019 and 2018 results on a comparable basis, certain supplemental unaudited pro forma income statement information is provided on both a consolidated and segment basis (referred to as "pro forma Income Statement Information" or "pro forma information").

The pro forma information has been prepared on a basis consistent with Article 11 of Regulation S-X, assuming the merger and the merger-related divestitures had been consummated on January 1, 2018 and includes adjustments for (1) the preliminary purchase accounting impacts of the merger, including increased amortization expense on acquired intangible assets, increased depreciation on property, plant and equipment and lower interest expense due to revaluing existing debt to fair value, (2) conversion to US GAAP from IFRS for Linde AG, (3) accounting policy alignment, (4) the elimination of the impact of transactions between Praxair and Linde AG, (5) the elimination of the effect of events that are directly attributable to the Merger Agreement and (6) the elimination of the effect of consummated and probable divestitures required as a condition of the approval for the merger. In preparing this pro forma information, the historical financial information has been adjusted to give effect to pro forma Adjustments that are (i) directly attributable to the business combination and other transactions presented herein, such as the merger-related divestitures, (ii) factually supportable, and (iii) expected to have a continuing impact on the combined entity's consolidated results.

The pro forma information is based on management's assumptions and is presented for illustrative purposes and does not purport to represent what the results of operations would actually have been if the merger and merger-related divestitures had occurred as of the dates indicated or what the results would be for any future periods. Also, the pro forma information does not include the impact of any revenue, cost or other operating synergies that may result from the merger or any related restructuring costs. Events that are not expected to have a continuing impact on the combined results (e.g. inventory step-up costs, non-recurring income/charges) are excluded from the unaudited pro forma information.

The unaudited pro forma income statement has been presented for informational purposes only and is not necessarily indicative of what Linde's results of operation actually would have been had the merger been completed on January 1, 2018. In addition, the unaudited pro forma income statement does not purport to project the future operating results of the company.

The pro forma Income Statement Information are included in the following schedules:

- Year ended December 31, 2019 pro forma Income Statement Information
- Year ended December 31, 2018 pro forma Income Statement Information

Refer to an earlier section in this MD&A titled "Merger of Praxair, Inc. and Linde AG".

YEAR TO DATE DECEMBER 31, 2019 PRO FORMA INCOME STATEMENT INFORMATION

(Millions of dollars, except per share data)

(UNAUDITED)

		Pro forma Adjustments				
	Linde plc Reported	Divestitures (a)	Other		Total	Pro Forma
Sales	\$ 28,228	\$ (65)	\$ —		\$ (65)	\$ 28,163
Cost of sales, exclusive of depreciation	16,644	(48)	(12)	(b)	(60)	16,584
Selling, general and administrative	3,457	(1)			(1)	3,456
As a % of Sales	12.2%					12.3%
Depreciation and amortization	4,675				—	4,675
Research and development	184				—	184
Cost reduction programs and other charges	567		(190)	(c)	(190)	377
Net gain on sale of businesses	164		(164)	(d)	(164)	—
Other income (expense) - net	68				—	68
Operating profit	2,933	(16)	38		22	2,955
Operating margin	10.4%					10.5%
Net pension and OPEB cost (benefit), excluding service costs	(32)		(97)	(e)	(97)	(129)
Interest expense - net	38				—	38
Income taxes	769	(5)	(15)	(f)	(20)	749
Effective Tax Rate	26.3%					24.6%
Income from equity investments	114				—	114
Noncontrolling interests from continuing operations	(89)				—	(89)
Income from continuing operations	\$ 2,183	\$ (11)	\$ 150		\$ 139	\$ 2,322
Diluted shares outstanding	545,170				545,170	545,170
Diluted EPS from continuing operations	\$ 4.00				\$ 0.25	\$ 4.25
SEGMENT SALES						
Americas	\$ 10,993	\$ (4)	\$ —		\$ (4)	\$ 10,989
EMEA	6,643				—	6,643
APAC	5,839	(60)			(60)	5,779
Engineering	2,799				—	2,799
Other	1,954	(1)			(1)	1,953
Segment sales	\$ 28,228	\$ (65)	\$ —		\$ (65)	\$ 28,163
SEGMENT OPERATING PROFIT						
Americas	\$ 2,578	\$ (1)	\$ —		\$ (1)	\$ 2,577
EMEA	1,367					1,367
APAC	1,198	(14)			(14)	1,184
Engineering	390					390
Other	(245)	(1)			(1)	(246)
Segment operating profit	5,288	(16)	—		(16)	5,272
Cost reduction programs and other charges	(567)				—	(567)
Net gain on sale of businesses	164				—	164
Purchase accounting impacts - Linde AG	(1,952)				—	(1,952)
Total operating profit	\$ 2,933	\$ (16)	\$ —		\$ (16)	\$ 2,917

2019 Pro forma adjustments

- (a) To eliminate the results of Praxair's merger-related divestitures.
- (b) To eliminate the impact of the inventory step-up recorded in purchase accounting for the merger. This item is nonrecurring in nature, directly attributable to the merger and occurred within one year of the transaction.
- (c) To eliminate the transaction costs and other charges related to the merger. These transaction costs are nonrecurring, directly attributable to the merger, and incremental. See Note 5 to the consolidated financial statements.
- (d) To eliminate the gain on merger related divestitures.
- (e) To eliminate pension settlement charges related to the merger.
- (f) To eliminate the income tax impacts of Other adjustments.

YEAR TO DATE DECEMBER 31, 2018 PRO FORMA INCOME STATEMENT INFORMATION
(Millions of dollars, except per share data)
(UNAUDITED)

	Pro forma Adjustments						Pro Forma Linde plc
	Linde plc (a)	Linde AG (b)	Divestitures (c)	Purchase Accounting (d)	Other	Total	
Sales	\$ 14,836	\$ 16,929	\$ (3,598)	\$ —	\$ (83)	(e) \$ 13,248	\$ 28,084
Cost of sales, exclusive of depreciation	9,020	10,515	(2,155)	—	(451)	(e) 7,909	16,929
Selling, general and administrative	1,629	2,370	(364)	—	—	2,006	3,635
As a % of Sales	11.0%						12.9%
Depreciation and amortization	1,830	1,570	(337)	1,861	—	3,094	4,924
Research and development	113	88	—	—	—	88	201
Cost reduction programs and other charges	309	323	—	—	(576)	(f) (253)	56
Other income (expense) - net	3,312	204	—	—	(3,294)	(j) (3,090)	222
Operating profit	5,247	2,267	(742)	(1,861)	(2,350)	(2,686)	2,561
Operating margin	35.4%						9.1%
Net pension and OPEB cost (benefit), excluding service costs	(4)	(159)	(2)	—	—	(161)	(165)
Interest expense - net	202	332	(72)	(83)	—	177	379
Income taxes	817	634	(87)	(430)	(264)	(g) (147)	670
Effective Tax Rate	16.2%						28.5%
Income from equity investments	56	80	(31)	(53)	—	(4)	52
Noncontrolling interests from continuing operations	(15)	(144)	19	140	—	15	—
Income from continuing operations	\$ 4,273	\$ 1,396	\$ (593)	\$ (1,261)	\$ (2,086)	\$ (2,544)	\$ 1,729
Diluted shares outstanding	334,127					221,024 (h)	555,151
Diluted EPS from continuing operations	\$ 12.79					\$ (9.68) (h)	\$ 3.11
SEGMENT SALES							
Americas	\$ 8,017	\$ 4,352	\$ (1,768)		\$ (62)	(e) \$ 2,522	\$ 10,539
EMEA	2,644	5,809	(1,463)		1 (e)	4,347	6,991
APAC	2,446	3,851	(329)		(18) (e)	3,504	5,950
Engineering	459	2,333	—		— (e)	2,333	2,792
Other	1,270	584	(38)		(4) (e)	542	1,812
Segment sales	\$ 14,836	\$ 16,929	\$ (3,598)	\$ —	\$ (83)	\$ 13,248	\$ 28,084
SEGMENT OPERATING PROFIT							
Americas	\$ 2,053	\$ 714	\$ (327)		\$ (7) (i)	\$ 380	\$ 2,433
EMEA	481	1,230	(324)		(43) (i)	863	1,344
APAC	465	686	(82)		(40) (i)	564	1,029
Engineering	14	276	—		(5) (i)	271	285
Other	(37)	(316)	(9)		67 (i)	(258)	(295)
Segment operating profit	2,976	2,590	(742)		(28)	1,820	4,796
Cost reduction programs and other charges	(309)	(323)			632	309	—
Gain on sale of businesses	3,294				(3,294)	(3,294)	—
Purchase accounting impacts - Linde AG	(714)				714	714	—
Total operating profit	\$ 5,247	\$ 2,267	\$ (742)		\$ (1,976)	\$ (451)	\$ 4,796

2018 Pro forma adjustments

- (a) To include Linde plc consolidated results for the year ended December 31, 2018. Note that the results include the performance of Praxair's European industrial gases business through December 3, 2018 and the results of Linde AG from October 31, 2018 (merger date) through December 31, 2018. The adjustments reflect reclassifications to conform to Linde plc's reporting format.
- (b) To include Linde AG consolidated results for the period prior to the merger date at October 31, 2018. The adjustments reflect reclassifications to conform to Linde plc's reporting format and adjustments from IFRS to U.S. GAAP.
- (c) To eliminate the results of merger-related divestitures required by regulatory authorities to secure approval for the Merger. These divestitures include the majority of Praxair's European industrial gases business (completed December 3, 2018), a significant portion of Linde AG's America's industrial gases business (completed on March 1, 2019), select assets of Linde AG's South Korean industrial gases business (completed April 30, 2019), as well as certain divestitures of other Praxair and Linde AG businesses in Asia.
- (d) To include purchase accounting adjustments for the period from January 1, 2018 to October 30, 2018 (prior to the Merger). This relates to (i) additional depreciation and amortization related to the increased value of property, plant and equipment and increased basis of intangible assets, (ii) interest expense impacts related to the fair value of debt, (iii) the tax impacts related to the non-GAAP adjustments above, (iv) income from equity investments equity related to the fair value of equity investments, and (v) noncontrolling interests adjustments related to the fair value adjustments above. Purchase accounting impacts are not included in the definition of segment operating profit; therefore, no pro forma adjustment is required for segment reporting.
- (e) To eliminate sales between Praxair and Linde AG for the period prior to the Merger date at October 31, 2018 (January 1, 2018 to October 30, 2018). (e) also includes a \$368 million impact for the fair value step-up of inventories acquired in the merger. This charge is recorded in cost of sales and subsequently eliminated.
- (f) To eliminate the transaction costs and other charges related to the Merger.
- (g) To reflect the income tax impact of the above pro forma adjustments.
- (h) To reflect the impact on diluted shares outstanding and diluted EPS related to ordinary shares issues to Linde AG shareholders in connection with the Merger.
- (i) To eliminate other (income) charges not included in segment operating profit, primarily related to a gain on a sale of business in EMEA and a gain on a sale of asset in APAC.
- (j) To eliminate the gain on merger related divestitures.

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 the Selected Financial Data (Item 6) or this MD&A.

Adjusted Amounts

Certain amounts for 2019, 2018, and 2017 have been included for reference purposes and to facilitate the calculations contained herein.

(Dollar amounts in millions, except per share data)

Year Ended December 31,**Adjusted Pro Forma Operating Profit and Margin**

	2019	2018	2017
Reported operating profit	\$ 2,933	\$ 5,247	\$ 2,444
Pro forma adjustments (a)	22	(2,686)	N/A
Pro forma	2,955	2,561	N/A
Non-GAAP Adjustments:			
Add: Cost reduction programs and other charges	377	53	52
Less: Net gain on sale of businesses	—	(51)	—
Add: Purchase accounting impacts - Linde AG (d)	1,940	2,233	—
Total adjustments	2,317	2,235	52
Adjusted pro forma operating profit	\$ 5,272	\$ 4,796	N/A

Adjusted operating profit			<u>\$ 2,496</u>
Reported percent change	(44.1)%	114.7%	
Adjusted pro forma percent change	9.9 %	N/A	
Reported sales	\$ 28,228	\$ 14,836	\$ 11,358
Pro forma sales (a)	28,163	28,084	N/A
Reported operating margin	10.4 %	35.4%	21.5%
Pro forma operating margin	10.5 %	9.1%	N/A
Adjusted pro forma operating margin	18.7 %	17.1%	N/A
Adjusted Pro Forma Depreciation and amortization			
Reported depreciation and amortization	\$ 4,675	\$ 1,830	\$ 1,184
Pro forma adjustments (a)	—	3,094	N/A
Pro forma	4,675	4,924	N/A
Non-GAAP Adjustments:			
Less: Purchase accounting impacts - Linde AG (d)	(1,940)	(2,233)	—
Adjusted pro forma depreciation and amortization	<u>\$ 2,735</u>	<u>\$ 2,691</u>	<u>N/A</u>
Adjusted depreciation and amortization			<u>\$ 1,184</u>
Adjusted Pro Forma Net pension and OPEB cost (benefit), excluding service cost			
Reported net pension and OPEB cost (benefit), excluding service cost	\$ (32)	\$ (4)	\$ (4)
Pro forma adjustments (a)	(97)	(161)	N/A
Pro forma	(129)	(165)	N/A
Non-GAAP Adjustments:			
Add: Pension plan reorganization charge - net	(10)	(14)	(2)
Total adjustments	(10)	(14)	(2)
Adjusted pro forma Net Pension and OPEB cost (benefit), excluding service costs	<u>\$ (139)</u>	<u>\$ (179)</u>	<u>N/A</u>
Adjusted Net Pension and OPEB cost (benefit), excluding service costs			<u>\$ (6)</u>
Adjusted Pro Forma Interest Expense - Net			
Reported interest expense - net	\$ 38	\$ 202	\$ 161
Pro forma adjustments (a)	—	177	N/A
Pro forma	38	379	N/A
Non-GAAP Adjustments:			
Less: Bond redemption	—	(26)	—
Less: Loss on hedge portfolio unwind	—	(174)	—
Add: Purchase accounting impacts - Linde AG (d)	96	100	—
Total adjustments	96	(100)	—
Adjusted pro forma interest expense - net	<u>\$ 134</u>	<u>\$ 279</u>	<u>N/A</u>
Adjusted interest expense - net			<u>\$ 161</u>
Adjusted Pro Forma Income Taxes(b)			
Reported income taxes	\$ 769	\$ 817	\$ 1,026
Pro forma adjustments (a)	(20)	(147)	N/A
Pro forma	749	670	N/A
Non-GAAP Adjustments:			

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Add: Bond redemption	—	6	—
Add: Pension settlement charge	—	3	1
Add: Purchase accounting impacts - Linde AG (d)	447	516	—
Add: Cost reduction programs and other charges	71	(1)	4
Add: Tax reform	—	17	(394)
Total adjustments	518	541	(389)
Adjusted pro forma income taxes	\$ 1,267	\$ 1,211	N/A
Adjusted income taxes			\$ 637
Adjusted Pro Forma Effective Tax Rate (b)			
Reported income before income taxes and equity investments	\$ 2,927	\$ 5,049	\$ 2,287
Pro forma adjustments (a)	119	(2,702)	N/A
Pro forma	3,046	2,347	N/A
Non-GAAP Adjustments:			
Add: Bond redemption	—	26	—
Add: Pension settlement charge	—	14	2
Add: Purchase accounting impacts - Linde AG (d)	1,844	2,133	—
Add: Cost reduction programs and other charges	377	53	52
Add: Pension plan reorganization charge - net	10	—	—
Add: Loss on hedge portfolio unwind	—	174	—
Less: Net gain on sale of businesses	—	(51)	—
Total adjustments	2,231	2,349	54
Adjusted pro forma income before income taxes and equity investments	\$ 5,277	\$ 4,696	N/A
Adjusted income before income taxes and equity investments			\$ 2,341
Reported income taxes	\$ 769	\$ 817	\$ 1,026
Reported effective tax rate	26.3 %	16.2%	44.9%
Adjusted pro forma income taxes	\$ 1,267	\$ 1,211	N/A
Adjusted income taxes			\$ 637
Adjusted pro forma effective tax rate	24.0 %	25.8%	N/A
Adjusted effective tax rate			27.2%
Income from Equity Investments			
Reported income from equity investments	\$ 114	\$ 56	\$ 47
Pro forma adjustments (a)	—	(4)	N/A
Pro forma	114	52	N/A
Non-GAAP Adjustments:			
Add: Purchase accounting impacts - Linde AG (d)	57	64	—
Total adjustments	57	64	—
Adjusted pro forma income from equity investments	\$ 171	\$ 116	N/A
Adjusted income from equity investments			\$ 47
Adjusted Noncontrolling Interests from Continuing Operations			
Reported noncontrolling interests from continuing operations	\$ (89)	\$ (15)	\$ (61)
Pro forma adjustments (a)	—	15	N/A
Pro forma	(89)	—	N/A
Non-GAAP adjustments:			
Add: Cost reduction programs and other charges	(35)	—	—

Add: Purchase accounting impacts - Linde AG (d)	(54)	(168)	—
Total adjustments	(89)	(168)	—
Adjusted pro forma noncontrolling interests from continuing operations	\$ (178)	\$ (168)	N/A
Adjusted noncontrolling interests from continuing			\$ (61)
Adjusted Income from Continuing Operations (c)			
Reported income from continuing operations	\$ 2,183	\$ 4,273	\$ 1,247
Pro forma adjustments (a)	139	(2,544)	N/A
Pro forma	2,322	1,729	N/A
Non-GAAP adjustments:			
Add: Pension settlement charge	—	11	1
Add: Cost reduction programs and other charges	281	53	48
Less: Net gain on sale of business	—	(50)	—
Add: Bond Redemption	—	20	—
Add: Loss on hedge portfolio unwind	—	174	—
Less: Other tax charges	—	(17)	394
Add: Purchase accounting impacts - Linde AG	1,400	1,513	—
Total adjustments	1,681	1,704	443
Adjusted pro forma income from continuing operations	\$ 4,003	\$ 3,433	N/A
Adjusted income from continuing operations			\$ 1,690
Adjusted Pro Forma Diluted EPS from Continuing Operations (c)			
Reported diluted EPS from continuing operations	\$ 4.00	\$ 12.79	\$ 4.32
Pro forma adjustments (a)	0.25	(9.68)	N/A
Pro forma	4.25	3.11	N/A
Non-GAAP adjustments:			
Add: Pension settlement charge	—	0.03	—
Add: Cost reduction programs and other charges	0.52	0.09	0.17
Less: Net gain on sale of business	—	(0.09)	—
Add: Bond redemption	—	0.04	—
Add: Loss on hedge portfolio unwind	—	0.31	—
Less: Income tax reform	—	(0.03)	1.36
Add: Purchase accounting impacts - Linde AG	2.57	2.73	—
Total adjustments	3.09	3.08	1.53
Adjusted pro forma diluted EPS from continuing operations	\$ 7.34	\$ 6.19	N/A
Adjusted diluted EPS from continuing operations			\$ 5.85
Adjusted Pro Forma EBITDA and % of Sales			
Income from continuing operations	\$ 2,183	\$ 4,273	\$ 1,247
Add: Noncontrolling interests related to continuing operations	89	15	61
Add: Net pension and OPEB cost (benefit), excluding service cost	(32)	(4)	(4)
Add: Interest expense	38	202	161
Add: Income taxes	769	817	1,026
Add: Depreciation and amortization	4,675	1,830	1,184
EBITDA from continuing operations	7,722	7,133	3,675
Pro forma adjustments (a)			
Add: Linde AG consolidated results	—	3,917	N/A
Add: Purchase accounting impacts - Linde AG	12	315	N/A

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Add: Cost reduction programs and other charges	190	576	N/A
Less: Net gain on sale of businesses	(164)	(3,294)	N/A
Less: Divestitures	(16)	(1,110)	N/A
Pro forma adjustments	22	404	N/A
Pro forma EBITDA from continuing operations	7,744	7,537	N/A
Non-GAAP adjustments:			
Less: Net gain on sale of business	—	(51)	—
Add: Cost reduction programs and other charges	377	53	52
Add: Purchase accounting impacts - Linde AG	57	64	—
Total adjustments	434	66	52
Adjusted pro forma EBITDA from continuing operations	\$ 8,178	\$ 7,603	N/A
Adjusted EBITDA from continuing operations			\$ 3,727
Reported sales	\$ 28,228	\$ 14,836	\$ 11,358
Pro forma sales	\$ 28,163	\$ 28,084	N/A
% of sales			
EBITDA from continuing operations	27.4 %	48.1%	32.4%
Pro forma EBITDA from continuing operations	27.5 %	26.8%	N/A
Adjusted pro forma EBITDA from continuing operations	29.0 %	27.1%	N/A
Adjusted EBITDA from continuing operations			32.8%

(a) See pro forma Income Statement Information in the preceding sections.

(b) 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.

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

(d) 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 year ended December 31, 2019 include (i) a \$12 million adjustment for the increase in cost of sales related to the fair value step up of inventories acquired in the merger (included as a pro forma adjustment), and (ii) \$1,940 in depreciation and amortization related to the fair value step up of fixed assets and intangible assets (primarily customer related) acquired in the merger.

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.

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.

	December 31, 2019	December 31, 2018
<i>(Millions of dollars)</i>		
Debt	\$ 13,956	\$ 15,296
Less: cash and cash equivalents	(2,700)	(4,466)
Net debt	11,256	10,830
Less: purchase accounting impacts - Linde AG	(195)	(291)
Adjusted net debt	\$ 11,061	\$ 10,539

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 Notes 2 and 14 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, 2019. 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, 2019, Linde had debt totaling \$13,956 million (\$15,296 million at December 31, 2018). 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, 2019, including the impact of derivatives, Linde had fixed-rate debt of \$10,799 million and floating-rate debt of \$3,157 million, representing 77% and 23%, respectively, of total debt. At December 31, 2018, Linde had fixed-rate debt of \$12,565 million and floating-rate debt of \$2,731 million, representing 82% and 18%, 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, 2019, Linde had fixed-to-floating interest rate swaps outstanding that were designated as hedging instruments of the underlying debt issuances - refer to Note 14 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 \$473 million (\$594 million in 2018). A one hundred basis point increase in interest rates would result in an approximate \$73 million increase to derivative assets recorded.

Variable Rate Debt

At December 31, 2019, 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 \$48 million (\$24 million in 2018).

Foreign Currency Risk

Linde's exchange-rate exposures result primarily from its investments and ongoing operations in Latin America (primarily Brazil, Chile and Colombia), Europe (primarily Germany, Scandinavia, and the United Kingdom), Canada, Mexico, Asia Pacific (primarily Australia, 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, 2019, Linde had a notional amount outstanding of \$9,713 million (\$9,412 million at December 31, 2018) 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 14 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, 2019 would increase by approximately \$194 million and at December 31, 2018 would decrease by approximately \$307 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 accountants 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, 2019.

Linde's evaluation of internal control over financial reporting as of December 31, 2019 did not include the internal control over financial reporting related to Linde AG which was acquired by Praxair in a merger accounted for as a business combination. In connection with its antitrust review of the transaction, the U.S. Federal Trade Commission (the "FTC") imposed a Hold Separate Order (the "HSO") on Linde that was lifted on March 1, 2019 after all required asset divestitures in the U.S. were completed. The HSO required the companies to continue to operate globally as separate and independent companies apart from each other in all material respects. As such, the HSO regulatory restrictions prohibited Linde from being able to perform procedures necessary to complete an overall assessment of Linde AG's disparate internal control environment with operations in over 100 countries. Because of this, the assessment of Linde AG's internal control environment could only begin after the HSO was terminated on March 1, 2019, and as such Linde AG has been excluded from the overall Linde internal control assessment as of December 31, 2019.

Total assets and sales for Linde AG represent approximately 23% and 62%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2019.

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, 2019 as stated in their report.

/s/ STEPHEN F. ANGEL

Stephen F. Angel
Chief Executive Officer

/s/ MATTHEW J. WHITE

Matthew J. White
Chief Financial Officer

/s/ KELCEY E. HOYT

Kelcey E. Hoyt
Chief Accounting Officer

March 2, 2020

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, 2019 and 2018, 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, 2019, 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, 2019, 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, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 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, 2019, 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 the accompanying Management’s Report on Internal Control Over Financial Reporting. 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.

As described in Management’s Report on Internal Control over Financial Reporting, management has excluded Linde Aktiengesellschaft (“Linde AG”) from its assessment of internal control over financial reporting as of December 31, 2019 because it was acquired in a merger accounted for as a business combination during 2018 and subject to a hold separate order issued by the U.S. Federal Trade Commission until March 2019. We have also excluded Linde AG from our audit of internal control over financial reporting. Linde AG is a wholly-owned subsidiary whose total assets and total sales excluded from management’s assessment and our audit of internal control over financial reporting represent approximately 23% and 62%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2019.

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

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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 Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate 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 matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Revenue Recognition - Estimated Costs at Completion

As described in Note 21 to the consolidated financial statements, \$2,799 million of the Company's total revenues for the year ended December 31, 2019 was generated from the sale of equipment contracts. Sale of equipment contracts are generally comprised of a single performance obligation. Revenue from 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 there was significant judgment by management when developing the estimated costs at completion for the sale of equipment contracts. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating audit evidence relating to the estimated costs at completion and management's significant assumptions, including the estimated expected material and labor costs. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures also included, among others, testing management's process for developing the estimated costs at completion for the sale of equipment contracts and evaluating the reasonableness of management's significant assumptions, including the estimated expected 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 management's estimates and assumptions relating to the expected material and labor costs.

Goodwill Impairment Assessment

As described in Notes 2 and 11 to the consolidated financial statements, the Company's consolidated goodwill balance was \$27,019 million as of December 31, 2019. Management performs an impairment test annually, 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 its carrying value. If it is determined that it is more likely than not that the fair value of a reporting unit is less than its carrying

value then management will estimate and compare the fair value of the reporting unit to its carrying value, including goodwill. In estimating the fair value of each reporting unit, management applied a multiple of earnings from a peer group to the Company's forecasted earnings for the year ending December 31, 2019. The peer group is comprised of comparable entities with similar operations and economic characteristics.

The principal considerations for our determination that performing procedures relating to the goodwill impairment assessment is a critical audit matter are there was significant judgment by management when developing the fair value measurement of the reporting units. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating audit evidence relating to management's significant assumptions for the multiples of earnings from a peer group of comparable entities with similar operations and economic characteristics. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

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 management's goodwill impairment assessment, including controls over the valuation of the Company's reporting units. These procedures also included, among others, i) testing management's process for developing the fair value measurement of the reporting units, ii) evaluating the appropriateness of the multiples of earnings model, (iii) testing the completeness, accuracy, and relevance of underlying data used in the model, and (iv) evaluating management's significant assumptions for the multiples of earnings from a peer group of comparable entities with similar operations and economic characteristics. Evaluating management's assumptions related to the multiples of earnings involved evaluating whether the assumptions used by management were reasonable considering (i) the consistency with external market and industry data and (ii) whether the assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's multiples of earnings model and significant assumptions for the multiples of earnings from a peer group of comparable entities with similar operations and economic characteristics.

/s/ PricewaterhouseCoopers LLP
Stamford, Connecticut
March 2, 2020

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,	2019	2018	2017
Sales	\$ 28,228	\$ 14,836	\$ 11,358
<i>Cost of sales, exclusive of depreciation and amortization</i>	16,644	9,020	6,382
<i>Selling, general and administrative</i>	3,457	1,629	1,207
<i>Depreciation and amortization</i>	4,675	1,830	1,184
<i>Research and development</i>	164	113	93
<i>Cost reduction programs and other charges</i>	567	309	52
<i>Net gain on sale of businesses</i>	164	3,294	—
<i>Other income (expenses) – net</i>	68	18	4
Operating Profit	2,933	5,247	2,444
<i>Interest expense – net</i>	38	202	161
<i>Net pension and OPEB cost (benefit), excluding service cost</i>	(32)	(4)	(4)
Income From Continuing Operations Before Income Taxes and Equity Investments	2,927	5,049	2,287
<i>Income taxes on continuing operations</i>	769	817	1,026
Income From Continuing Operations Before Equity Investments	2,158	4,232	1,261
<i>Income from equity investments</i>	114	56	47
Income From Continuing Operations (Including Noncontrolling Interests)	2,272	4,288	1,308
<i>Income from discontinued operations, net of tax</i>	109	117	—
Net Income (Including Noncontrolling Interests)	2,381	4,405	1,308
<i>Less: noncontrolling interests from continuing operations</i>	(89)	(15)	(61)
<i>Less: noncontrolling interests from discontinued operations</i>	(7)	(9)	—
Net Income – Linde plc	\$ 2,285	\$ 4,381	\$ 1,247
Net Income – Linde plc			
<i>Income from continuing operations</i>	\$ 2,183	\$ 4,273	\$ 1,247
<i>Income from discontinued operations</i>	\$ 102	\$ 108	\$ —
Per Share Data – Linde plc Shareholders			
<i>Basic earnings per share from continuing operations</i>	\$ 4.03	\$ 12.93	\$ 4.36
<i>Basic earnings per share from discontinued operations</i>	0.19	0.33	—
<i>Basic earnings per share</i>	<u>\$ 4.22</u>	<u>\$ 13.26</u>	<u>\$ 4.36</u>
<i>Diluted earnings per share from continuing operations</i>	\$ 4.00	\$ 12.79	\$ 4.32
<i>Diluted earnings per share from discontinued operations</i>	0.19	0.32	—
<i>Diluted earnings per share</i>	<u>\$ 4.19</u>	<u>\$ 13.11</u>	<u>\$ 4.32</u>
Weighted Average Shares Outstanding (000's):			
<i>Basic shares outstanding</i>	541,094	330,401	286,261
<i>Diluted shares outstanding</i>	545,170	334,127	289,114

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,	2019	2018	2017
NET INCOME (INCLUDING NONCONTROLLING INTERESTS)	\$ 2,381	\$ 4,405	\$ 1,308
OTHER COMPREHENSIVE INCOME (LOSS)			
Translation adjustments:			
Foreign currency translation adjustments	118	(401)	433
Reclassifications to net income (Note 4)	12	318	—
Income taxes	3	7	92
Translation adjustments	133	(76)	525
Funded status - retirement obligations (Note 18):			
Retirement program remeasurements	(852)	(260)	(39)
Reclassifications to net income	154	94	55
Income taxes	154	(55)	(5)
Funded status - retirement obligations	(544)	(221)	11
Derivative instruments (Note 14):			
Current year unrealized gain (loss)	(32)	—	—
Reclassifications to net income	—	(1)	—
Income taxes	7	—	—
Derivative instruments	(25)	(1)	—
Securities (Note 9):			
Current year unrealized gain (loss)	1	(1)	—
Reclassifications to net income	—	—	—
Income taxes	—	—	—
Securities	1	(1)	—
TOTAL OTHER COMPREHENSIVE INCOME (LOSS)	(435)	(299)	536
COMPREHENSIVE INCOME (INCLUDING NONCONTROLLING INTERESTS)	1,946	4,106	1,844
Less: noncontrolling interests	(19)	(83)	(95)
COMPREHENSIVE INCOME - LINDE PLC	\$ 1,927	\$ 4,023	\$ 1,749

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

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

December 31,	2019	2018
Assets		
Cash and cash equivalents	\$ 2,700	\$ 4,466
Accounts receivable – net	4,322	4,297
Contract assets	368	283
Inventories	1,697	1,651
Assets held for sale	125	5,498
Prepaid and other current assets	1,140	1,077
<i>Total Current Assets</i>	10,352	17,272
Property, plant and equipment – net	29,064	29,717
Equity investments	2,027	1,838
Goodwill	27,019	26,874
Other intangible assets – net	16,137	16,223
Other long-term assets	2,013	1,462
<i>Total Assets</i>	<u>\$ 86,612</u>	<u>\$ 93,386</u>
Liabilities and Equity		
Accounts payable	\$ 3,266	\$ 3,219
Short-term debt	1,732	1,485
Current portion of long-term debt	1,531	1,523
Contract liabilities	1,758	1,546
Accrued taxes	370	657
Liabilities of assets held for sale	2	768
Other current liabilities	3,501	3,758
<i>Total Current Liabilities</i>	12,160	12,956
Long-term debt	10,693	12,288
Other long-term liabilities	4,888	3,435
Deferred credits	7,236	7,611
<i>Total Liabilities</i>	34,977	36,290
Commitments and contingencies (Note 19)		
Redeemable noncontrolling interests	113	16
Linde plc Shareholders' Equity:		
Ordinary shares (€0.001 par value, authorized 1,750,000,000 shares, 2019 issued: 552,012,862 ordinary shares; 2018 issued: 551,310,272 ordinary shares)	1	1
Additional paid-in capital	40,201	40,151
Retained earnings	16,842	16,529
Accumulated other comprehensive income (loss)	(4,814)	(4,456)
Less: Treasury stock, at cost (2019 – 17,632,318 shares and 2018 – 4,068,642 shares)	(3,156)	(629)
Total Linde plc Shareholders' Equity	49,074	51,596
Noncontrolling interests	2,448	5,484
<i>Total Equity</i>	51,522	57,080
<i>Total Liabilities and Equity</i>	<u>\$ 86,612</u>	<u>\$ 93,386</u>

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

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

<u>Year Ended December 31,</u>	2019	2018	2017
Increase (Decrease) in Cash and Cash Equivalents			
Operations			
Net income – Linde plc	\$ 2,285	\$ 4,381	\$ 1,247
Less: income from discontinued operations, net of tax and noncontrolling interests	(102)	(108)	—
Add: Noncontrolling interests from continuing operations	89	15	61
Income from continuing operations (including noncontrolling interests)	\$ 2,272	\$ 4,288	\$ 1,308
Adjustments to reconcile net income to net cash provided by operating activities:			
Cost Reduction Programs and other charges, net of payments	(236)	40	26
Amortization of merger-related inventory step-up	12	368	—
Tax Act income tax charge, net	—	(61)	394
Depreciation and amortization	4,675	1,830	1,184
Deferred income taxes, excluding Tax Act	(303)	(187)	136
Share-based compensation	95	62	59
Net gain on sale of businesses, net of tax	(108)	(2,923)	—
Non-cash charges and other	(127)	175	43
Working capital			
Accounts receivable	80	(124)	(92)
Contract assets and liabilities, net	87	—	—
Inventory	(81)	(4)	(22)
Prepaid and other current assets	(72)	43	(66)
Payables and accruals	(174)	287	22
Pension contributions	(94)	(87)	(19)
Long-term assets, liabilities and other	93	(53)	68
Net cash provided by operating activities	6,119	3,654	3,041
Investing			
Capital expenditures	(3,682)	(1,883)	(1,311)
Acquisitions, net of cash acquired	(225)	(25)	(33)
Divestitures and asset sales, net of cash divested	5,096	5,908	30
Cash acquired in merger transaction	—	1,363	—
Net cash provided by (used for) investing activities	1,189	5,363	(1,314)
Financing			
Short-term debt borrowings (repayments) – net	224	208	(199)
Long-term debt borrowings	99	8	11
Long-term debt repayments	(1,583)	(3,124)	(583)
Issuances of ordinary shares	72	77	120
Purchases of ordinary shares	(2,658)	(599)	(12)
Cash dividends – Linde plc shareholders	(1,891)	(1,166)	(901)
Noncontrolling interest transactions and other	(3,260)	(402)	(92)
Net cash used for financing activities	(8,997)	(4,998)	(1,656)
Discontinued Operations			
Cash provided by operating activities	\$ 69	\$ 48	\$ —
Cash used for investing activities	(60)	(23)	—
Cash provided by financing activities	5	2	—
Net cash provided by discontinued operations	14	27	—
Effect of exchange rate changes on cash and cash equivalents	(77)	(60)	22
Change in cash and cash equivalents	(1,752)	3,986	93
Cash and cash equivalents, beginning-of-period	4,466	617	524
Cash and cash equivalents, including discontinued operations	\$ 2,714	\$ 4,603	\$ 617

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Cash and cash equivalents of discontinued operations

Cash and cash equivalents, end-of-period

	(14)	(137)	—
\$	2,700	\$ 4,466	\$ 617

Supplemental Data

Income taxes paid

\$ 1,357 \$ 757 \$ 565

Interest paid, net of capitalized interest (Note 9)

\$ 275 \$ 214 \$ 184

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)

Activity	Linde plc Shareholders' Equity									
	Ordinary shares		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss) (Note 9)	Treasury Stock		Linde plc Shareholders' Equity	Noncontrolling Interests	Total Equity
	Shares	Amounts				Shares	Amounts			
Balance, December 31, 2016	383,231	\$ 4	\$ 4,074	\$ 12,879	\$ (4,600)	98,330	\$ (7,336)	\$ 5,021	\$ 420	\$ 5,441
Net Income				1,247				1,247	59	1,306
Other comprehensive income (loss)					502			502	34	536
Noncontrolling interests:										
Dividends and other capital reductions								—	(35)	(35)
Additions (Reductions)								—	15	15
Redemption value adjustments (Note 16)				(1)				(1)		(1)
Dividends (\$3.15 per common share)				(901)				(901)		(901)
Issuances of common stock:										
For the dividend reinvestment and stock purchase plan						(50)	7	7		7
For employee savings and incentive plans			(49)			(1,835)	134	85		85
Purchases of common stock						9	(1)	(1)		(1)
Share-based compensation			59					59		59
Balance, December 31, 2017	383,231	\$ 4	\$ 4,084	\$ 13,224	\$ (4,098)	96,434	\$ (7,196)	\$ 6,018	\$ 493	\$ 6,511
Net Income				4,381				4,381	21	4,402
Other comprehensive income (loss)					(265)			(265)	59	(206)
Noncontrolling interests:										
Dividends and other capital reductions								—	(49)	(49)
Additions (Reductions)			(127)					(127)	(186)	(313)
Redemption value adjustments (Note 16)				(3)				(3)		(3)
Dividends (\$3.30 per common share)				(1,166)				(1,166)		(1,166)

Activity	Linde plc Shareholders' Equity								
	Ordinary shares		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss) (Note 9)	Treasury Stock		Linde plc Shareholders' Equity	Noncontrolling Interests
	Shares	Amounts				Shares	Amounts		
Issuances of common stock:									
For the dividend reinvestment and stock purchase plan						(31)	5	5	5
For employee savings and incentive plans	255	—	(46)			(1,109)	79	33	33
Purchases of common stock						4,079	(630)	(630)	(630)
Share-based compensation			62					62	62
Tax Act Reclassification (Note 7)				\$ 93	\$ (93)			\$ —	\$ —
Impact of merger (Notes 3 and 16)	167,824	\$ (3)	\$ 36,178			(95,324)	\$ 7,113	\$ 43,288	\$ 5,146
Balance, December 31, 2018	551,310	\$ 1	\$ 40,151	\$ 16,529	\$ (4,456)	4,069	\$ (629)	\$ 51,596	\$ 3,484
Net income available for Linde plc shareholders				2,285				2,285	94
Other comprehensive loss					(358)			(358)	(77)
Noncontrolling interests:									
Dividends and other capital reductions								—	(132)
Additions (Reductions) - (Note 16)								—	(2,921)
Redemption value adjustments (Note 16)				(8)				(8)	(8)
Dividends (\$3.50 per common share)				(1,891)				(1,891)	(1,891)
Issuances of ordinary shares:									
For the dividend reinvestment and stock purchase plan									
For employee savings and incentive plans	703	—	(45)	(73)		(770)	127	9	9
Purchases of ordinary shares						14,333	(2,654)	(2,654)	(2,654)
Share-based compensation			95					95	95
Balance, December 31, 2019	552,013	\$ 1	\$ 40,201	\$ 16,842	\$ (4,814)	17,632	\$ (3,156)	\$ 49,074	\$ 2,448

The accompanying Notes are an integral part of these financial statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS LINDE PLC AND SUBSIDIARIES

NOTE 1. FORMATION OF LINDE PLC AND BUSINESS COMBINATION OF PRAXAIR, INC. AND LINDE AG

Formation of Linde plc

Linde plc ("Linde" or "the company"), a public limited company incorporated in Ireland, was formed in accordance with the requirements of the business combination agreement, dated as of June 1, 2017, as amended (the "business combination agreement"). Pursuant to the business combination agreement, among other things, Praxair, Inc., a Delaware corporation ("Praxair"), and Linde Aktiengesellschaft, a stock corporation incorporated under the laws of Germany ("Linde AG"), agreed to combine their respective businesses through an all-stock transaction, and become subsidiaries of the company (collectively referred to as "business combination" or "merger"). On October 31, 2018, Linde completed the business combination. Prior to the business combination, the company did not conduct any business activities other than those required for its formation and matters contemplated by the business combination agreement.

Business Combination of Praxair, Inc. and Linde AG

The business combination has been accounted for using the acquisition method of accounting in accordance with the provisions of the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 805, "Business Combinations", with Praxair representing the accounting acquirer. Pursuant to Rule 12g-3(a) under the Exchange Act, as of October 31, 2018, the company became the successor issuer to Praxair. Also, the Linde shares are deemed to be registered under Section 12(b) of the Exchange Act, and the company is subject to the informational requirements of the Exchange Act and the rules and regulations promulgated thereunder. The Linde shares trade on the New York Stock Exchange ("NYSE") and the Frankfurt Stock Exchange under the ticker symbol "LIN". Prior to the business combination, the Praxair shares were registered pursuant to Section 12(b) of the Exchange Act and listed on the NYSE. In connection with the completion of the business combination, the Praxair shares were suspended from trading on the NYSE as of close of business (New York Time) on October 30, 2018. On November 1, 2018, Praxair filed a Form 25 to de-list and de-register its three series of Euro-denominated notes, including its 1.50% Notes due 2020, 1.20% Notes due 2024 and 1.625% Notes due 2025, that were listed on the NYSE. Trading of the Euro-denominated notes on the NYSE was suspended as of close of business (New York Time) on November 9, 2018, and Praxair filed a Form 15 with the SEC terminating the registration under the Exchange Act of its securities and suspending Praxair's reporting obligations under Section 15(d) of the Exchange Act.

In connection with the business combination, the company, Praxair and Linde AG entered into various agreements with regulatory authorities to satisfy anti-trust requirements to secure approval to consummate the business combination. These agreements included the sale of the majority of Praxair's European businesses (completed on December 3, 2018), the majority of Linde AG's Americas business (completed on March 1, 2019), select assets of Linde AG's South Korean industrial gases business (completed April 30, 2019), select assets of Praxair's Indian industrial gases business (completed July 12, 2019), select assets of Linde AG's Indian industrial gases business (completed December 16, 2019) as well as certain divestitures of other Praxair and Linde AG businesses in Asia that are currently expected to be sold in 2020 (collectively, the "merger-related divestitures"). See Note 4 for additional information relating to merger-related divestitures.

Additionally, to obtain merger approval in the United States Linde, Praxair and Linde AG entered into an agreement with the U.S. Federal Trade Commission ("FTC") dated October 1, 2018 ("hold separate order" or "HSO"). Under the HSO, the company, Praxair and Linde AG agreed to continue to operate Linde AG and Praxair as independent, ongoing, economically viable, competitive businesses held separate, distinct, and apart from each other's operations; and not coordinate any aspect of their operations until certain divestitures in the United States were completed. Accordingly, Linde had accounted for Linde AG as a separate segment for 2018 reporting purposes effective with the merger date. Prior to the merger date, the company's Linde AG segment did not exist. Since the FTC hold separate order restrictions were lifted effective March 1, 2019, the company subsequently implemented a new segment structure as follows: Americas, EMEA (Europe/Middle East/Africa), APAC (Asia/South Pacific) and Engineering. This new management organization structure was implemented during the first quarter 2019 and, accordingly, segment information has been retrospectively recast for all prior periods. Refer to Note 20 Segment Information for further details.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

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. Equity 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 ("LLC") 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 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, and high-performance surface coatings 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 – Effective January 1, 2018, Linde adopted the FASB's Accounting Standards Update No. 2014-09 ("ASC 606") relating to *Revenue Recognition*. 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. See Note 21 for additional details regarding Linde's revenue recognition policies. The adoption of ASC 606 resulted in no differences in revenue recognition compared to previous 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 interest as part of the cost of constructing major facilities (see Note 10). 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 10). 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 is 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 discounted 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 9).

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 anticipated net income and currency derivatives other than for firm commitments) are recorded at their fair market values and recognized in current earnings.

See Note 14 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 or more frequently if events or circumstances indicate that an impairment loss may have been incurred. During the fourth quarter of fiscal year 2019, the company changed the date of its annual goodwill impairment test from April 30 to October 1. The change was made to more closely align the impairment testing date with the company's planning process.

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. In estimating the fair value of each reporting unit, management applied a multiple of earnings from a peer group to the company's forecasted earnings for the year ending December 31, 2019. The peer group is comprised of comparable entities with similar operations and economic characteristics.

See Notes 3 and 11 for additional information relating to goodwill.

Other Intangible Assets – Other intangible assets, primarily customer relationships and brands/tradenames, 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 Notes 3 and 12 for additional information relating to other intangible assets.

Assets Held for Sale and Discontinued Operations – Assets held for sale, as well as liabilities directly related to these assets, are classified separately in the consolidated balance sheets as held for sale if the requirements of the FASB's Accounting Standards Codification ("ASC") 360, *Property, Plant and Equipment*, are satisfied. The main requirements of

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ASC 360 are: (i) management having the authority to approve the action has committed to a plan to sell the assets and an active program to locate a buyer has been initiated, (ii) the assets are available for sale in their present condition at a reasonable market price, and (iii) a sale within the next twelve months is probable. Assets classified as held for sale are measured at the lower of carrying amount and fair value less costs to sell. Amortization and depreciation has been discontinued. The process involved in determining the fair value less costs to sell involves estimates and assumptions that are subject to uncertainty.

Discontinued operations are reported as soon as a business is classified as held for sale, or has already been disposed of, and when the business to be disposed of represents a strategic shift that has (or will have) a major effect on the company's operations and financial results. Businesses acquired with the intent of divesting are also required to be reported as discontinued operations. The profit/loss from discontinued operations is reported separately from the expenses and income from continuing operations in the consolidated statements of income. In the consolidated statement of cash flows, the cash flows from discontinued operations are shown separately from the cash flows from continuing operations. The information provided in the Notes relates to continuing operations. If the information relates exclusively to discontinued operations, this is highlighted accordingly.

See Note 4 for additional information relating to assets held for sale and discontinued operations.

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 7 for additional information relating to income taxes, including the U.S. Tax Cuts and Jobs Act enacted in December 2017.

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 18 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 17 for additional disclosures relating to share-based compensation.

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

Segment Presentation Change - As a result of the merger and effective with the lifting of the hold separate order in March 2019, new reportable segments were implemented. The new segments are: Americas, EMEA (Europe/Middle East/Africa), APAC (Asia/South Pacific); and Engineering. All periods presented were recast to conform to the new segment structure. See Note 20.

Recently Issued Accounting Standards

Accounting Standards Implemented in 2019

- **Leases** – In February 2016, the FASB issued updated guidance on the accounting and financial statement presentation of leases. The new guidance requires lessees to recognize a right-of-use asset and lease liability for all leases, except those that meet certain scope exceptions, and requires expanded quantitative and qualitative disclosures. This guidance is effective beginning in 2019 and requires companies to transition using a modified retrospective approach. Linde has applied the practical expedient which allows prospective transition to the new lease accounting standard on January 1, 2019. The company elected the package of practical expedients relating to the reassessment of the lease portfolio pertaining to (i) whether expiring or existing contracts contain lease components, (ii) lease classification under ASC 842 and (iii) whether initial direct costs were capitalized under ASC 840. The company further implemented internal controls and key system functionality to enable the preparation of financial information on adoption.

The standard had an immaterial impact on our consolidated balance sheets and consolidated income statements. The most significant impact was the recognition of right of use ("ROU") assets and lease liabilities for operating leases, while the accounting for finance leases remained substantially unchanged. The company recognized both right of use assets and lease liabilities of \$1.2 billion upon adoption. The adoption of the new lease accounting standard had no impact on retained earnings (See Note 6).

- **Derivatives and Hedging** - In August 2017, the FASB issued updated guidance on accounting for hedging activities. The new guidance simplifies hedge effectiveness documentation requirements, changes both the designation and measurement for qualifying hedging relationships and the presentation of hedge results. This guidance was effective for the company beginning in the first quarter of 2019. The adoption of the standard had an immaterial impact on the consolidated financial statements.

Accounting Standards to be Implemented

- **Credit Losses on Financial Instruments** – In June 2016, the FASB issued an update on the measurement of credit losses. The guidance introduces a new accounting model for expected credit losses on financial instruments, including trade receivables, based on estimates of current expected credit losses. This guidance will be effective for the company beginning in the first quarter 2020 and requires companies to apply the change in accounting on a prospective basis. The company is currently evaluating the impact this update will have on the consolidated financial statements and does not expect this guidance to have a material impact.
- **Simplifying the Test for Goodwill Impairment** – In January 2017, the FASB issued updated guidance on the measurement of goodwill. The new guidance eliminates the requirement to calculate the implied fair value of goodwill to measure a goodwill impairment charge. The guidance will be effective for the company beginning in the first quarter 2020 with early adoption permitted. The company does not expect this guidance to have a material impact.
- **Fair Value Measurement Disclosures** - In August 2018, the FASB issued guidance that modifies the disclosure requirements for fair value measurements. The guidance is effective in fiscal year 2020, with early adoption permitted. Certain amendments must be applied prospectively while other amendments must be applied retrospectively. The company is evaluating the impact this guidance will have on the disclosures in the notes to the consolidated financial statements.
- **Retirement Benefit Disclosures** - In August 2018, the FASB issued guidance that modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement benefit plans. The guidance is effective in fiscal year 2021, with early adoption permitted, and must be applied on a retrospective basis. The company is evaluating the impact this guidance will have on the disclosures in the notes to the consolidated financial statements.

NOTE 3. BUSINESS COMBINATION

Merger of Praxair, Inc. and Linde AG

As described in Note 1, on October 31, 2018 Praxair and Linde AG combined their respective businesses through an all-stock transaction and became subsidiaries of the company.

In connection with the business combination, each share of common stock of Praxair par value \$0.01 per share, (excluding any shares held in treasury immediately prior to the effective time of the merger, which were automatically canceled and retired for no consideration) was converted into one ordinary share, par value €0.001 per share, of Linde plc. Additionally, each tendered share of common stock of Linde AG was converted into 1.54 ordinary shares of Linde plc.

As provided in the business combination agreement, at the effective time of the business combination outstanding Praxair stock options and other equity awards were generally converted into stock options and equity awards on a 1:1 basis with respect to Linde shares. Outstanding Linde AG share-based compensation awards were either settled in cash (for the portion vested), or were converted into similar stock options and equity awards with respect to Linde shares (for the portion unvested), after giving effect to the 1.54 exchange ratio. See Notes 16 and 17 for additional information.

Allocation of Purchase Price

In accordance with the FASB's ASC 805, "Business Combinations", Praxair was determined to be the accounting acquirer. As such, the company has applied the acquisition method of accounting with respect to the identifiable assets and liabilities of Linde AG, which have been measured at fair value as of the date of the business combination.

In accordance with the business combination agreement, Linde AG shareholders that accepted the exchange offer received Linde shares in exchange for Linde AG shares at an exchange ratio of 1.54 Linde shares for each Linde AG share. Because Praxair is the accounting acquirer, the fair value of the equity issued by Linde plc to Linde AG shareholders in the exchange transaction was determined by reference to the market price of Praxair shares. Accordingly, the purchase consideration below reflects the estimated fair value of the 92% of Linde AG shares tendered and Linde shares issued in exchange for those Linde AG shares, which is based on the final closing price of Praxair shares prior to the effective time of the merger on October 31, 2018 of \$164.50 per share.

The purchase price and fair value of Linde AG's net assets acquired as of the merger date on October 31, 2018 is presented as follows:

(in thousands, except value per share data, Linde AG exchange ratio, and purchase price)

Linde AG common stock tendered as of October 31, 2018 (i)	170,875 Shares
Business combination agreement exchange ratio (ii)	1.54 : 1
Linde plc ordinary shares issued in exchange for Linde AG	263,148
Per share price of Praxair, Inc. common stock (iii)	\$164.50
Purchase price (millions of dollars)	\$43,288

- (i) Number of Linde AG shares tendered in the 2017 Exchange Offer.
- (ii) Exchange ratio for Linde AG shares as set forth in the business combination agreement.
- (iii) Closing price of Praxair shares on the New York Stock Exchange prior to the effective time of the business combination on October 31, 2018.

In accordance with ASC 805, Linde AG's assets and liabilities were measured at fair value at October 31, 2018, primarily using Level 3 inputs except debt which was Level 1. Fair value represents management's best estimate of assumptions about future events and uncertainties, including significant judgments related to future cash flows (sales, costs, customer attrition rates, and contributory asset charges), discount rates, competitive trends, market comparables, and others. Inputs used were generally obtained from historical data supplemented by current and anticipated market conditions and growth rates.

For the year ended December 31, 2019, Linde made measurement period adjustments to reflect facts and circumstances in existence as of the effective date of the Merger. The more significant measurement period adjustments made reflect: the agreed upon sale price of Linde AG's Korean business resulting in an increase to assets held for sale and corresponding decrease to goodwill of \$344 million; an adjustment to the sale value of the Linde AG Americas businesses resulting in a decrease to assets held for sale and corresponding increase to goodwill of \$211 million; refinement in the

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valuation of other intangible assets resulting in an increase to intangible asset values and corresponding decrease to goodwill of \$657 million; refinement in the valuation of property, plant and equipment resulting in a decrease to property, plant and equipment and corresponding increase to goodwill of \$407 million; an increase to deferred income taxes with a corresponding increase to goodwill of \$276 million; and an increase to the fair value of noncontrolling interest with a corresponding increase to goodwill of \$222 million. The net impact of these and other less significant adjustments made during the twelve month period resulted in a net increase of \$110 million to goodwill. The valuation process to determine the fair values is complete. The following table summarizes the final allocation of purchase price to the identifiable assets acquired and liabilities assumed by Linde, with the excess of the purchase price over the fair value of Linde AG's net assets recorded as goodwill.

<u>Millions of dollars</u>	<u>Fair Value</u>
Assets	
Cash and cash equivalents	\$ 1,360
Accounts receivable – net	2,857
Inventories	1,439
Assets held for sale	5,375
Prepaid and other current assets	1,251
Property, plant and equipment	18,974
Equity investments	1,521
Goodwill	24,256
Other intangible assets	16,250
Other long-term assets	805
<i>Total Assets Acquired</i>	<u>\$ 74,088</u>
Less: Liabilities Assumed	
Accounts payable	\$ 3,360
Short-term debt	1,177
Current portion of long-term debt	1,864
Accrued taxes	159
Liabilities of assets held for sale	676
Other current liabilities	3,058
Long-term debt	6,295
Other long-term liabilities	2,009
Deferred credits, including deferred income taxes	6,834
<i>Total Liabilities Assumed</i>	<u>\$ 25,432</u>
Less: Redeemable noncontrolling interests	92
Less: Noncontrolling interests	5,276
Purchase Price (i)	<u><u>\$ 43,288</u></u>

(i) See above for the calculation of the purchase price.

Summary of Significant Fair Value Methods

The methods used to determine the fair value of significant identifiable assets and liabilities included in the allocation of purchase price are discussed below.

Inventories

Acquired inventory is comprised of finished goods, work in process and raw materials. The fair value of finished goods was calculated as the estimated selling price, adjusted for costs of the selling effort and a reasonable profit allowance relating to the selling effort. The fair value of work in process inventory was primarily calculated as the estimated selling price, adjusted for estimated costs to complete the manufacturing, estimated costs of the selling effort, as well as a reasonable profit

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margin on the remaining manufacturing and selling effort. The fair value of raw materials and supplies was determined based on replacement cost which approximates historical carrying value. The fair value step-up of inventories is being recognized in "Cost of sales" as the inventory is sold.

Assets held for sale and Liabilities of assets held for sale

As described in Note 1, as a condition of the European Commission ("EC"), the U.S. Department of Justice ("DOJ"), and other governmental regulatory authorities approval of the merger, Linde plc, Praxair and Linde AG were required to divest various businesses in Europe, the Americas and Asia. The fair value of these businesses has been determined based on the estimated net selling prices or sales agreements. See Note 4 for further information on merger-related divestitures.

Property, Plant and Equipment

The fair value of property, plant and equipment was primarily calculated using replacement costs adjusted for the age and condition of the asset, and is summarized below:

Property, plant and equipment ("PP&E")	(in millions)
Production plants	\$ 10,358
Storage tanks	1,807
Transportation equipment and other	543
Cylinders	2,487
Buildings	1,953
Land and improvements	677
Construction in progress	1,149
Fair value of PP&E	<u>\$ 18,974</u>

Identifiable Intangible Assets

The fair value of identifiable intangible assets is summarized below:

	Weighted Average Amortization Period (in years)	(in millions)
Identifiable intangible assets		
Customer relationships	29	\$ 12,550
Linde brand	Indefinite	1,868
Brands/Tradenames	28	845
Other intangibles	18	987
Fair value of identifiable intangible assets	28	<u>\$ 16,250</u>

The fair value for all other identifiable intangible assets is based on assumptions that market participants would use in pricing an asset, based on the most advantageous market for the asset (i.e., its highest and best use).

The fair value of the customer relationships intangible asset was valued using a multi-period excess earnings method, a form of the income approach, which incorporates the estimated future cash flows to be generated from Linde AG's existing customer base. Excess earnings are the earnings remaining after deducting the market rates of return on the estimated values of contributory assets, including debt-free net working capital, tangible assets, and other identifiable intangible assets. The excess earnings are thereby calculated for each year of multi-year projection periods and discounted to present value.

Other intangibles primarily includes acquired technology. Linde brand, brands/tradenames and other intangibles were valued using the relief from royalty method under the income approach; this method estimates the cost savings generated by a company related to the ownership of an asset for which it would otherwise have had to pay royalties or license fees on revenues earned through the use of the asset and discounted to present value.

Pension and Other Postretirement Liabilities

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Linde recognized a pretax net liability representing the unfunded portion of Linde AG's defined-benefit pension and other postretirement benefit ("OPEB") plans. Refer to Note 18 for further information on pensions and OPEB arrangements.

Long-Term Debt

The fair value for long-term debt was primarily obtained from third party quotes, as the majority of the Linde AG bond portfolio is publicly traded.

Deferred Income Tax Assets and Liabilities

The deferred income tax assets and liabilities include the expected future federal, state and foreign tax consequences associated with temporary differences between the preliminary fair values of the assets acquired and liabilities assumed and the respective tax bases. Tax rates utilized in calculating deferred income taxes generally represent the enacted statutory tax rates at the effective date of the merger in the jurisdictions in which legal title of the underlying asset or liability resides.

Refer to Note 7 for further information related to income taxes.

Noncontrolling Interests

Noncontrolling interests include the fair value of noncontrolling interests of Linde AG, including approximately \$3.2 billion relating to the 8% of Linde AG shares which were not tendered in the Exchange Offer and were the subject of a cash-merger squeeze-out. The company's wholly-owned indirect subsidiary, Linde Intermediate Holding AG ("Linde Holding"), which directly owns the 92% of Linde AG shares acquired in the Exchange Offer, determined the adequate cash compensation to be paid to the 8% remaining Linde AG minority shareholders in exchange for the transfer of their Linde AG shares for each Linde AG share. The cash-merger squeeze-out was approved by the shareholders of Linde AG at an extraordinary shareholders meeting of Linde AG on December 12, 2018 and completed on April 8, 2019. The remaining noncontrolling interests relate to the fair value of historic noncontrolling interests of Linde AG and its subsidiaries.

Equity Investments

The fair value of equity investments was determined using a discounted cash flow approach.

Other Assets Acquired and Liabilities Assumed (excluding Goodwill)

Linde utilized the carrying values, net of allowances, to value accounts and notes receivable and accounts payable as well as other current assets and liabilities as it was determined that carrying values represented the fair value of those items at the merger date.

Goodwill

The excess of the consideration for the merger over the preliminary fair value of net assets acquired was recorded as goodwill. The merger resulted in the recognition of \$24,256 million of goodwill, which is not deductible for tax purposes. The goodwill balance is primarily attributed to the assembled workforce, expanded market opportunities and cost and other operating synergies anticipated upon the integration of the operations of Praxair and Linde AG.

Results of Linde AG Operations in 2018

The results of operations of Linde AG have been included in the company's consolidated statements of income since the merger. The following table provides Linde AG "Sales" and "Income (loss) from continuing operations" included in the company's results for the period November 1 through December 31, 2018.

<i>Millions of dollars</i>	
Linde AG Results of Operations	November 1, - December 31, 2018
Sales	\$ 2,873
Income (loss) from continuing operations*	\$ (385)

* Includes net charges of \$451 million related to the impacts of purchase accounting.

Unaudited Pro Forma Information - 2018 and 2017

Linde's unaudited pro forma results presented below were prepared pursuant to the requirements of ASC 805 and give effect to the merger as if it had been consummated on January 1, 2017. The pro forma results have been prepared for comparative purposes only, and do not necessarily represent what the revenue or results of operations would have been had the merger been completed on January 1, 2017. In addition, these results are not intended to be a projection of future operating results and do not reflect synergies that might be achieved.

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The unaudited pro forma results include adjustments for the preliminary purchase accounting impact (including, but not limited to, depreciation and amortization associated with the acquired tangible and intangible assets, amortization of the fair value adjustment to investment in nonconsolidated affiliates, and reduction of interest expense related to the fair value adjustment to long-term debt along with the related tax and non-controlling interest impacts), the alignment of accounting policies, adjustments due to IFRS compliant reporting conversion to U.S. GAAP and the elimination of transactions between Praxair and Linde AG.

The unaudited pro forma results for all periods presented below exclude the results of operations of the Linde AG merger-related divestitures (See Note 4) as these divestitures are reflected as discontinued operations. The Praxair merger-related divestitures (See Note 4) are included in the results from continuing operations, including the results from Praxair's European business through the disposition date of December 3, 2018, in the unaudited pro forma results presented below, for all periods presented, as these divestitures do not qualify for discontinued operations.

The unaudited pro forma results are summarized below:

<u>Millions of dollars</u>		<u>2018</u>		<u>2017</u>
Sales (a)	\$	29,774	\$	28,449
Income from continuing operations	\$	4,739	\$	871

(a) Includes sales from Praxair's merger-related divestitures of \$1,625 million and \$1,553 million for the years ended December 31, 2018 and 2017, respectively.

Significant nonrecurring amounts reflected in the pro forma results are as follows:

A \$3,294 million gain (\$2,923 million after tax) was recorded in the fourth quarter 2018 as a result of the divestiture of Praxair's European industrial gases business and is included in the December 31, 2018 pro forma income from continuing operations.

From January 1, 2017 through December 31, 2018, Praxair, Inc. and Linde AG collectively incurred pre-tax costs of \$736 million (\$680 million after tax) to prepare for and close the merger. These merger costs were reflected within the results of operations in the pro forma results as if they were incurred on January 1, 2017. Any costs incurred related to merger-related divestitures and integration and to prepare for the intended business separations were reflected in the pro forma results in the period in which they were incurred.

The company incurred pre-tax charges of \$368 million (\$279 million after tax) and \$10 million (\$8 million after tax) in 2018 related to the fair value step-up of inventories acquired and sold as well as a pension settlement due to the payout to certain participants as a result of change in control provisions within a U.S. nonqualified pension plan, respectively. The 2018 pro forma results were adjusted to exclude these charges. The pro forma results for 2017 were adjusted to include these charges, as well as charges incurred subsequent to December 31, 2018 but less than a year from the date of the merger of \$13 million (\$10 million after tax) related to the remaining fair value step-up of inventories to be sold and \$51 million (\$40 million after tax) related to an additional pension settlement within the U.S. nonqualified pension plan that occurred in the first quarter of 2019 upon payment. See Note 18 for further information relating to the U.S. nonqualified pension plan settlements.

2019 & 2018 Non-Merger Related Acquisitions

Non-merger related acquisitions of \$225 million during the year ended December 31, 2019 and \$25 million during the year ended December 31, 2018, largely in the Americas, are not material, individually or in the aggregate.

2017 Acquisitions

During the year ended December 31, 2017, Linde had acquisitions totaling \$33 million, primarily acquisitions of packaged gas businesses and a carbon dioxide joint venture in North America.

NOTE 4. MERGER-RELATED DIVESTITURES, DISCONTINUED OPERATIONS AND NET ASSETS HELD FOR SALE

As described in Note 1, as a condition of the European Commission ("EC"), the U.S. Department of Justice ("DOJ"), and other governmental regulatory authorities approval of the merger, Linde plc, Praxair and Linde AG were required to divest the following businesses:

Praxair Merger-Related Divestitures - Primarily European Industrial Gases Business

As a condition of the EC regulatory approval of the merger transaction, Praxair agreed to sell the majority of its industrial gases business in Europe. The sale was completed on December 3, 2018.

- The Società Italiana Acetilene e Derivati S.p.A. ("SIAD") Sale and Purchase Agreement dated December 5, 2017 whereby Praxair agreed, *inter alia*, to sell its 34% non-controlling participation in its Italian joint venture SIAD to its joint venture partner Flow Fin in exchange for Flow Fin's 40% non-controlling participation in Praxair's majority-owned Italian joint venture, Rivoira S.p.A., and cash payment of a net purchase price of €90 million (\$102 million as of October 31, 2018) by Praxair to Flow Fin. This transaction was completed on October 31, 2018, and;
- The Praxair Europe Sale and Purchase Agreement dated July 5, 2018 pursuant to which Praxair sold the majority of its European businesses to Taiyo Nippon Sanso Corporation for €5,000 million in cash consideration (\$5,700 million at December 3, 2018), reduced by estimated normal closing adjustments of €86 million (\$96 million). These transactions were completed on December 3, 2018.

In connection with these transactions, in 2018 the company recognized a net pre-tax gain of \$3,294 million (\$2,923 million after tax) in the consolidated statements of income and related to the EMEA segment.

The net carrying value of Praxair's European business assets and liabilities divested on December 3, 2018 is presented below:

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<i>Millions of dollars</i>		Carrying Value
Assets		
Cash and cash equivalents	\$	38
Accounts receivable – net		311
Inventories		67
Prepaid and other current assets		22
Property, plant and equipment – net		1,342
Equity investments		234
Goodwill		620
Other intangible assets – net		115
Other long-term assets		36
Total Assets Divested	\$	2,785
Liabilities		
Accounts payable	\$	215
Accrued taxes		27
Other current liabilities		111
Long-term debt		2
Other long-term liabilities		92
Deferred credits		174
Total Liabilities Divested	\$	621
Noncontrolling interests	\$	200
Accumulated other comprehensive income (loss)		
Pension/OPEB funded status obligation, net of taxes		(8)
Cumulative translation adjustment, net of taxes		(318)
Net Assets Divested	\$	2,290

Additionally, to satisfy regulatory requirements in other jurisdictions, Praxair agreed to sell certain operations in Chile, China, India and South Korea. The Chilean business was sold as part of the Linde AG Americas SPA (as defined below), the select Indian assets were sold in July 2019, and other sales are expected in 2020. Effective October 22, 2018, the date of final regulatory approvals, these businesses have been accounted for as assets held for sale on the consolidated balance sheets. These businesses were evaluated for discontinued operations accounting treatment under U.S. GAAP and it was determined that they did not meet the definition of a discontinued operation as these transactions did not represent a strategic shift with a major effect, after considering the impact of the merger.

The sale of the select Indian assets was completed on July 12, 2019 with a sale price of \$218 million and resulted in a gain of \$164 million recognized in "Net gain on sale of businesses" in the consolidated statements of income.

Linde AG Merger-Related Divestitures - Primarily Americas Industrial Gases Business

As a condition of the U.S. regulatory approval of the merger, Linde AG agreed to sell the majority of its industrial gases business in the Americas, as described below:

- The Linde AG Americas Sales and Purchase Agreement, dated July 16, 2018, as and further amended on September 22, 2018, October 19, 2018, and February 20, 2019 whereby Linde AG and Praxair, Inc. entered into an agreement with a consortium comprising companies of the German industrial gases manufacturer Messer Group and CVC Capital Partners Fund VII to sell the majority of Linde AG's industrial gases business in North America and certain industrial gases business activities of Linde AG's in South America for \$2.9 billion in cash consideration after purchase price adjustments for certain items relating to assets and liabilities of the sold businesses. In addition, divestitures include \$0.5 billion of proceeds for incremental plant sales within the Americas under other agreements. These transactions were completed on March 1, 2019.

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- On April 30, 2019, Linde completed the sale of select assets of Linde Korea to IMM Private Equity Inc., to satisfy requirements of the Korea Fair Trade Commission. The assets divested include bulk and on-site business in Giheung, Pohang and Seosansites as well as oxygen and nitrogen on site generators. The sale price of \$1.2 billion is subject to customary adjustments.
- On December 16, 2019, Linde completed the sale of select assets of Linde India with a sale price of \$193 million.

The net carrying value of Linde AG's Americas business assets and liabilities divested on March 1, 2019 is presented below:

<u>Millions of dollars</u>	<u>Carrying Value</u>
Assets	
Cash and cash equivalents	\$ 200
Accounts receivable – net	479
Inventories	181
Prepaid and other current assets	409
Property, plant and equipment – net	1,590
Equity investments	37
Goodwill	3
Other intangible assets – net	10
Other long-term assets	76
Asset adjustments for estimated fair value	1,650
<i>Total Assets Divested</i>	<u>\$ 4,635</u>
Liabilities	
Accounts payable	\$ 94
Accrued taxes	60
Other current liabilities	767
Long-term debt	2
Other long-term liabilities	98
Deferred credits	177
<i>Total Liabilities Divested</i>	<u>\$ 1,198</u>
Cumulative translation adjustment, net of taxes	12
Net Assets Divested	<u>\$ 3,449</u>

The net carrying value of Linde AG's South Korean business assets and liabilities divested on April 30, 2019 is presented below:

<i>Millions of dollars</i>	Carrying Value
Assets	
Accounts receivable – net	\$ 27
Inventories	16
Property, plant and equipment – net	389
Asset adjustments for estimated fair value	879
Total Assets Divested	\$ 1,311
Liabilities	
Accounts payable	\$ 2
Accrued taxes	12
Other current liabilities	29
Long-term debt	6
Other long-term liabilities	3
Deferred credits	31
Total Liabilities Divested	\$ 83
Net Assets Divested	\$ 1,228

Discontinued Operations

Only the sales of the Linde AG merger-related divestitures meet the criteria for discontinued operations, Praxair merger-related divestitures do not qualify as discontinued operations. As such, operations related to the Linde AG merger-related divestitures are included within Income from discontinued operations, net of tax for periods subsequent to the merger, as summarized below:

<i>Millions of dollars</i>	2019	November 1, - December 31, 2018
Net sales	\$ 449	\$ 388
Cost of sales	251	173
Other operating costs	43	90
Operating profit	\$ 155	\$ 125
Income from equity investments	8	1
Income taxes	54	9
Income from discontinued operations, net of tax	\$ 109	\$ 117
Noncontrolling interests	(7)	(9)
Income from discontinued operations, net of tax and noncontrolling interests	\$ 102	\$ 108

For the year ended December 31, 2019 and 2018 there were no material amounts of capital expenditures or significant operating or investing non-cash items related to discontinued operations.

Net Assets Held for Sale

Net assets held for sale includes both the Linde AG merger-related divestitures that meet the criteria for discontinued operations and the Praxair merger-related divestitures that do not. As of December 31, 2019 and 2018, the following assets and liabilities are reported as components of the net assets held for sale in the consolidated balance sheets:

<i>Millions of dollars</i>	December 31, 2019	December 31, 2018
Assets		
Cash and cash equivalents	\$ 4	\$ 182
Accounts receivable – net	2	297
Inventories	—	209
Prepaid and other current assets	—	54
Property, plant and equipment – net	1	2,005
Other Assets	43	187
Asset adjustments for estimated fair value (Note 3)	75	2,564
<i>Total Assets Classified as Assets Held for Sale</i>	\$ 125	\$ 5,498
Liabilities		
Accounts payable	2	125
Deferred credits	—	206
Other liabilities	—	437
<i>Total Liabilities Classified as Assets Held for Sale</i>	2	768
Net Assets Classified as Held for Sale	\$ 123	\$ 4,730

NOTE 5. COST REDUCTION PROGRAMS AND OTHER CHARGES

2019 Charges

Cost reduction programs and other charges were \$567 million for the year ended December 31, 2019 (\$444 million, after-tax and noncontrolling interests). The following is a summary of the pre-tax charges by reportable segment for the year ended December 31, 2019.

	Year Ended December 31, 2019			
<i>(millions of dollars)</i>	Severance costs	Other cost reduction charges	Total cost reduction program related charges	Transaction related and other charges
Americas	\$ 36	\$ 20	56	34
EMEA	105	16	121	21
APAC	40	10	50	72
Engineering	1	12	13	(9)
Other	22	42	64	145
Total	\$ 204	\$ 100	\$ 304	\$ 263

Cost Reduction Programs

Total cost reduction program related charges were \$304 million for the year ended December 31, 2019 (\$233 million after-tax).

Severance costs

Severance costs of \$204 million for the year ended December 31, 2019 are for the elimination of approximately 2,400 positions, largely in EMEA, APAC, and the Americas, of which approximately 1,500 have terminated employment at December 31, 2019. The majority of these actions are anticipated to be completed within the next 12 months.

Other cost reduction charges

Other cost reduction charges of \$100 million for the year ended December 31, 2019 are primarily charges related to the execution of the company's synergistic actions including location consolidations and business rationalization projects, software and process harmonization, and associated non-recurring costs.

Transaction Related and Other Charges

On October 31, 2018, Praxair and Linde AG combined under Linde plc, as contemplated by the business combination agreement (see Note 1). Linde incurred merger-related costs and other charges which totaled \$263 million (\$211 million, after tax and noncontrolling interests) for the year ended December 31, 2019. 2019 includes other charges for an asset impairment related to a joint venture in APAC of approximately \$73 million (\$42 million, after tax and noncontrolling interests) resulting from an unfavorable arbitration ruling.

Cash Requirements

The total cash requirements of the cost reduction program and other charges during the twelve months ended December 31, 2019 are estimated to be approximately \$460 million, of which \$260 million was paid through December 31, 2019. Total cost reduction programs and other charges, net of payments in the consolidated statements of cash flows for the twelve months ended December 31, 2019 also reflects the impact of cash payments of liabilities, included merger-related tax liabilities, accrued as of December 31, 2018.

The following table summarizes the activities related to the company's cost reduction related charges for the twelve months ended December 31, 2019:

(millions of dollars)

2019 Cost Reduction Programs and Other Charges

	Severance costs	Other cost reduction charges	Total cost reduction program related charges	Transaction related and other charges	Total
2019 Cost Reduction Programs and Other Charges	\$ 204	\$ 100	\$ 304	\$ 263	\$ 567
Less: Cash payments	(91)	(57)	(148)	(112)	(260)
Less: Non-cash charges	—	(21)	(21)	(78)	(99)
Foreign currency translation and other	4	(6)	(2)	(6)	(8)
Balance, December 31, 2019	\$ 117	\$ 16	\$ 133	\$ 67	\$ 200

2018 Charges

Cost reduction programs and other charges were \$309 million for the year ended December 31, 2018 (\$306 million, after-tax and non-controlling interest).

Transaction Related and Other Charges

On October 31, 2018, Praxair and Linde AG combined under Linde plc, as contemplated by the business combination agreement (see Note 1). In connection with the business combination, Linde incurred transaction costs which totaled \$236 million for the year ended December 31, 2018 (\$236 million after-tax).

Also included in Cost Reduction Programs and Other Charges are other charges of \$73 million for the year ended December 31, 2018 (\$70 million after-tax) comprised of the following: (i) a \$40 million charge (\$40 million after-tax) related to an unfavorable development related to a supplier contract in China, (ii) restructuring charges of \$21 million (\$18 million after-tax) and (iii) a \$12 million charge (\$12 million after-tax) associated with the transition to hyper-inflationary accounting in Argentina.

2017 Charges

Transaction Related and Other Charges

In connection with the intended business combination, Linde incurred transaction costs which totaled \$52 million for the year ended December 31, 2017 (\$48 million after-tax).

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 primarily as short-term liabilities. 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 20 - 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 6. 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, 2019 was \$364 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, 2019 was \$31 million, and the costs are included in depreciation and amortization and interest. Related assets and obligations are included in property, plant and equipment - net and debt, 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, 2019 was \$341 million. Cash flows used for finance leases for the same period were immaterial.

Supplemental balance sheet information related to leases is as follows:

<i>(Millions of dollars)</i>	December 31, 2019
<u>Operating Leases</u>	
Operating lease right-of-use assets	1,025
Other current liabilities	260
Other long-term liabilities	716
Total operating lease liabilities	976
<u>Finance Leases</u>	
Finance lease right-of-use assets	140
Current portion of long-term debt	32
Long Term debt	117
Total finance lease liabilities	149

Supplemental operating lease information:

	December 31, 2019
Weighted average lease term (years)	7
Weighted average discount rate	2.97%

Future operating and finance lease payments as of December 31, 2019 are as follows (millions of dollars):

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	Period	Operating Leases	Financing Leases
	2020	\$ 275	\$ 38
	2021	208	31
	2022	163	27
	2023	110	18
	2024	75	10
Thereafter		251	81
Total future undiscounted lease payments		1,082	205
Less imputed interest		(106)	(56)
Total reported lease liability		<u>\$ 976</u>	<u>\$ 149</u>

Prior to the adoption of the new lease accounting standard, operating and finance lease commitments on an undiscounted basis were approximately \$1.3 billion and \$104 million, respectively, at December 31, 2018 under long-term non-cancelable leases. The amounts payable for operating leases were as follows:

(Millions of dollars)	Operating Leases
2019	\$ 305
2020	236
2021	186
2022	145
2023	102
Thereafter	326
Total	<u>\$ 1,300</u>

In limited instances Linde acts as a lessor, primarily for assets to provide industrial gas to specific customers. These leases are not significant to the consolidated balance sheets or consolidated statements of income.

NOTE 7. INCOME TAXES

The year ended December 31, 2019 reflects a full year of Linde plc; the year ended December 31, 2018 reflects Praxair for the entire year and Linde AG for the period beginning October 31, 2018 (the merger date), including the impacts of purchase accounting. The amounts for historical periods prior to 2018 solely reflect the results of Praxair. (See Notes 1 and 3.)

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

(Millions of dollars) Year Ended December 31,	2019	2018	2017
United States	\$ 1,161	\$ 931	\$ 1,003
Foreign (a)	1,766	4,118	1,284
Total income before income taxes	<u>\$ 2,927</u>	<u>\$ 5,049</u>	<u>\$ 2,287</u>

(a) 2019 includes a \$164 million gain related to the Indian divestiture and 2018 includes a \$3,294 million gain related to Europe divestiture (See Note 4).

Provision for Income Taxes

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

(Millions of dollars)
Year Ended December 31,

Current tax expense (benefit)

	2019 (a)	2018 (b)	2017 (c)
U.S. federal	\$ 64	\$ 390	\$ 565
State and local	39	(7)	84
Foreign	969	620	374
	<u>1,072</u>	<u>1,003</u>	<u>1,023</u>

Deferred tax expense (benefit)

U.S. federal	85	8	(221)
State and local	—	15	19
Foreign	(388)	(209)	205
	<u>(303)</u>	<u>(186)</u>	<u>3</u>

Total income taxes

	<u>\$ 769</u>	<u>\$ 817</u>	<u>\$ 1,026</u>
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- (a) 2019 includes \$70 million related to divestitures, foreign current tax expense of \$48 million and foreign deferred tax expense of \$22 million
- (b) 2018 includes a benefit of \$61 million related to the Tax Act (See below) and a charge of \$371 million (\$252 million U.S., \$4 million state, \$114 million foreign current tax expense and \$1 million of U.S. deferred income tax expense) related to divestitures (See Note 4).
- (c) 2017 includes a charge of \$394 million related to the Tax Act (See below).

U.S. Tax Cuts and Jobs Act (Tax Act) 2018 and 2017

On December 22, 2017 the U.S. government enacted the Tax Cuts and Jobs Act ("Tax Act"). This comprehensive tax legislation significantly revised the U.S. corporate income tax rules by, among other things, lowering the corporate income tax rate from 35% to 21%, implementing a territorial tax system and imposing a one-time tax on accumulated earnings of foreign subsidiaries. The company recorded a net provisional income tax charge of \$394 million comprising (i) an estimated \$467 million U.S. Federal and state tax charge for deemed repatriation of accumulated foreign earnings; (ii) an estimated \$260 million charge for foreign withholding taxes related to anticipated future repatriation of foreign earnings; and (iii) an estimated \$333 million deferred tax benefit for the revaluation of net deferred tax liabilities from 35% to the new 21% tax rate. The \$467 million U.S. federal and state tax charge for deemed repatriation of accumulated foreign earnings includes \$422 million of deemed repatriation tax payable over eight years.

In the fourth quarter of 2018, the company completed its accounting and updated its provisional estimates in accordance with SAB 118 resulting in a net reduction to tax expense of \$61 million, \$41 million U.S. federal and \$20 million of state income tax (net of federal tax benefit). This resulted in a deemed repatriation tax payable of \$261 million and \$291 million and is payable over the remaining six and seven years, respectively of which \$235 million and \$265 million is classified as of December 31, 2019 and December 31, 2018 as other long-term liabilities on the consolidated balance sheets (See Note 9).

Further, the Tax Act enacted new provisions related to the taxation of foreign earnings, known as GILTI. The company has elected as an accounting policy to account for GILTI as period costs when incurred.

Additionally, in the fourth quarter of 2018 the company adopted Accounting Standards Update 2018-02, "Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income", electing to reclassify the income tax effects of the Tax Act from Accumulated Other Comprehensive Income ("AOCI") to retained earnings. This resulted in a net reduction to AOCI and a net increase to retained earnings of \$93 million, \$98 million directly related to the federal income tax rate change reduced by \$5 million indirectly related to the federal tax rate change on state income taxes.

Effective Tax Rate Reconciliation

For purposes of the effective tax rate reconciliation, the company utilized the U.S. statutory income tax rate of 21% in 2019 and 2018 and 35% in 2017. 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:

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(Dollar amounts in millions)
Year Ended December 31,

	2019		2018		2017	
U.S. statutory income tax	\$	615	21.0 %	\$	1,060	21.0 %
State and local taxes – net of federal benefit		31	1.1 %		30	0.6 %
U.S. tax credits and deductions (a)		(31)	(1.1)%		(12)	(0.2)%
Foreign tax differentials (b)		113	3.9 %		57	1.1 %
Share-Based compensation		(41)	(1.4)%		(22)	(0.4)%
Tax Act		—	— %		(61)	(1.2)%
Divestitures (c)		36	1.2 %		(321)	(6.4)%
Other – net (d)		46	1.6 %		86	1.7 %
Provision for income taxes	\$	769	26.3 %	\$	817	16.2 %
	\$			\$	1,026	44.9 %

- (a) U.S. tax credits and deductions relate to foreign derived intangible income in 2019 and 2018, the research and experimentation tax credit in 2019, 2018 and 2017 and manufacturing deduction in 2017.
- (b) Primarily related to differences between the U.S. tax rate (21% in 2019 and 2018 and 35% in 2017) and the statutory tax rate in the countries where the company operates. Other permanent items and tax rate changes were not significant.
- (c) Divestitures primarily relate to the sale of the company's Indian business in 2019 and European business in 2018 (See Note 4).
- (d) Other - net includes \$26 million and \$34 million of U.S tax related to GILTI in 2019 and 2018, respectively and an increase in unrecognized tax benefits in Europe of \$44 million in 2018.

Net Deferred Tax Liabilities

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

(Millions of dollars)
December 31,

Deferred tax liabilities

	2019	2018
Fixed assets	\$ 3,539	\$ 3,935
Goodwill	145	124
Other intangible assets	3,688	3,684
Subsidiary/equity investments	664	570
Other (a)	789	648
	\$ 8,825	\$ 8,961

Deferred tax assets

Carryforwards	\$ 441	\$ 526
Benefit plans and related (b)	721	575
Inventory	72	63
Accruals and other (c)	1,167	1,112
	\$ 2,401	\$ 2,276

Less: Valuation allowances (d)

	(222)	(237)
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Net deferred tax liabilities

Recorded in the consolidated balance sheets as (Note 9):

Other long-term assets	243	510
Deferred credits	6,889	7,432
	\$ 6,646	\$ 6,922

- (a) Includes \$255 million in 2019 related to right-of-use lease assets.
- (b) Includes deferred taxes of \$446 million and \$292 million in 2019 and 2018, respectively, related to pension / OPEB funded status (See Notes 9 and 18).
- (c) Includes \$255 million related to lease liabilities in 2019 and \$81 million and \$104 million in 2019 and 2018, respectively, related to research and development costs.
- (d) Summary of valuation allowances relating to deferred tax assets follows (millions of dollars):

	2019	2018	2017
Balance, January 1,	\$ (237)	\$ (76)	\$ (132)
Income tax (charge) benefit (i)	(31)	(51)	59
Merger with Linde AG	18	(121)	—
Other, including write-offs (ii)	26	7	—
Translation adjustments	2	4	(3)
Balance, December 31,	\$ (222)	\$ (237)	\$ (76)

- (i) 2017 includes a \$59 million benefit related to the utilization of foreign tax credits under the Tax Act.
- (ii) 2019 includes \$26 million related to the squeeze out of Linde AG (See Note 3).

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.

At December 31, 2019, the company had \$441 million of deferred tax assets relating to net operating losses ("NOLs") and tax credits and \$222 million of valuation allowances. These deferred tax assets include \$312 million relating to NOLs of which \$55 million expire within 5 years, \$115 million expire after 5 years and \$142 million have no expiration. The deferred tax assets also include \$129 million related to credits of which \$6 million expire within 5 years, \$113 million expire after 5 years, and \$10 million have no expiration. The valuation allowances of \$222 million primarily relate to NOLs and are required because management has determined, based on financial projections and available tax strategies, that it is unlikely that the NOLs will be utilized before they expire. If events or circumstances change, valuation allowances are adjusted at that time resulting in an income tax benefit or charge.

The company has \$664 million of foreign income taxes accrued related to its investments in subsidiaries and equity investments as of December 31, 2019. A provision has not been made for any additional foreign income tax at December 31, 2019 on approximately \$31 billion related to its investments in subsidiaries because the company intends to remain indefinitely reinvested. While the \$31 billion could become subject to additional foreign 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 \$472 million, \$319 million and \$54 million as of December 31, 2019, 2018 and 2017, 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:

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(Millions of dollars)

	2019	2018	2017
Unrecognized income tax benefits, January 1	\$ 319	\$ 54	\$ 56
Additions for tax positions of prior years (a)	151	104	48
Reductions for tax positions of prior years	(3)	(7)	(26)
Additions for current year tax positions (b)	33	179	—
Reductions for settlements with taxing authorities (c)	(26)	(3)	(26)
Foreign currency translation and other	(2)	(8)	2
Unrecognized income tax benefits, December 31	\$ 472	\$ 319	\$ 54

- (a) Increase primarily relates to tax positions in the United States and Europe, \$66 million in 2019 related to the merger with Linde AG.
- (b) 2018 includes \$167 million related to the merger with Linde AG.
- (c) 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 expense of \$1 million, \$32 million and \$8 million for the years ended December 31, 2019, December 31, 2018 and December 31, 2017, respectively. The company had \$65 million and \$48 million of accrued interest and penalties as of December 31, 2019 and December 31, 2018, respectively which were recorded in other long-term liabilities in the consolidated balance sheets (See Note 9).

As of December 31, 2019, the company remained subject to examination in the following major tax jurisdictions for the tax years as indicated below:

<u>Major tax jurisdictions</u>	<u>Open Years</u>
North and South America	
United States	2016 through 2019
Canada	2012 through 2019
Mexico	2013 through 2019
Brazil	2005 through 2019
Europe and Africa	
France	2014 through 2019
Germany	2015 through 2019
Netherlands	2015 through 2019
Republic of South Africa	2015 through 2019
Spain	2006 through 2019
United Kingdom	2015 through 2019
Asia and Australia	
Australia	2014 through 2019
China	2014 through 2019
India	2006 through 2019
Korea	2014 through 2019
Taiwan	2015 through 2019

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 8. 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:

	2019	2018	2017
Numerator (Millions of dollars)			
Income From Continuing Operations	\$ 2,183	\$ 4,273	\$ 1,247
Income from discontinued operations, net of tax	102	108	—
Net Income – Linde plc	<u>\$ 2,285</u>	<u>\$ 4,381</u>	<u>\$ 1,247</u>
Denominator (Thousands of shares)			
Weighted average shares outstanding	540,859	330,088	285,893
Shares earned and issuable under compensation plans	235	313	300
Weighted average shares used in basic earnings per share *	<u>541,094</u>	<u>330,401</u>	<u>286,261</u>
Effect of dilutive securities			
Stock options and awards	4,076	3,726	2,853
Weighted average shares used in diluted earnings per share *	<u>545,170</u>	<u>334,127</u>	<u>289,114</u>
Basic earnings per share from continuing operations	\$ 4.03	\$ 12.93	\$ 4.36
Basic earnings per share from discontinued operations	\$ 0.19	\$ 0.33	\$ —
Basic Earnings Per Share	<u>\$ 4.22</u>	<u>\$ 13.26</u>	<u>\$ 4.36</u>
Diluted earnings per share from continuing operations	\$ 4.00	\$ 12.79	\$ 4.32
Diluted earnings per share from discontinued operations	\$ 0.19	\$ 0.32	\$ —
Diluted Earnings Per Share	<u>\$ 4.19</u>	<u>\$ 13.11</u>	<u>\$ 4.32</u>

* As a result of the merger, share amounts for the year ended December 31, 2018 reflect a weighted average effect of Praxair shares outstanding prior to October 31, 2018 and Linde plc shares outstanding on and after October 31, 2018.

There were no antidilutive shares for the years ended December 31, 2019, 2018 or 2017.

NOTE 9. SUPPLEMENTAL INFORMATION

The year ended December 31, 2018 reflects Praxair for the entire year and the Linde AG for the period beginning after October 31, 2018 (the merger date), including the impacts of purchase accounting. The amounts for historical periods prior to 2018 solely reflect the results of Praxair. See Notes 1 and 3.

Income Statement

(Millions of dollars)

Year Ended December 31,

Selling, General and Administrative

	2019	2018	2017
Selling	\$ 1,600	\$ 757	\$ 511
General and administrative	1,857	872	696
	<u>\$ 3,457</u>	<u>\$ 1,629</u>	<u>\$ 1,207</u>

Year Ended December 31,

Depreciation and Amortization (a)

	2019	2018	2017
Depreciation	\$ 3,940	\$ 1,615	\$ 1,093
Amortization of intangibles (Note 12)	735	215	91
Depreciation and Amortization	<u>\$ 4,675</u>	<u>\$ 1,830</u>	<u>\$ 1,184</u>

Year Ended December 31,

Other Income (Expenses) – Net

	2019	2018	2017
Currency related net gains (losses)	\$ (11)	\$ 4	\$ (3)
Partnership income	8	8	6
Severance expense	(7)	(7)	(6)
Asset divestiture gains (losses) – net	10	6	4
Other – net	68	7	3
	<u>\$ 68</u>	<u>\$ 18</u>	<u>\$ 4</u>

Year Ended December 31,

Interest Expense – Net

2019	2018	2017
------	------	------

Interest incurred on debt	\$ 284	\$ 297	\$ 230
Interest income	(112)	(80)	(41)
Amortization on acquired debt	(96)	(21)	—
Interest capitalized	(38)	(20)	(28)
Bond redemption (b)	—	26	—
	<u>\$ 38</u>	<u>\$ 202</u>	<u>\$ 161</u>

Year Ended December 31,

Income Attributable to Noncontrolling Interests

	2019	2018	2017
Noncontrolling interests' operations (c)	\$ 87	\$ 12	\$ 59
Redeemable noncontrolling interests' operations (Note 16)	2	3	2
Noncontrolling interests from continuing operations	<u>\$ 89</u>	<u>\$ 15</u>	<u>\$ 61</u>
Noncontrolling interests from discontinued operations	<u>\$ 7</u>	<u>\$ 9</u>	<u>\$ —</u>

Balance Sheet

(Millions of dollars)
December 31,

Accounts Receivable

	2019	2018
Trade and Other receivables	\$ 4,628	\$ 4,410
Less: allowance for doubtful accounts (d)	(306)	(113)
	<u>\$ 4,322</u>	<u>\$ 4,297</u>

December 31,

Inventories

	2019	2018
Raw materials and supplies	\$ 396	\$ 339
Work in process	331	321
Finished goods	970	991
	<u>\$ 1,697</u>	<u>\$ 1,651</u>

December 31,

Prepaid and Other Current Assets

Prepaid and other deferred charges (e)
VAT recoverable
Unrealized gains on derivatives (Note 14)
Other

2019	2018
\$ 516	\$ 533
275	250
85	66
264	228
<u>\$ 1,140</u>	<u>\$ 1,077</u>

December 31,

Other Long-term Assets

Pension assets (Note 18)
Insurance contracts (f)
Long-term receivables, net (g)
Operating lease assets (Note 6)
Deposits
Investments carried at cost
Deferred charges
Deferred income taxes (Note 7)
Unrealized gains on derivatives (Note 14)
Other

2019	2018
\$ 78	\$ 140
75	75
150	135
1,025	—
56	61
40	76
90	148
243	510
82	127
174	190
<u>\$ 2,013</u>	<u>\$ 1,462</u>

December 31,

Other Current Liabilities

Accrued expenses
Payroll
VAT payable
Pension and postretirement (Note 18)
Interest payable
Operating lease liability (Note 6)
Employee benefit accrual
Insurance reserves
Unrealized losses on derivatives (Note 14)
Other

2019	2018
\$ 1,079	\$ 1,187
619	658
268	235
27	117
127	137
260	—
88	104
38	36
54	36
941	1,248
<u>\$ 3,501</u>	<u>\$ 3,758</u>

<u>December 31,</u>	<u>2019</u>	<u>2018</u>
Other Long-term Liabilities		
Pension and postretirement (Note 18)	\$ 2,548	\$ 2,004
Tax liabilities for uncertain tax positions	342	191
Tax Act liabilities for deemed repatriation (Note 7)	235	265
Operating lease liability (Note 6)	716	—
Interest and penalties for uncertain tax positions (Note 7)	65	48
Insurance reserves	28	24
Asset retirement obligation	293	300
Unrealized losses on derivatives (Note 14)	45	43
Other	616	560
	<u>\$ 4,888</u>	<u>\$ 3,435</u>

<u>December 31,</u>	<u>2019</u>	<u>2018</u>
Deferred Credits		
Deferred income taxes (Note 7)	\$ 6,889	\$ 7,432
Other	347	179
	<u>\$ 7,236</u>	<u>\$ 7,611</u>

<u>December 31,</u>	<u>2019</u>	<u>2018</u>
Accumulated Other Comprehensive Income (Loss)		
Cumulative translation adjustment - net of taxes:		
Americas (h)	\$ (3,357)	\$ (3,375)
EMEA (h)	(136)	105
APAC (h)	(140)	(114)
Engineering	(29)	40
Other	282	(246)
	<u>(3,380)</u>	<u>(3,590)</u>
Derivatives – net of taxes	(27)	(2)
Unrealized gain (loss) on securities	—	(1)
Pension/OPEB funded status obligation (net of \$446 million and \$292 million tax benefit in 2019 and 2018) (Note 18)	(1,407)	(863)
	<u>\$ (4,814)</u>	<u>\$ (4,456)</u>

- (a) Depreciation and amortization expense in 2019 include \$1,298 million and \$642 million, respectively, of Linde AG purchase accounting impacts. In 2018, depreciation and amortization expense include \$225 million and \$121 million, respectively, of Linde AG purchase accounting impacts.
- (b) In December 2018, Linde repaid \$600 million of 4.50% notes due 2019 and €600 million of 1.50% notes due 2020 resulting in a \$26 million interest charge (\$20 million after-tax).
- (c) Noncontrolling interests from continuing operations includes a \$1 million benefit and a \$35 million charge in 2019 and 2018, respectively, related to the 8% of Linde AG Shares which were not tendered in the Exchange Offer. Linde AG completed the cash merger squeeze-out of all its minority shares on April 8, 2019 (see Note 3).
- In addition, 2019 and 2018 noncontrolling interests from continuing operations include \$54 million and \$24 million, respectively, of Linde AG purchase accounting impacts.

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- (d) Provisions to the allowance for doubtful accounts were \$170 million, \$25 million, and \$33 million in 2019, 2018, and 2017, respectively. The allowance activity in each period related primarily to write-offs of uncollectible amounts, net of recoveries and currency movements.
- (e) Includes estimated income tax payments of \$115 million and \$172 million in 2019 and 2018, respectively.
- (f) Consists primarily of insurance contracts and other investments to be utilized for non-qualified pension and OPEB obligations.
- (g) Long-term receivables are not material and are largely reserved. The balances at December 31, 2019 and 2018 are net of reserves of \$44 million and \$46 million, respectively. The amounts in both periods relate primarily to long-term notes receivable from customers and government receivables in Brazil. Collectability is reviewed regularly and uncollectible amounts are written-off as appropriate.
- (h) Americas consists of currency translation adjustments primarily in Canada, Mexico, and Brazil. EMEA relates primarily to Germany, the United Kingdom and Sweden. APAC relates primarily to China, Korea, India and Australia.

NOTE 10. PROPERTY, PLANT AND EQUIPMENT – NET

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

<i>(Millions of dollars)</i> December 31,	Depreciable Lives (Yrs)	2019	2018
Production plants (primarily 15-year life) (a)	10-20	\$ 25,493	\$ 24,726
Storage tanks	15-20	4,295	4,061
Transportation equipment and other	3-15	2,809	2,654
Cylinders	10-30	4,184	3,955
Buildings	25-40	3,162	3,083
Land and improvements (b)	0-20	1,229	1,162
Construction in progress		3,146	2,296
		44,318	41,937
Less: accumulated depreciation		(15,254)	(12,220)
		<u>\$ 29,064</u>	<u>\$ 29,717</u>

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

(b) - Land is not depreciated.

NOTE 11. GOODWILL

Changes in the carrying amount of goodwill for the years ended December 31, 2019 and 2018 were as follows:

<i>(Millions of dollars)</i>	Americas	EMEA	APAC	Engineering	Other	Total
Balance, December 31, 2017	\$ 2,306	\$ 695	\$ 59	\$ —	\$ 173	\$ 3,233
Addition due to Merger (Note 3)	6,890	10,802	5,193	1,060	201	24,146
Acquisitions (Note 3)	5	—	—	—	—	5
Purchase adjustments & other	12	—	—	—	—	12
Foreign currency translation	(39)	83	43	15	(4)	98
Disposals (Note 4)	—	(620)	—	—	—	(620)
Balance, December 31, 2018	9,174	10,960	5,295	1,075	370	26,874
Acquisitions (Note 3)	135	—	—	—	—	135
Measurement period adjustments (Note 3)	(255)	(636)	(323)	1,410	(42)	154
Foreign currency translation	(12)	(81)	(15)	(15)	(21)	(144)
Balance, December 31, 2019	\$ 9,042	\$ 10,243	\$ 4,957	\$ 2,470	\$ 307	\$ 27,019

Linde has historically performed its goodwill impairment tests annually during the second quarter of each year, and has determined that the fair value of each of its reporting units was substantially in excess of its carrying value. For the second quarter 2019 test, Linde 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, Linde 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.

During the fourth quarter of fiscal year 2019, the company changed the date of its annual goodwill impairment test from April 30 to October 1. The change was made to more closely align the impairment testing date with the company's planning process. The change in annual impairment testing date did not delay, accelerate or avoid an impairment charge. The company has determined this change in the method of applying an accounting principle is preferable.

Linde's impairment test performed during the fourth quarter of 2019 estimated the fair value of each reporting unit by applying multiples of earnings from a peer group to the company's forecasted earnings for the year ending December 31, 2019. The peer group is comprised of comparable entities with similar operations and economic characteristics. Linde concluded the fair value of reporting units exceeded its carrying value and therefore recognized no impairment. There were no indicators of impairment through December 31, 2019. Reporting units with greater concentration of Linde AG assets fair valued during the recent merger are at greater risk of impairment in future periods.

NOTE 12. OTHER INTANGIBLE ASSETS

The following is a summary of Linde's other intangible assets at December 31, 2019 and 2018:

(Millions of dollars) For the year ended December 31, 2019

Cost:

	Customer Relationships	Brands/Tradenames	Other Intangible Assets	Total
Balance, December 31, 2018	\$ 13,288	\$ 2,288	\$ 1,366	\$ 16,942
Additions (primarily acquisitions)	30	6	51	87
Foreign currency translation	(59)	(21)	(11)	(91)
Measurement period adjustments (Note 3)	(8)	492	178	662
Other *	(46)	(1)	28	(19)
Balance, December 31, 2019	13,205	2,764	1,612	17,581
Less: accumulated amortization:				
Balance, December 31, 2018	(317)	(22)	(380)	(719)
Amortization expense (Note 9)	(584)	(47)	(104)	(735)
Foreign currency translation	—	—	2	2
Other *	16	—	(8)	8
Balance, December 31, 2019	(885)	(69)	(490)	(1,444)
Net intangible asset balance at December 31, 2019	\$ 12,320	\$ 2,695	\$ 1,122	\$ 16,137

(Millions of dollars) For the year ended December 31, 2018

Cost:

	Customer Relationships	Brands/Tradenames	Other Intangible Assets	Total
Balance, December 31, 2017	\$ 772	\$ 46	\$ 619	\$ 1,437
Additions due to merger (Note 3)	12,555	2,226	811	15,592
Additions (primarily acquisitions)	1	—	26	27
Foreign currency translation	121	24	(9)	136
Disposals (Note 4)	(141)	(8)	(78)	(227)
Other *	(20)	—	(3)	(23)
Balance, December 31, 2018	13,288	2,288	1,366	16,942
Less: accumulated amortization:				
Balance, December 31, 2017	(260)	(18)	(374)	(652)
Amortization expense (Note 9)	(135)	(9)	(71)	(215)
Foreign currency translation	4	—	8	12
Disposals (Note 4)	55	5	52	112
Other *	19	—	5	24
Balance, December 31, 2018	(317)	(22)	(380)	(719)
Net balance at December 31, 2018	\$ 12,971	\$ 2,266	\$ 986	\$ 16,223

* Other primarily relates to the write-off of fully amortized assets and reclassifications.

There are no expected residual values related to these intangible assets. Amortization expense for the years ended December 31, 2019, 2018 and 2017 was \$735 million, \$215 million and \$91 million, respectively. The remaining weighted-average amortization period for intangible assets is approximately 28 years.

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

(Millions of dollars)

2020	\$	718
2021		713
2022		595
2023		570
2024		556
Thereafter		11,115
Total amortization related to finite-lived intangible assets		14,267
Indefinite-lived intangible assets at December 31, 2019		1,870
Net intangible assets at December 31, 2019	\$	16,137

NOTE 13. DEBT

The following is a summary of Linde's outstanding debt at December 31, 2019 and 2018:

(Millions of dollars)

Short-term

Commercial paper and U.S. bank borrowings
Other bank borrowings (primarily international)
Total short-term debt

	2019	2018
\$	996	\$ 829
	736	656
	1,732	1,485

Long-term (a)

(U.S. dollar denominated unless otherwise noted)

1.90% Notes due 2019 (b)
Variable rate notes due 2019 (b)
1.75% Euro denominated notes due 2019 (b,c)
4.25% AUD denominated notes due 2019 (b)
Variable rate notes due 2019 (b)
2.25% Notes due 2020
1.75% Euro denominated notes due 2020 (c)
0.634% Euro denominated notes due 2020
4.05% Notes due 2021
3.875% Euro denominated notes due 2021 (c)
3.00% Notes due 2021
0.250% Euro denominated notes due 2022 (c)
2.45% Notes due 2022
2.20% Notes due 2022
2.70% Notes due 2023
2.00% Euro denominated notes due 2023 (c)
5.875% GBP denominated notes due 2023 (c)
1.20% Euro denominated notes due 2024
1.875% Euro denominated notes due 2024 (c)
2.65% Notes due 2025
1.625% Euro denominated notes due 2025
3.20% Notes due 2026
3.434% Notes due 2026
1.652% Euro denominated notes due 2027
1.00% Euro denominated notes due 2028 (c)
1.90% Euro denominated notes due 2030
3.55% Notes due 2042
Other
International bank borrowings
Obligations under capital lease

—	500
—	150
—	578
—	71
—	200
300	299
1,137	1,185
56	58
499	499
711	755
499	498
1,129	1,156
599	598
499	498
499	498
776	805
456	454
615	628
361	373
398	398
556	568
725	725
196	195
93	96
872	861
118	121
662	662
10	10
309	291
149	81

Less: current portion of long-term debt

Total long-term debt

Total debt

12,224	13,811
(1,531)	(1,523)
10,693	12,288
\$ 13,956	\$ 15,296

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

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- (b) In February 2019, Linde repaid \$500 million of 1.9% notes that became due; in May 2019 Linde repaid \$150 million of variable notes that became due; in June 2019 Linde repaid €500 million of 1.75% notes that became due and the associated interest rate swap was settled; also in June 2019 Linde settled AUD100 million of variable rate notes that became due; and in August 2019 Linde repaid \$200 million of variable rate notes that became due.
- (c) December 31, 2019 and 2018 included a cumulative \$38 million and \$14 million adjustment to carrying value, respectively, related to hedge accounting of interest rate swaps.

Credit Facilities

On March 26, 2019 the company and certain of its subsidiaries entered into an unsecured revolving credit agreement ("the Credit Agreement") with a syndicate of banking institutions, which became effective on March 29, 2019. The 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 March 26, 2024 with the option to request two one-year extensions of the expiration date. In connection with the effectiveness of the Credit Agreement, Praxair and Linde AG terminated their major respective existing revolving credit facilities. No borrowings were outstanding under the Credit Agreement as of December 31, 2019.

On September 3, 2019 Linde and the company's subsidiaries Praxair and Linde AG entered into a series of parent and subsidiary guarantees related to currently outstanding notes issued by Praxair and Linde AG as well as the \$5 billion Credit Agreement.

Other Debt Information

As of December 31, 2019 and 2018, the weighted-average interest rate of short-term borrowings outstanding was 0.6% for both periods.

Expected maturities of long-term debt are as follows:

(Millions of dollars)

2020	\$	1,531
2021		1,855
2022		2,330
2023		1,798
2024		983
Thereafter		3,727
	\$	<u>12,224</u>

As of December 31, 2019, the amount of Linde's assets pledged as collateral was immaterial.

See Note 15 for the fair value information related to debt.

NOTE 14. FINANCIAL INSTRUMENTS

In its normal operations, Linde is exposed to market risks relating to fluctuations in interest rates, foreign currency exchange rates, energy costs and to a lesser extent precious metal prices. 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 interest rate contracts are generally not designated as hedges for accounting

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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, 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 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, 2019, 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, 2019 and 2018 for consolidated subsidiaries:

(Millions of dollars)	Notional Amounts		Fair Value			
			Assets (a)		Liabilities (a)	
	2019	2018	2019	2018	2019	2018
December 31,						
Derivatives Not Designated as Hedging Instruments:						
<i>Currency contracts:</i>						
Balance sheet items	\$ 7,936	\$ 6,357	\$ 62	\$ 24	\$ 37	\$ 42
Forecasted transactions	748	945	14	15	15	17
Cross-currency interest rate swaps	1,029	2,110	35	112	40	40
<i>Commodity contracts</i>	N/A	N/A	—	27	—	9
Total	9,713	9,412	111	178	92	108
Derivatives Designated as Hedging Instruments:						
<i>Currency contracts:</i>						
Balance sheet items	\$ 27	\$ —	\$ 2	\$ —	\$ 3	\$ —
Forecasted transactions	464	158	9	2	3	3
<i>Commodity contracts</i>	N/A	N/A	6	—	1	—
<i>Interest rate swaps</i>	1,908	2,164	39	13	—	10
Total Hedges	\$ 2,399	\$ 2,322	\$ 56	\$ 15	\$ 7	\$ 13
Total Derivatives	\$ 12,112	\$ 11,734	\$ 167	\$ 193	\$ 99	\$ 121

(a) Current assets of \$85 million are recorded in prepaid and other current assets; long-term assets of \$82 million are recorded in other long-term assets; current liabilities of \$54 million are recorded in other current liabilities; and long-term liabilities of \$45 million 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 ("AOCI") 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

Interest Rate/Cross-Currency Interest Rate 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. The fair value adjustments for the majority of these contracts are recorded to AOCI and are eventually offset by the income statement impact of the underlying commodity purchase.

Net investment hedges

As of December 31, 2019, Linde has not designated any hedges of net investment positions in foreign operations. Linde had previously designated Euro-denominated debt instruments as net investment hedges to reduce the company's exposure to changes in the currency exchange rate on investments in foreign subsidiaries with Euro functional currencies. Exchange rate movements of \$206 million relating to the previously designated Euro-denominated debt incurred in the financial periods prior to de-designation will remain in AOCI, until appropriate, such as upon sale or liquidation of the foreign operations at which time amounts will be reclassified to the consolidated statements of income. Exchange rate movements related to the Euro-denominated debt occurring after de-designation are shown in 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. The notional value of outstanding interest rate swaps of Linde with maturity dates from 2020 through 2028 was \$1,908 million at December 31, 2019 and \$2,164 at December 31, 2018 (see Note 13 for further information).

Terminated Treasury Rate Locks

The unrecognized aggregate losses related to terminated treasury rate lock contracts on the underlying \$500 million 3.00% fixed-rate notes that mature in 2021 and the \$500 million 2.20% fixed-rate notes that mature in 2022 at December 31, 2019 and December 31, 2018 were \$2 million (net of taxes of \$1 million) and \$2 million (net of taxes of \$1 million), respectively. The unrecognized gains/(losses) for the treasury rate locks are shown in AOCI and are being recognized on a straight line basis to interest expense - net over the term of the underlying debt agreements.

Impact of derivative instruments on earnings and AOCI

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 *		
	2019	2018	2017
December 31,			
Derivatives Not Designated as Hedging Instruments			
Currency contracts:			
Balance sheet items:			
Debt-related	\$ 253	\$ (118)	\$ 121
Other balance sheet items	65	3	—
Total	\$ 318	\$ (115)	\$ 121

* 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.

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The amounts of gain or loss recognized in AOCI and reclassified to the consolidated statement of income was immaterial for the year ended December 31, 2019. Net losses expected to be reclassified to earnings during the next twelve months are also not material.

The gains (losses) on net investment hedges are recorded as a component of AOCI within foreign currency translation adjustments in the consolidated balance sheets and the consolidated statements of comprehensive income. The gains (losses) on treasury rate locks are recorded as a component of AOCI within derivative instruments in the consolidated balance sheets and the consolidated statements of comprehensive income. The gains (losses) on net investment hedges are reclassified to earnings only when the related currency translation adjustments are required to be reclassified, usually upon sale or liquidation of the investment. The gains (losses) for interest rate contracts are reclassified to earnings as interest expense –net on a straight-line basis over the remaining maturity of the underlying debt.

NOTE 15. 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, 2019 and 2018:

(Millions of dollars)	Fair Value Measurements Using					
	Level 1		Level 2		Level 3	
	2019	2018	2019	2018	2019	2018
Assets						
Derivative assets	\$ —	\$ —	\$ 167	\$ 193	\$ —	\$ —
Investments and securities *	18	22	—	—	28	30
Total	<u>\$ 18</u>	<u>\$ 22</u>	<u>\$ 167</u>	<u>\$ 193</u>	<u>\$ 28</u>	<u>\$ 30</u>
Liabilities						
Derivative liabilities	\$ —	\$ —	\$ 99	\$ 121	\$ —	\$ —

* 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.

The following table summarizes the changes in level 3 investments and securities for the year ended December 31, 2019. Gains (losses) recognized in earnings are recorded to interest expense - net in the company's consolidated statements of income.

(Millions of dollars)	2019
Balance at January 1	\$ 30
Additions	1
Gains (losses) recognized in earnings	(3)
Balance at December 31	<u>\$ 28</u>

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, 2019, the estimated fair value of Linde's long-term debt portfolio was \$12,375 million versus a carrying value of \$12,224 million. At December 31, 2018 the estimated fair value of Linde's long-term debt portfolio was \$13,725 million versus a carrying value of \$13,811 million. As Linde AG's assets and liabilities were measured at estimated fair value as of the merger date, differences between the carrying value and the fair value not significant; remaining differences are attributable to interest rate increases subsequent to when the debt was issued and relative to stated coupon rates.

NOTE 16. EQUITY AND NONCONTROLLING INTERESTS

Linde plc Shareholders' Equity

At December 31, 2019 and 2018, 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, 2019 there were 552,012,862 and 534,380,544 of Linde plc ordinary shares issued and outstanding, respectively. At December 31, 2019 there were no shares of A ordinary shares, deferred shares or preferred shares issued or outstanding.

At December 31, 2018 there were 551,310,272 and 547,241,630 of Linde plc ordinary shares issued and outstanding, respectively. At December 31, 2018, 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.

2018 Merger of Praxair and Linde AG

Following is a summary of the Linde plc shareholders' equity transactions related to the merger:

(Dollar amounts in millions, shares in thousands)	Ordinary Shares		Additional Paid in Capital	Treasury Stock	
	Shares	Amount		Shares	Amount
Merger with Linde AG (a)	263,148	\$ —	\$ 43,288	—	\$ —
Conversion of Praxair to Linde plc shares (b)	—	(3)	3	—	—
Cancellation of Praxair Treasury stock (c)	(95,324)	—	(7,113)	(95,324)	7,113
Impact of Linde AG merger	167,824	\$ (3)	\$ 36,178	(95,324)	\$ 7,113

- (a) The total fair value of consideration transferred for the merger was \$43,288 million, resulting in an increase to "Additional paid-in capital" in stockholders' equity (see Note 3 for additional information).
- (b) On October 31, 2018, the conversion of Praxair common stock and Linde AG common stock into Linde ordinary shares resulted in a \$3 million decrease to "Ordinary Shares" with a corresponding increase to "Additional paid-in capital" in stockholders' equity.
- (c) Each share of Praxair common stock held in treasury immediately prior to the merger was canceled. The elimination of Praxair's historical treasury stock at cost resulted in a \$7,113 million decrease in "Treasury stock" and "Additional paid-in capital" in stockholders' equity.

As indicated above, in connection with the merger, Praxair and Linde AG common stock was converted into shares of Linde plc ordinary shares. The following table provides a summary of the share activity resulting from the merger:

(in thousands, except Linde AG exchange ratio)

Linde plc shares exchanged for Linde AG shares

Linde AG common stock tendered as of October 31, 2018 (i)	170,875
Business combination agreement exchange ratio (ii)	1.54
Linde plc ordinary shares issued in exchange for Linde AG	263,148
Linde plc shares issued to Praxair shareholders upon conversion	
Praxair shares outstanding at merger date	287,907
Total Linde plc shares issued at merger date	551,055

- (i) Number of Linde AG shares tendered in the 2017 Exchange Offer.
- (ii) Exchange ratio for Linde AG shares as set forth in the business combination agreement.

Other Linde plc Ordinary Share and Treasury Stock Transactions

Linde may issue new ordinary shares for dividend reinvestment and stock purchase plans and employee savings and incentive plans. The number of new Linde ordinary shares issued from the merger date through December 31, 2019 was 958,293 shares.

On December 10, 2018 the Linde board of directors approved the repurchase of \$1.0 billion of its ordinary shares under which Linde had repurchased 6,385,887 shares through December 31, 2019 (4,068,642 shares were repurchased through December 31, 2018). Linde completed the repurchases under this program in the first quarter of 2019.

Subsequently, 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 12,016,083 shares through December 31, 2019.

Noncontrolling Interests

Noncontrolling interest ownership changes are presented within the consolidated statements of equity. The \$2,921 million decrease during 2019 was primarily driven by Linde AG completion of the cash merger squeeze-out of all its minority shares on April 8, 2019. This represents the 8% of Linde AG shares which were not tendered in the Exchange Offer and were the subject of a cash-merger squeeze-out (See Note 3).

The \$186 million decrease during 2018 primarily relates to the sale of Praxair's industrial gases business in Europe (see Notes 1 and 4). The "Impact of Merger" line item of the consolidated statements of equity includes the fair value of the noncontrolling interests acquired from Linde AG, including the 8% of Linde AG shares which were not tendered in the Exchange Offer and were intended to be the subject of a cash-merger squeeze-out (See Note 3).

The \$15 million increase during 2017 relates to additional funding provided to PG Technologies, L.L.C. ("PGT") by the joint venture partner.

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, 2019, the redeemable noncontrolling interest balance includes industrial gas businesses in EMEA and Americas where the noncontrolling shareholders have put options.

NOTE 17. SHARE-BASED COMPENSATION

Share-based compensation expense was \$95 million in 2019 (\$62 million and \$59 million in 2018 and 2017, respectively). The related income tax benefit recognized was \$42 million in 2019 (\$30 million and \$53 million in 2018 and 2017, respectively). The expense was primarily recorded in selling, general and administrative expenses and no share-based compensation expense was capitalized.

Summary of Plans

The 2009 Praxair, Inc. Long-Term Incentive Plan was initially adopted by the board of directors and shareholders of Praxair, Inc. on April 28, 2009 and has been amended since its initial adoption ("the 2009 Plan"). Upon completion of the business combination of Praxair, Inc. with Linde AG on October 31, 2018, the 2009 Plan was assumed by the company. Prior to April 28, 2009, Praxair, Inc. granted equity awards under the 2002 Praxair, Inc. Long-Term Incentive Plan, ("the 2002 Plan") which was also assumed by the company upon completion of the business combination. The 2009 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, 2019, 6,454,428 shares remained available for equity grants under the 2009 Plan, of which 1,757,354 shares may be granted as awards other than options or stock appreciation rights.

In 2005, the board of directors and shareholders of Praxair, Inc. adopted the 2005 Equity Compensation Plan for Non-Employee Directors of Praxair, Inc. ("the 2005 Plan"). Upon completion of the business combination in October 2018, the 2005 Plan was also assumed by the company. Under the 2005 Plan, the aggregate number of shares available for option and other equity grants was limited to a total of 500,000 shares. The 2005 Plan expired on April 30, 2010, by its own terms, and no shares were available for grant thereafter.

Upon the completion of the business combination, all options outstanding under the 2009 Plan, the 2002 Plan and the 2005 Plan were converted into options to acquire the same number of shares of the company and at the same exercise price per share that applied prior to the business combination.

Exercise prices for options granted under the 2009 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 2009 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. Options granted under predecessor plans had similar terms.

In connection with the business combination, on October 31, 2018 the company's Board of Directors adopted the Long Term Incentive Plan 2018 of Linde plc ("the LTIP 2018"), the purpose of which is to replace certain outstanding Linde AG equity based awards that were terminated. Under the LTIP 2018, the aggregate number of shares available for replacement option rights and replacement restricted share units was set at 473,128. As of December 31, 2019, 260,794 shares remained available for grant, and since the company was obligated to make these replacement awards in 2019, it does not anticipate any further grants under this plan.

Exercise prices for the replacement option rights that were granted in 2019 under the LTIP 2018 were equal to EUR 1.67 (\$1.92 as converted at an exchange rate from the time the exchange offer was completed as the option rights are exercisable in U.S. dollars on the NYSE) as prescribed in the business combination agreement. Each replacement option right granted under the LTIP 2018 is subject to vesting based on continued service until the end of the four-year waiting period applicable to the relevant Linde AG award that had been granted before the business combination. After vesting, each option right will be exercisable for one year.

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 2019 was \$23.38 (\$19.29 in 2018 and \$12.40 in 2017) based on the Black-Scholes Options-Pricing model. The increase in grant date fair value year-over-year is primarily attributable to the increase in the company's stock price. The weighted-average fair value of replacement option rights granted in 2019 was \$160.08 based on intrinsic value method.

The following weighted-average assumptions were used to value the grants in 2019, 2018 and 2017:

<u>Year Ended December 31,</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Dividend yield	2.0%	2.1%	2.7%
Volatility	14.3%	14.4%	14.0%
Risk-free interest rate	2.38%	2.67%	2.13%
Expected term years	6	5	6

The following table summarizes option activity under the plans as of December 31, 2019 and changes during the period then ended (averages are calculated on a weighted basis; life in years; intrinsic value expressed in millions):

<u>Activity</u>	<u>Number of Options (000's)</u>	<u>Average Exercise Price</u>	<u>Average Remaining Life</u>	<u>Aggregate Intrinsic Value</u>
Outstanding at January 1, 2019	10,624	\$ 117.65		
Granted	1,486	157.14		
Exercised	(2,705)	103.87		
Cancelled or expired	(108)	158.17		
Outstanding at December 31, 2019	9,297	\$ 127.04	6.0	\$ 798
Exercisable at December 31, 2019	6,306	\$ 117.26	5.0	\$ 603

The aggregate intrinsic value represents the difference between the company's closing stock price of \$212.90 as of December 31, 2019 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 2019 was \$219 million (\$113 million and \$137 million in 2018 and 2017, respectively).

Cash received from option exercises under all share-based payment arrangements for 2019 was \$64 million (\$66 million and \$107 million in 2018 and 2017, respectively). The cash tax benefit realized from share-based compensation totaled \$56 million for 2019 (\$30 million and \$51 million cash tax benefit in 2018 and 2017, respectively).

As of December 31, 2019, \$32 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 Awards

In 2019, Linde granted 261,760 performance-based stock awards under the 2009 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 weighted-average fair value of ROC performance-based stock awards granted in 2019 was \$168.47, and during 2017 was \$109.68. 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. There were no ROC performance-based stock awards granted in 2018.

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The weighted-average fair value of performance-based stock tied to relative TSR performance granted in 2019 was \$215.85, and during 2017 was \$124.12, and was estimated using a Monte Carlo simulation performed as of the grant date. There were no performance-based stock tied to relative TSR performance granted in 2018.

Upon completion of the merger, each outstanding ROC and TSR performance-based award granted prior to 2018 was converted into a Linde RSU based on performance achieved as of immediately prior to the closing of the merger, and became subject to service-vesting conditions only. This resulted in the conversion of 435,000 performance-based shares into 704,000 restricted stock units. Compensation expense related to these awards will continue to be recognized over the remainder of the respective three-year service period.

There were 161,072 restricted stock units granted to employees by Linde during 2019. The weighted-average fair value of restricted stock units granted during 2019 was \$165.04 (\$144.86 in 2018 and \$111.95 in 2017). 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 award activity as of December 31, 2019 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, 2019	—	\$ —	1,071	\$ 118.84
Granted	262	184.29	161	165.04
Vested	—	—	(330)	107.10
Cancelled and Forfeited	(16)	184.26	(18)	146.32
Non-vested at December 31, 2019	246	\$ 184.29	884	\$ 129.43

There are approximately 7 thousand performance-based shares and 11 thousand restricted stock shares that are non-vested at December 31, 2019 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, 2019, \$23 million of unrecognized compensation cost related to performance-based awards and \$21 million of unrecognized compensation cost related to the restricted stock awards is expected to be recognized primarily through the first quarter of 2022.

NOTE 18. RETIREMENT PROGRAMS

Defined Benefit Pension Plans - U.S.

Linde has two main U.S. retirement programs which are non-contributory defined benefit plans: the Linde U.S. Pension Plan and the CBI Pension Plan. The latter program benefits primarily former employees of CBI Industries, Inc. which Linde acquired in 1996. Effective July 1, 2002, the Linde U.S. Pension Plan was amended to give participating employees a one-time choice to remain covered by the old formula or to elect coverage under a new formula. The old formula is based predominantly on years of service, age and compensation levels prior to retirement, while the new formula provides for an annual contribution to an individual account which grows with interest each year at a predetermined rate. Also, this new formula applies to all new employees hired after April 30, 2002 into businesses adopting this plan. The U.S. and international pension plan assets are comprised of a diversified mix of investments, including domestic and international 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 international 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 - International

Linde has international, defined benefit commitments primarily in Germany and the United Kingdom (U.K.). 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. Linde's contributions to these plans were \$2 million in 2019, 2018, and 2017 (these costs are not included in the tables that follow). For all MEPs, Linde's contributions were significantly less than 1% of the total contributions to each plan for 2018 and 2017. Total 2019 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. The PPA classifies MEPs as either Red, Yellow or Green Zone plans. Among other factors, plans in the Red Zone are generally less than 65 percent funded with a projected insolvency date within the next twenty years; plans in the Yellow Zone are generally 65 to 80 percent funded; and plans in the Green Zone are generally at least 80 percent funded. Red Zone plans are considered to be in "critical" or "critical and declining" status, while Yellow Zone plans are considered to be in "endangered" status. Plans that are in neither "critical" nor "endangered" status are considered to have Green Zone status. According to the most recent data available, four of the MEPs that the company participates in are in a Red Zone status and four are in a Green Zone status. As of December 31, 2019, the four Red Zone plans have pending or have implemented financial improvement or rehabilitation plans. Linde does not currently anticipate significant future obligations due to the funding status of these plans. 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. business employees are eligible to participate in the Linde defined contribution savings plan. Employees may contribute up to 40% of their compensation, subject to the maximum allowable by IRS regulations. For the U.S. packaged gases business, company contributions to this plan are calculated as a percentage of salary based on age plus service. U.S. employees other than those in the packaged gases business have company contributions to this plan calculated on a graduated scale based on employee contributions to the plan. The cost for these defined contribution plans was \$47 million in 2019, \$33 million in 2018 and \$29 million in 2017 (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 2,070,100 at December 31, 2019.

Certain international subsidiaries of the company also sponsor defined contribution plans where contributions are determined under various formulas. The expense for these plans was \$95 million in 2019, \$32 million in 2018 and \$21 million in 2017 (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 2019, 2018 and 2017 are shown in the table below (2018 reflects the impact of the Linde AG merger on October 31, 2018 (see Notes 1 and 3) and the divestiture of Praxair's European industrial gases business on December 3, 2018 (see Notes 1 and 4)):

(Millions of dollars) Year Ended December 31,	Pensions			OPEB		
	2019	2018	2017	2019	2018	2017
Amount recognized in Operating Profit						
Service cost	\$ 142	\$ 74	\$ 46	\$ 2	\$ 2	\$ 3
Amount recognized in Net pension and OPEB cost (benefit), excluding service cost						
Interest cost	261	128	103	7	5	5
Expected return on plan assets	(462)	(219)	(161)	—	—	—
Net amortization and deferral	61	71	68	(4)	(3)	(3)
Curtailment and termination benefits (a)	8	—	—	—	—	(18)
Settlement charges (b)	97	14	2	—	—	—
	<u>\$ (35)</u>	<u>\$ (6)</u>	<u>\$ 12</u>	<u>\$ 3</u>	<u>\$ 2</u>	<u>\$ (16)</u>
Amount recognized in Net gain on sale of businesses						
Settlement gains from divestitures (c)	—	(44)	—	—	—	—
Net periodic benefit cost (benefit)	<u>\$ 107</u>	<u>\$ 24</u>	<u>\$ 58</u>	<u>\$ 5</u>	<u>\$ 4</u>	<u>\$ (13)</u>

(a) In 2019, Linde recorded curtailment gains of \$9 million and a charge of \$17 million for termination benefits, primarily in connection with a defined benefit pension plan freeze. The curtailment gain recorded during the year ended December 31, 2017 resulted from the termination of an OPEB plan in South America in the first quarter.

(b) In the third and fourth quarters of 2019, Linde recorded pension settlement charges of \$40 million and \$6 million, respectively, related to lump sum payments made from a U.S. qualified plan. These payments were triggered by merger-related divestitures. In the first quarter of 2019, benefits of \$91 million were paid related to the settlement of a U.S. non-qualified plan. Such benefits were triggered by a change in control provision and resulted in a settlement charge of \$51 million.

2018 includes the impact of a \$4 million charge and a \$10 million charge recorded in the third and fourth quarters, respectively. In the third quarter, a series of lump sum benefit payments made from the U.S. supplemental pension plan triggered a settlement of the related pension obligation. In the fourth quarter, a change in control provision triggered the settlement of a U.S. non-qualified plan.

2017 includes the impact of a \$2 million charge related to a series of lump sum benefit payments for employees under an international pension plan.

(c) In connection with Praxair merger-related divestitures, primarily the European industrial gases business, certain European pension plan obligations were settled. This resulted in the recognition of associated pension benefit obligations and deferred losses in accumulated other comprehensive income (loss) within operating profit in the "Net gain on sale of businesses" line item.

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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, 2019 and 2018 are shown below.

(Millions of dollars) Year Ended December 31,	Pensions				OPEB	
	2019		2018		2019	2018
	U.S.	International	U.S.	International		
Change in Benefit Obligation ("PBO")						
Benefit obligation, January 1	\$ 2,508	\$ 7,533	\$ 2,215	\$ 725	\$ 184	\$ 146
Merger impact (a)	—	—	415	6,920	—	53
Service cost	38	104	42	32	2	2
Interest cost	81	180	74	54	7	5
Divestitures (b)	(1)	—	—	(106)	—	—
Participant contributions	--	20	—	4	8	9
Plan amendment	—	13	—	1	—	—
Actuarial loss (gain)	266	1,045	(100)	7	8	(11)
Benefits paid	(105)	(333)	(111)	(84)	(20)	(19)
Plan settlement	(235)	—	(27)	—	—	—
Plan curtailment	—	(9)	—	—	2	—
Foreign currency translation and other changes	—	136	—	(20)	1	(1)
Benefit obligation, December 31	<u>\$ 2,552</u>	<u>\$ 8,689</u>	<u>\$ 2,508</u>	<u>\$ 7,533</u>	<u>\$ 192</u>	<u>\$ 184</u>
Accumulated benefit obligation ("ABO")	<u>\$ 2,464</u>	<u>\$ 8,553</u>	<u>\$ 2,428</u>	<u>\$ 7,385</u>		
Change in Plan Assets						
Fair value of plan assets, January 1	\$ 1,952	\$ 6,292	\$ 1,655	\$ 567	\$ —	\$ —
Merger impact (a)	—	—	475	5,880	—	—
Actual return on plan assets	341	598	(72)	(88)	—	—
Company contributions	—	94	—	75	—	—
Benefits paid from plan assets	(244)	(268)	(106)	(69)	—	—
Divestitures (b)	(1)	—	—	(49)	—	—
Foreign currency translation and other changes	—	172	—	(24)	—	—
Fair value of plan assets, December 31	<u>\$ 2,048</u>	<u>\$ 6,888</u>	<u>\$ 1,952</u>	<u>\$ 6,292</u>	<u>\$ —</u>	<u>\$ —</u>
Funded Status, End of Year	<u>\$ (504)</u>	<u>\$ (1,801)</u>	<u>\$ (556)</u>	<u>\$ (1,241)</u>	<u>\$ (192)</u>	<u>\$ (184)</u>
Recorded in the Balance Sheet (Note 9)						
Other long-term assets	\$ —	\$ 78	\$ 47	\$ 93	\$ —	\$ —
Other current liabilities	(6)	(10)	(94)	(10)	(11)	(13)
Other long-term liabilities	(498)	(1,869)	(509)	(1,324)	(181)	(171)
Net amount recognized, December 31	<u>\$ (504)</u>	<u>\$ (1,801)</u>	<u>\$ (556)</u>	<u>\$ (1,241)</u>	<u>\$ (192)</u>	<u>\$ (184)</u>
Amounts recognized in accumulated other comprehensive income (loss) consist of:						
Net actuarial loss (gain)	\$ 753	\$ 1,110	\$ 834	\$ 339	\$ (10)	\$ (23)
Prior service cost (credit)	—	4	—	10	(4)	(5)
Deferred tax benefit (Note 7)	(190)	(251)	(212)	(87)	(5)	7
Amount recognized in accumulated other comprehensive income (loss) (Note 9)	<u>\$ 563</u>	<u>\$ 863</u>	<u>\$ 622</u>	<u>\$ 262</u>	<u>\$ (19)</u>	<u>\$ (21)</u>

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(a) Represents Linde AG plan assets and benefit obligations assumed as part of the merger. Such plan assets and benefit obligations were remeasured as of the merger date and all subsequent activity through December 31, 2018 is presented within the respective captions above.

(b) Represents plan assets and benefit obligations associated with the divestiture of the majority of the Praxair industrial gases business in Europe.

Comparative funded status information as of December 31, 2019 and 2018 for select international 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:

	United Kingdom	Germany	Other International	Total International
(Millions of dollars)	2019	2019	2019	2019
Benefit obligation, December 31	\$ 5,221	\$ 2,180	\$ 1,288	\$ 8,689
Fair value of plan assets, December 31	4,777	1,119	992	6,888
Funded Status, End of Year	\$ (444)	\$ (1,061)	\$ (296)	\$ (1,801)

	United Kingdom	Germany	Other International	Total International
(Millions of dollars)	2018	2018	2018	2018
Benefit obligation, December 31	\$ 4,444	\$ 1,916	\$ 1,173	\$ 7,533
Fair value of plan assets, December 31	4,339	1,043	910	6,292
Funded Status, End of Year	\$ (105)	\$ (873)	\$ (263)	\$ (1,241)

The changes in plan assets and benefit obligations recognized in other comprehensive income in 2019 and 2018 are as follows:

	Pensions		OPEB	
(Millions of dollars)	2019	2018	2019	2018
Current year net actuarial losses (gains)*	\$ 834	\$ 286	\$ 8	\$ (11)
Amortization of net actuarial gains (losses)	(59)	(70)	3	2
Divestitures	—	(12)	—	—
Plan amendment	(4)	—	—	—
Amortization of prior service credits (costs)	(2)	(1)	1	1
Pension settlements	(97)	(14)	—	—
Curtailments	—	—	2	—
Foreign currency translation and other changes	12	(16)	—	1
Total recognized in other comprehensive income	\$ 684	\$ 173	\$ 14	\$ (7)

* Pension net actuarial losses in 2019 are largely driven by lower discount rates across all significant pension plans. In the U.S., the benefit from the actual return on assets more than offset the impacts of unfavorable liability experience, resulting from the low discount rate environment. For the international plans, the unfavorable impact of lower discount rates outweighed favorable plan asset experience. Pension net actuarial losses in 2018 are driven by lower U.S. discount rates, which more than offset favorable plan asset experience. OPEB net actuarial losses in 2019 relate to the low interest rate environment, which was partially offset by favorable actual benefit payment experience. Net actuarial gains in 2018 relate to the benefits from higher U.S. discount rates and favorable actual participant experience.

The amounts in accumulated other comprehensive income (loss) that are expected to be recognized as components of net periodic benefit cost during 2020 are as follows:

(Millions of dollars)	Pension	OPEB
Net actuarial loss (gain)	\$ 88	\$ (2)
Prior service cost (credit)	2	(1)
	\$ 90	\$ (3)

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

(Millions of dollars) Year Ended December 31,	Pensions			
	2019		2018	
	U.S.	International	U.S.	International
Projected benefit obligation ("PBO")	\$ 2,552	\$ 7,768	\$ 2,139	\$ 6,681
Accumulated benefit obligation ("ABO")	\$ 2,464	\$ 7,664	\$ 2,060	\$ 6,506
Fair value of plan assets	\$ 2,048	\$ 5,849	\$ 1,482	\$ 5,307

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				OPEB	
	U.S.		International			
	2019	2018	2019	2018	2019	2018
<i>Weighted average assumptions used to determine benefit obligations at December 31,</i>						
Discount rate	3.20%	4.20%	1.91%	2.72%	3.19%	4.16%
Rate of increase in compensation levels	3.25%	3.25%	2.46%	2.38%	N/A	N/A
<i>Weighted average assumptions used to determine net periodic benefit cost for years ended December 31,</i>						
Discount rate	4.20%	3.73%	2.72%	2.73%	4.16%	3.81%
Rate of increase in compensation levels	3.25%	3.25%	2.38%	2.45%	N/A	N/A
Expected long-term rate of return on plan assets (1)	7.27%	7.62%	5.15%	5.13%	N/A	N/A

- (1) The expected long term rate of return on the U.S. and international 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 7.27% was derived based on the target asset allocation of 40%-60% equity securities (approximately 8.5% expected return), 30%-50% fixed income securities (approximately 5.3% expected return) and 5%-15% alternative investments (approximately 6.8% expected return). For the international plans, the expected rate of return was derived based on the weighted average target asset allocation of 15%-25% equity securities (approximately 6.1% expected return), 30%-50% fixed income securities (approximately 4.8% expected return), and 30%-50% alternative investments (approximately 5.2% expected return). For the U.S. plan assets, the actual annualized total return for the most recent 10-year period ended December 31, 2019 was approximately 9.2%. For the international plan assets, the actual annualized total return for the same period was approximately 7.0%. Changes to plan asset allocations and investment strategy over this time period limit the value of historical plan performance as factor in estimating the expected long term rate of return. For 2020, the expected long-term rate of return on plan assets will be 7.00% for the U.S. plans. Expected weighted average returns for international plans will vary.

	OPEB	
	2019	2018
<u>Assumed healthcare cost trend rates</u>		
Historical Praxair, Inc. plans		
Healthcare cost trend assumed	7.00%	6.25%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	5.00%	5.00%
Year that the rate reaches the ultimate trend rate	2027	2023
Historical Linde AG plans		
Healthcare cost trend assumed	5.49%	5.49%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	4.50%	4.50%
Year that the rate reaches the ultimate trend rate	2038	2038

These healthcare cost trend rate assumptions have an impact on the amounts reported. However, cost caps limit the impact on the net OPEB benefit cost in the U.S. To illustrate the effect, a one-percentage point change in assumed healthcare cost trend rates would have the following effects:

	One-Percentage Point	
	Increase	Decrease
(Millions of dollars)		
Effect on the total of service and interest cost components of net OPEB benefit cost	\$ —	\$ —
Effect on OPEB benefit obligation	\$ 7	\$ (6)

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 international pension plans are managed individually based on diversified investment portfolios, with different target asset allocations that vary for each plan. Linde's U.S. and international pension plans' weighted-average asset allocations at December 31, 2019 and 2018, and the target asset allocation range for 2019, by major asset category, are as follows:

Asset Category	U.S.				International			
	Target 2019	Target 2018	2019	2018	Target 2019	Target 2018	2019	2018
Equity securities	40%-60%	40%-60%	55%	48%	15%-25%	15%-25%	23%	20%
Fixed income securities	30%-50%	30%-50%	30%	40%	30%-50%	30%-50%	41%	46%
Other	5%-15%	5%-15%	15%	13%	30%-50%	30%-40%	36%	34%

The following table summarizes pension assets measured at fair value by asset category at December 31, 2019 and 2018. During the years presented, there has been no transfer of assets between Levels 1, 2 and 3 (see Note 15 for definition of the levels):

	Fair Value Measurements Using							
	Level 1		Level 2		Level 3 **		Total	
(Millions of dollars)	2019	2018	2019	2018	2019	2018	2019	2018
Cash and cash equivalents	\$ 436	\$ 348	\$ —	\$ —	\$ —	\$ —	\$ 436	\$ 348
Equity securities:								
Global equities	1,395	1,131	—	—	—	—	1,395	1,131
Mutual funds	110	74	52	43	—	—	162	117
Fixed income securities:								
Government bonds	—	—	1,642	1,772	—	—	1,642	1,772
Emerging market debt	—	—	459	522	—	—	459	522
Mutual funds	225	109	14	21	—	—	239	130
Corporate bonds	—	—	401	382	—	—	401	382
Bank loans	—	—	210	313	—	—	210	313
Alternative investments:								
Real estate funds	—	—	—	—	316	298	316	298
Private debt	—	—	—	—	1,003	671	1,003	671
Other investments	—	—	33	33	—	—	33	33
Liquid alternative	—	—	1,087	1,192	—	—	1,087	1,192
Total plan assets at fair value, December 31,	\$ 2,166	\$ 1,662	\$ 3,898	\$ 4,278	\$ 1,319	\$ 969	\$ 7,383	\$ 6,909
Pooled funds *							1,553	1,335
Total fair value plan assets December 31,							\$ 8,936	\$ 8,244

* 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, 2019 and 2018:

(Millions of dollars)	Insurance Contracts	Real Estate Funds	Private Debt	Total
Balance, December 31, 2017	\$ 50	\$ 158	\$ —	\$ 208
Assumed in Linde AG merger	—	148	667	815
Gain/(Loss) for the period	—	9	4	13
Merger-related divestitures	(49)	—	—	(49)
Sales	—	(17)	—	(17)
Foreign currency translation	(1)	—	—	(1)
Balance, December 31, 2018	\$ —	\$ 298	\$ 671	\$ 969
Gain/(Loss) for the period	—	24	30	54
Acquisitions	—	—	14	14
Purchases	—	26	304	330
Sales	—	(22)	(33)	(55)
Transfer into / (out of) Level 3	—	(10)	—	(10)
Foreign currency translation	—	—	17	17
Balance, December 31, 2019	\$ —	\$ 316	\$ 1,003	\$ 1,319

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

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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 international companies from a diverse set of industries and size. Common stock is valued at the closing market price reported on a U.S. or international 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.

U.S. and International Government Bonds – This category includes U.S. treasuries, U.S. federal agency obligations and international 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 international companies from a diverse set of industries and size. The fair values for U.S. and international 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 – The fair value of insurance contracts is determined based on the cash surrender value of the 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 \$94 million in 2019, \$87 million in 2018 and \$19 million in 2017. Estimated required contributions for 2020 are currently expected to be in the range of \$50 million to \$80 million.

Estimated Future Benefit Payments

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

(Millions of dollars)

<u>Year Ended December 31,</u>	Pensions		OPEB
	U.S.	International	
2020	\$ 187	\$ 311	\$ 15
2021	143	323	14
2022	164	335	14
2023	147	342	14
2024	149	352	12
2025-2029	760	879	55

NOTE 19. 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 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 significant impact on the company's reported results of operations in any given period.

Significant matters are:

- During May 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 the 2009 third quarter, 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, 2019 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. The total estimated exposure relating to such claims, including interest and penalties, as appropriate, is approximately \$260 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 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 (\$546 million) on White Martins, the Brazil-based subsidiary of Praxair, Inc. The fine was reduced to R\$1.7 billion Brazilian reais (\$422 million) due to a calculation error made by CADE. On September 14, 2015, the fine against White Martins was overturned by the Ninth Federal Court of Brasilia. CADE appealed this decision on June 30, 2016.

Similarly, on September 1, 2010, CADE imposed a civil fine of R\$237 million Brazilian reais (\$59 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 (\$47 million) due to a calculation error made by CADE. On May 6, 2014 the fine against Linde Gases Ltda. was overturned by the Seventh Federal Court in Brasilia. CADE appealed this decision on October 27, 2016.

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.

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- 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 €109.40 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.

Commitments

At December 31, 2019, Linde had undrawn outstanding letters of credit, bank guarantees and surety bonds valued at approximately \$3,276 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 foreign 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 6, 7, 13, and 18).

NOTE 20. SEGMENT INFORMATION

Effective October 31, 2018, Praxair and Linde AG completed the previously announced merger, resulting in the formation of Linde plc (see Note 1 for additional information on the merger). As a result of the merger and effective with the lifting of the hold separate order effective on March 1, 2019, new operating segments were created which are used by the company's Chief Operating Decision Maker ("CODM") to allocate company resources and assess performance. 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 new 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 purposes remains unchanged - 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. For a description of Linde's previous operating segments, refer to Note 20 to the consolidated financial statements of Linde's 2018 Annual Report on Form 10-K.

The table below presents information about reportable segments for the years ended December 31, 2019, 2018 and 2017. The year ended December 31, 2019 reflects the results of both Praxair and Linde AG for the entire year. The year ended December 31, 2018 reflects the results of Praxair for the entire year and the results of Linde AG for the period beginning after October 31, 2018 (the merger date), including the impacts of purchase accounting (See Notes 1, 3 and 4 to the consolidated financial statements). The historical periods prior to 2018 reflect the results of Praxair. Prior periods presented have been recast to be consistent with the new segment structure:

<i>(Millions of dollars)</i>	2019	2018	2017
Sales (a)			
Americas	\$ 10,993	\$ 8,017	\$ 7,204
EMEA	6,643	2,644	1,520
APAC	5,839	2,446	1,571
Engineering	2,799	459	N/A
Other	1,954	1,270	1,063
Total Sales	\$ 28,228	\$ 14,836	\$ 11,358

Operating Profit

	2019	2018	2017
Americas	\$ 2,578	\$ 2,053	\$ 1,854
EMEA	1,367	481	317
APAC	1,198	465	329
Engineering	390	14	N/A
Other	(245)	(37)	(4)
Segment operating profit	5,288	2,976	2,496
Cost reduction programs and other charges	(567)	(309)	(52)
Net gain on sale of business	164	3,294	N/A
Purchase accounting impacts - Linde AG	(1,952)	(714)	N/A
Total operating profit	\$ 2,933	\$ 5,247	\$ 2,444

Depreciation and Amortization

	2019	2018	2017
Americas	\$ 1,195	\$ 860	\$ 778
EMEA	749	269	168
APAC	613	271	178
Engineering	35	5	N/A
Other	143	79	60
Segment depreciation and amortization	2,735	1,484	1,184
Purchase accounting impacts - Linde AG	1,940	346	N/A
Total depreciation and amortization	\$ 4,675	\$ 1,830	\$ 1,184

Capital Expenditures and Acquisitions

	2019	2018	2017
Americas	\$ 1,814	\$ 1,068	\$ 921
EMEA	738	329	141
APAC	1,231	372	207
Engineering	79	27	N/A
Other	45	112	75
Total Capital Expenditures and Acquisitions	\$ 3,907	\$ 1,908	\$ 1,344

Sales by Major Country

	2019	2018	2017
United States	\$ 8,604	\$ 5,942	\$ 4,973
Germany	3,630	868	401
China	2,005	1,032	735
United Kingdom	1,653	398	131
Australia	1,127	183	N/A
Brazil	994	1,003	1,100
Other -- foreign	10,215	5,410	4,018
Total Sales by Major Country	\$ 28,228	\$ 14,836	\$ 11,358

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	2019	2018	2017
Long-lived Assets by Major Country (b)			
United States	\$ 7,498	\$ 7,189	\$ 4,979
Germany	2,429	2,411	413
China	2,254	2,237	1,060
United Kingdom	1,479	1,582	55
Australia	1,214	1,476	N/A
Brazil	956	1,012	1,204
Other – foreign	13,234	13,810	4,114
Total long-lived assets	<u>\$ 29,064</u>	<u>\$ 29,717</u>	<u>\$ 11,825</u>

- (a) Sales reflect external sales only and include Linde AG sales from the merger date of October 31, 2018 forward. Intersegment sales, primarily from Engineering to the industrial gases segments, were not material.
- (b) Long-lived assets include property, plant and equipment - net and reflect the impact of the merger with Linde AG (refer to Note 3).

21. 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

Approximately 83% of Linde's consolidated sales are generated from industrial gases and related products in three geographic segments (Americas, EMEA, and APAC) and the remaining 17% is related primarily to the Engineering segment, and to a lesser extent Other (see Note 20 for operating segment details). Linde serves a diverse group of industries including healthcare, energy, manufacturing, food, beverage carbonation, fiber-optics, steel making, aerospace, chemicals and water treatment.

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.

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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.

Linde 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. 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.

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 \$368 million at December 31, 2019. Total contract liabilities are \$2,106 million at December 31, 2019 (current of \$1,758 million and \$348 million within other long-term liabilities in the consolidated balance sheets). Total contract liabilities were \$1,934 million at December 31, 2018 (current contract liabilities of \$1,546 million, \$234 million classified as deferred income within other current liabilities and \$154 million in other long-term liabilities in the consolidated balance sheets). Revenue recognized for the twelve months ended December 31, 2019 that was included in the contract liability at December 31, 2018 was \$1,168 million. Contract assets and liabilities primarily relate to the Linde Engineering business acquired in the merger. The industrial gases business does not typically have material contract assets or liabilities.

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 20, 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, 2019 and 2018. The year ended December 31, 2019 reflects the results of both Praxair and Linde AG for the entire year. The year ended December 31, 2018 reflects the results of Praxair for the entire year and the results of Linde AG for the period beginning after October 31, 2018 (the merger date).

(Millions of dollars)

		Year Ended December 31, 2019						
Sales	Americas	EMEA	APAC	Engineering	Other	Total	%	
Merchant	\$ 2,946	\$ 1,856	\$ 2,080	\$ —	\$ 184	\$ 7,066	25%	
On-Site	2,758	1,434	2,060	—	—	6,252	22%	
Packaged Gas	5,185	3,347	1,562	—	19	10,113	36%	
Other	104	6	137	2,799	1,751	4,797	17%	
	\$ 10,993	\$ 6,643	\$ 5,839	\$ 2,799	\$ 1,954	\$ 28,228	100%	

(Millions of dollars)

		Year Ended December 31, 2018						
Sales	Americas	EMEA	APAC	Engineering	Other	Total	%	
Merchant	\$ 2,775	\$ 832	\$ 826	\$ —	\$ 119	\$ 4,552	31%	
On-Site	2,405	536	1,156	—	—	4,097	28%	
Packaged Gas	2,800	1,271	443	—	3	4,517	30%	
Other	37	5	21	459	1,148	1,670	11%	
	\$ 8,017	\$ 2,644	\$ 2,446	\$ 459	\$ 1,270	\$ 14,836	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. The company estimates the consideration related to minimum purchase requirements is approximately \$48 billion. This amount excludes all 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.

NOTE 22. QUARTERLY DATA (UNAUDITED)

(Dollar amounts in millions, except per share data)

2019	1Q (a)	2Q (a)	3Q (a)	4Q (a)	YEAR (a)
Sales	\$ 6,944	\$ 7,204	\$ 7,000	\$ 7,080	\$ 28,228
Cost of sales, exclusive of depreciation and amortization	4,116	4,280	4,061	4,187	16,644
Depreciation and amortization	1,223	1,195	1,095	1,162	4,675
Operating profit	609	669	1,000	655	2,933
Net income – Linde plc	517	522	735	511	2,285
Income from continuing operations	435	513	728	507	2,183
Income from discontinued operations	82	9	7	4	102
Basic Per Share Data					
Income from continuing operations	\$ 0.80	\$ 0.95	\$ 1.35	\$ 0.94	\$ 4.03
Income from discontinued operations	0.15	0.02	0.01	0.01	0.19
Weighted average shares (000's)	545,554	542,561	539,753	536,768	541,094
Diluted Per Share Data					
Income from continuing operations	\$ 0.79	\$ 0.94	\$ 1.34	\$ 0.94	\$ 4.00
Income from discontinued operations	0.15	0.02	0.01	0.01	0.19
Weighted average shares (000's)	549,147	546,488	543,616	540,919	545,170
2018	1Q (a)	2Q (a)	3Q (a)	4Q (a)	YEAR (a)
Sales	\$ 2,983	\$ 3,044	\$ 3,008	\$ 5,801	\$ 14,836
Cost of sales, exclusive of depreciation and amortization	1,661	1,706	1,698	3,955	9,020
Depreciation and amortization	311	311	306	902	1,830
Operating profit	653	689	669	3,236	5,247
Net income – Linde plc	462	480	461	2,978	4,381
Income from continuing operations	462	480	461	2,870	4,273
Income from discontinued operations	—	—	—	108	108
Basic Per Share Data					
Income from continuing operations*	\$ 1.61	\$ 1.67	\$ 1.60	\$ 6.27	\$ 12.93
Income from discontinued operations*	—	—	—	0.24	0.33
Weighted average shares (000's)	287,504	287,803	288,093	457,518	330,401
Diluted Per Share Data					
Income from continuing operations*	\$ 1.59	\$ 1.65	\$ 1.58	\$ 6.22	\$ 12.79
Income from discontinued operations*	—	—	—	0.23	0.32
Weighted average shares (000's)	290,809	290,908	291,513	461,150	334,127

* Due to quarterly changes in the share count as a result of the merger the sum of the four quarters does not equal the earnings per share amount calculated for the year.

(a) 2019 and 2018 include the impact of the following matters (see Notes 3, 4, 5, 7, 13 and 18):

<i>(Millions of dollars)</i>	Operating Profit/ (Loss)	Income from Continuing Operations
Q1		
Cost reduction programs and other charges	\$ (89)	\$ (81)
Pension settlement charge	—	(38)
Purchase accounting impacts - Linde AG	(531)	(378)
Q2		
Cost reduction programs and other charges	(141)	(123)
Purchase accounting impacts - Linde AG	(515)	(368)
Q3		
Cost reduction programs and other charges	(125)	(91)
Pension settlement charge	—	(30)
Purchase accounting impacts - Linde AG	(425)	(312)
Gain on sale of business	164	108
Q4		
Cost reduction programs and other charges	(212)	(160)
Pension settlement charge	—	(4)
Purchase accounting impacts - Linde AG	(481)	(354)
Year 2019	\$ (2,355)	\$ (1,831)
<i>(Millions of dollars)</i>	Operating Profit/ (Loss)	Income from Continuing Operations
Q1		
Cost reduction programs and other charges	\$ (19)	\$ (18)
Q2		
Cost reduction programs and other charges	(24)	(21)
Q3		
Cost reduction programs and other charges	(31)	(29)
Pension settlement charge	—	(3)
Q4		
Cost reduction programs and other charges	(235)	(238)
Gain on sale of business	3,294	2,923
Bond redemption	—	(20)
Pension settlement charge	—	(8)
Tax Act and other tax charges	—	17
Purchase accounting impacts - Linde AG	(714)	(451)
Year 2018	\$ 2,271	\$ 2,152

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 the end of the annual period covered by this report, 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, 2019.

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, 2019 that have materially affected, or are reasonably likely to materially affect, Linde's internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

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, 2020 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. Clemens Börsig (chairman), Dr. Nance K. Dicciani, Dr. Thomas Enders, Edward G. Galante, Larry D. McVay and Dr. Victoria Ossadnik, 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 Prof. Dr. Clemens Börsig is 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, 2020 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, 2019 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 that were assumed by Linde upon the completion of the business combination on October 31, 2018.

EQUITY COMPENSATION PLANS TABLE

Plan Category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column
Equity compensation plans approved by shareholders	10,426,688 (1)	\$ 127.04	6,715,222 (2)
Equity compensation plans not approved by shareholders	—	—	—
Total	10,426,688	\$ 127.04	6,715,222

(1) This amount includes 883,922 restricted shares and 246,220 performance shares.

(2) This amount includes 6,454,428 shares available for future issuance pursuant to the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan assumed by Linde, and 260,794 shares available for future issuance pursuant to the Long Term Incentive Plan 2018 of Linde plc.

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, 2020 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, 2020 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, 2020 for the Annual General Meeting.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

- (a) The following documents are filed as part of this report:
- (1) The company's 2019 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.
 - (2) 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.
 - (3) 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	<u>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.)</u>
2.1a	<u>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. 1-11047, and is incorporated hereby by reference.)</u>
**2.2	<u>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).</u>
**2.3	<u>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).</u>
**2.3a	<u>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).</u>
**2.3b	<u>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).</u>
**2.3c	<u>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).</u>
3.01	<u>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. 333-218185, and incorporated herein by reference).</u>
4.01	<u>Description of Linde plc Ordinary Shares</u>
4.02	<u>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. 1-11017, and incorporated herein by reference).</u>
4.03	<u>Form of Subordinated Indenture for Praxair, Inc. (Filed as Exhibit 4.3 to Praxair, Inc.'s Form S-8, filed on May 12, 2015, File No. 333-204093, and is incorporated herein by reference).</u>
4.04	<u>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 5, 2019, Filing No. 1-38730, and incorporated herein by reference).</u>
4.05	Copies of the agreements relating 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.

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10.01	<u>Credit Agreement dated as of March 26, 2019, 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 April 3, 2019, Filing No. 1-38730, and incorporated herein by reference).</u>
10.01a	<u>Credit Agreement Additional Guarantor Supplement, dated as of September 3, 2019, by Linde AG, and acknowledged by Bank of America, N.A., as Administrative Agent (Filed as Exhibit 10.2 to the Linde plc Form 8-K dated September 6, 2019, Filing No. 1-38730, and incorporated herein by reference).</u>
*10.02	<u>Long Term Incentive Plan 2018 of Linde plc (Filed as Exhibit 4.4 to the Company's Form S-8, filed on October 31, 2018, File No. 333-228084, and incorporated herein by reference).</u>
*10.03	<u>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).</u>
*10.04	<u>Form of Executive Severance Compensation Agreement effective January 1, 2009 (Filed as Exhibit 10.02 to Praxair, Inc.'s 2008 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).</u>
*10.04a	<u>Form of Amendment, effective December 31, 2012, to Executive Severance Compensation Agreements that were effective January 1, 2009 (Filed as Exhibit 10.1 to Praxair, Inc.'s Current Report on Form 8-K dated December 14, 2012, Filing No. 1-11037, and incorporated herein by reference).</u>
*10.04b	<u>Form of Executive Severance Compensation Agreement effective January 1, 2010 (Filed as Exhibit 10.02 to Praxair, Inc.'s Quarterly Report on Form 10-Q for the quarter ended June 30, 2010, Filing No. 1-11037, and incorporated herein by reference).</u>
*10.04c	<u>Form of Amendment, effective December 31, 2012, to Executive Severance Compensation Agreements that were effective January 1, 2010 (Filed as Exhibit 10.02c to Praxair, Inc.'s 2012 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).</u>
*10.04d	<u>Form of Executive Severance Compensation Agreement effective January 1, 2013 (Filed as Exhibit 10.02d to Praxair, Inc.'s 2012 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).</u>
*10.04e	<u>Form of Assumption of Praxair, Inc. Executive Severance Compensation Agreement by Linde plc (Filed as Exhibit 10.05e to Linde plc's 2018 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).</u>
*10.05	<u>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).</u>
*10.05a	<u>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).</u>
*10.05b	<u>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).</u>
*10.05c	<u>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).</u>
*10.05d	<u>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).</u>
*10.05e	<u>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).</u>
*10.05f	<u>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).</u>
*10.06	<u>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).</u>
*10.06a	<u>First amendment to the Praxair, Inc. Equalization Benefit Plan 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).</u>
*10.06b	<u>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).</u>

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*10.06c	<u>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).</u>
*10.06d	<u>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).</u>
*10.06e	<u>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).</u>
*10.06f	<u>Praxair, Inc. 2018 Equalization Benefit Plan (Filed as Exhibit 99.1 to Praxair, Inc.'s Current Report on Form 8-K filed on October 22, 2018, File No. 1-11037, and incorporated herein by reference).</u>
*10.06g	<u>Praxair, Inc. 2018 Supplemental Retirement Income Plan A (Filed as Exhibit 99.2 to Praxair, Inc.'s Current Report on Form 8-K filed on October 22, 2018, File No. 1-11037, and incorporated herein by reference).</u>
*10.06h	<u>Praxair, Inc. 2018 Supplemental Retirement Income Plan B (Filed as Exhibit 99.3 to Praxair, Inc.'s Current Report on Form 8-K, filed October 22, 2018, File No. 1-11037, and incorporated herein by reference).</u>
*10.07	<u>Praxair, Inc. Director's Fees Deferral Plan amended and restated effective January 26, 2019 (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).</u>
*10.08	<u>Praxair, Inc. Compensation Deferral Program Amended and Restated as of July 15, 2014 (Filed as Exhibit 10.01 to Praxair, Inc.'s Quarterly Report on Form 10-Q for the quarter ended September 30, 2014, Filing No. 1-11037, and incorporated herein by reference).</u>
*10.08a	<u>First Amendment to the Praxair Compensation Deferral Program effective February 28, 2017 (Filed as Exhibit 10.07a to Praxair, Inc.'s 2016 Annual Report on Form 10-K, Filing No. 1-11037, and is incorporated herein by reference).</u>
*10.09	<u>Service Credit Arrangement for Stephen L. Appel dated May 23, 2007 was filed as Exhibit 10.20 to Praxair, Inc.'s Form 8-K filed on May 24, 2007 and is incorporated herein by reference.</u>
*10.10	<u>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. 333-228094, and incorporated herein by reference).</u>
*10.10a	<u>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).</u>
*10.10b	<u>Form of Transferrable 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).</u>
*10.10c	<u>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).</u>

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*10.10d	<u>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).</u>
*10.10e	<u>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).</u>
*10.10f	<u>Form of Restricted Stock Unit Award under the Amended and Restated 2009 Praxair, Inc. Long Term Incentive Plan for grants made in 2015 and thereafter (Filed as Exhibit 10.27 to Praxair, Inc.'s 2014 Annual Report on Form 10-K, Filing No. 1-11037, and incorporated herein by reference).</u>
*10.10g	<u>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).</u>
*10.10h	<u>Form of Non-Employee Director Restricted Stock Unit Award under 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 June 30, 2015, Filing No. 1-11037 and incorporated herein by reference).</u>
*10.10i	<u>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.</u>
*10.10j	<u>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 10.111 to Linde plc's 2018 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).</u>
*10.10k	<u>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).</u>
*10.10l	<u>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).</u>
*10.10m	<u>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).</u>
*10.11	<u>Form of Employer-Funded Pension Plan Executive Agreement of Linde AG (Filed as Exhibit 10.14 to Linde plc's 2018 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).</u>
*10.12	<u>Form of Linde AG Executive Employment Agreement (Filed as Exhibit 10.15 to Linde plc's 2018 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).</u>
*10.12a	<u>Form of Change Control Appendix to Linde AG Executive Employment Agreement (Filed as Exhibit 10.15A to Linde plc's 2018 Annual Report on Form 10-K, Filing No. 1-38730, and incorporated herein by reference).</u>
*10.13	<u>Service Agreement by and between Linde Holding GmbH and Mr. Sanjiv Lamba, dated December 20, 2019</u>
*10.13a	<u>Pension Agreement among Linde AG, Linde Holding GmbH and Mr. Sanjiv Lamba, dated December 20, 2019.</u>
*10.14	<u>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).</u>
18	<u>Preferability Letter on Change in Accounting Principle</u>

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21.01	<u>Subsidiaries of Lingle plc</u>
23.01	<u>Consent of Independent Registered Public Accounting Firm</u>
31.01	<u>Rule 13a-14(a) Certification</u>
31.02	<u>Rule 13a-14(a) Certification</u>
32.01	<u>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).</u>
32.02	<u>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).</u>
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.PRF	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.

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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.

Date: March 2, 2020

Linde plc
(Registrant)

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 March 2, 2020.

/s/ PROF. DR. WOLFGANG REITZLE
Wolfgang Reitzle
Chairman

/s/ PROF. DR. ANN-KRISTIN ACHLEITNER
Ann-Kristin Achleitner
Director

/s/ DR. THOMAS ENDERS
Thomas Enders
Director

/s/ LARRY D. MCVAY
Larry D. McVay
Director

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

/s/ STEPHEN F. ANGEL
Stephen F. Angel
Chief Executive Officer and Director

/s/ DR. CLEMENS BÖRSIG
Clemens Börsig
Director

/s/ FRANZ FEHRENBACH
Franz Fehrenbach
Director

/s/ DR. VICTORIA OSSADNIK
Victoria Ossadnik
Director

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

/s/ DR. NANCE K. DICCIANI
Nance K. Dicciani
Director

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

/s/ PROF. DR. MARTIN H. RICHENHAGEN
Martin Richenhagen
Director

Juan Pelaez

Vice President Investor Relations
Juan.Pelaez@linde.com
+1 203 837-2213

General Inquiries

Investor.Relations@linde.com
+1 203 837-2210

Ordinary Shares Listing (Symbol: LIN)

New York Stock Exchange
Frankfurt Stock Exchange
CUSIP: G5494J 103
ISIN: IE00BZ12WP82

Stock Transfer Agent and Stock Record Keeping

Computershare Trust Company, N.A.
("Computershare") is Linde's stock transfer agent and registrar, and administers all matters for shareholders of record.

For information about account records, stock certificates, change of address and dividend payments, contact: +1 866 201-5090 Toll Free and +1 781 575-2553 outside the United States or web.queries@computershare.com.

Website address:

www.computershare.com/investor

By mail, address shareholder inquiries to:

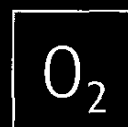
Computershare Investor Services
462 South 4th Street
Suite 1600
Louisville, KY, 40202
United States of America

Dividend Reinvestment Plan

Linde provides investors a convenient, low-cost program that allows dividends to be automatically reinvested into additional shares of Linde ordinary shares. Contact Computershare for full details.

For more information visit us online at www.linde.com





Linde plc

The Priestley Centre, 10 Priestley Road, The Surrey Research Park, Guildford, Surrey GU2 7XY, United Kingdom, www.linde.com