Air Liquide

2023 Universal Registration Document

Including the Annual Financial Report

4 Financial Statements

CONSOLIDATED FINANCIAL STATEMENTS

Consolidated income statement

For the year ended December 31

(in millions of euros)	Notes	2022	2023
Revenue	**(3)**	**29,934.0**	**27,607.6**
Other income	(4)	244.3	233.9
Purchases	(4)	(13,813.0)	(11,146.8)
Personnel expenses	(4)	(4,963.4)	(5,099.5)
Other expenses	(4)	(4,074.2)	(4,045.2)
Operating income recurring before depreciation and amortization		**7,327.7**	**7,550.0**
Depreciation and amortization expense	(4)	(2,465.9)	(2,482.0)
Operating income recurring		**4,861.8**	**5,068.0**
Other non-recurring operating income	(5)	262.4	242.3
Other non-recurring operating expenses	(5)	(833.1)	(738.8)
Operating income		**4,291.1**	**4,571.5**
Net finance costs	(6)	(288.4)	(265.5)
Other financial income	(6)	32.4	15.4
Other financial expenses	(6)	(130.0)	(166.1)
Income taxes	(7)	(1,002.3)	(971.8)
Share of profit of equity affiliates	(14)	1.1	4.9
PROFIT FOR THE PERIOD		**2,903.9**	**3,188.4**
■ Minority interests		145.1	110.4
■ Net profit (Group share)		2,758.8	3,078.0
Basic earnings per share *(in euros)*	**(8)**	**5.28**	**5.90**
Diluted earnings per share *(in euros)*	**(8)**	**5.27**	**5.87**

Accounting principles and notes to the Financial Statements begin on page 233.

Statement of net income and gains and losses recognized directly in equity

For the year ended December 31

(in millions of euros)	**2022**	**2023**
Profit for the period	**2,903.9**	**3,188.4**
Items recognized in equity		
Change in fair value of financial instruments	39.8	(47.9)
Change in foreign currency translation reserve	648.4	(1,118.4)
Items that may be subsequently reclassified to profit	**688.2**	**(1,166.3)**
Actuarial gains/ (losses)	222.8	(26.4)
Items that may not be subsequently reclassified to profit	**222.8**	**(26.4)**
Items recognized in equity, net of taxes	**911.0**	**(1,192.7)**
Net income and gains and losses recognized directly in equity	**3,814.9**	**1,995.7**
■ Attributable to minority interests	147.4	66.6
■ Attributable to equity holders of the parent	3,667.5	1,929.1

Consolidated balance sheet

For the year ended December 31

ASSETS *(in millions of euros)*	**Notes**	**December 31, 2022**	**December 31, 2023**
Goodwill	(10)	14,587.2	14,194.2
Other intangible assets	(11)	1,811.4	1,631.3
Property, plant and equipment	(12)	23,646.9	23,652.2
Non-current assets		**40,045.5**	**39,477.7**
Non-current financial assets	(13)	775.5	696.7
Investments in equity affiliates	(14)	185.7	180.1
Deferred tax assets	(15)	232.3	225.2
Fair value of non-current derivatives (assets)	(25)	40.8	35.1
Other non-current assets		**1,234.3**	**1,137.1**
TOTAL NON-CURRENT ASSETS		**41,279.8**	**40,614.8**
Inventories and work-in progress	(16)	1,961.0	2,027.6
Trade receivables	(17)	3,034.8	2,993.7
Other current assets	(19)	985.4	862.7
Current tax assets		196.3	42.9
Fair value of current derivatives (assets)	(25)	107.6	70.7
Cash and cash equivalents	(20)	1,911.4	1,624.9
TOTAL CURRENT ASSETS		**8,196.5**	**7,622.5**
ASSETS HELD FOR SALE		**41.7**	**95.1**
TOTAL ASSETS		**49,518.0**	**48,332.4**

EQUITY AND LIABILITIES *(in millions of euros)*	**Notes**	**December 31, 2022**	**December 31, 2023**
Share capital		2,879.0	2,884.8
Additional paid-in capital		2,349.0	2,447.7
Retained earnings		15,868.0	16,063.7
Treasury shares		(118.4)	(152.7)
Net profit (Group share)		2,758.8	3,078.0
Shareholders' equity		**23,736.4**	**24,321.5**
Minority interests		**835.6**	**721.6**
TOTAL EQUITY [(a)]	**(21)**	**24,572.0**	**25,043.1**
Provisions, pensions and other employee benefits	(22, 23)	1,991.1	2,004.8
Deferred tax liabilities	(15)	2,465.4	2,329.0
Non-current borrowings	(24)	10,168.8	8,560.5
Non-current lease liabilities	(12)	1,052.2	1,046.3
Other non-current liabilities	(26)	317.8	454.7
Fair value of non-current derivatives (liabilities)	(25)	54.5	48.0
TOTAL NON-CURRENT LIABILITIES		**16,049.8**	**14,443.3**
Provisions, pensions and other employee benefits	(22, 23)	282.4	363.8
Trade payables	(27)	3,782.6	3,310.5
Other current liabilities	(26)	2,215.6	2,310.1
Current tax payables		260.1	236.4
Current borrowings	(24)	2,003.9	2,285.3
Current lease liabilities	(12)	227.6	219.7
Fair value of current derivatives (liabilities)	(25)	108.6	76.2
TOTAL CURRENT LIABILITIES		**8,880.8**	**8,802.0**
LIABILITIES HELD FOR SALE		**15.4**	**44.0**
TOTAL EQUITY AND LIABILITIES		**49,518.0**	**48,332.4**

(a) A breakdown of changes in shareholders' equity and minority interests is presented on pages 231 and 232.

Consolidated cash flow statement

For the year ended December 31

(in millions of euros)	Notes	2022	2023
Operating activities			
Net profit (Group share)		**2,758.8**	**3,078.0**
Minority interests		**145.1**	**110.4**
Adjustments:			
■ Depreciation and amortization expense	(4)	2,465.9	2,482.0
■ Changes in deferred taxes [a]		92.6	(59.8)
■ Changes in provisions		565.9	471.2
■ Share of profit of equity affiliates	(14)	(1.1)	(4.9)
■ Profit/loss on disposal of assets		(129.9)	(126.9)
■ Net finance costs		215.4	192.9
■ Other non cash items		142.5	214.4
Cash flows from operating activities before changes in working capital [b]		**6,255.2**	**6,357.3**
Changes in working capital	(18)	(396.8)	(154.4)
Other cash items		(48.3)	60.1
Net cash flows from operating activities		**5,810.1**	**6,263.0**
Investing activities			
Purchase of property, plant and equipment and intangible assets	(11,12)	(3,273.0)	(3,393.4)
Acquisition of consolidated companies and financial assets		(135.8)	(103.0)
Proceeds from sale of property, plant and equipment and intangible assets		92.0	63.2
Proceeds from the sale of subsidiaries, net of net debt sold and from the sale of financial assets		61.1	339.7
Dividends received from equity affiliates		13.8	14.5
Net cash flows used in investing activities		**(3,241.9)**	**(3,079.0)**
Financing activities			
Dividends paid [c]			
■ L'Air Liquide S.A.		(1,410.5)	(1,581.2)
■ Minority interests		(76.3)	(85.4)
Proceeds from issues of share capital [c]		37.7	128.8
Purchase of treasury shares [c]		(191.5)	(81.9)
Net financial interests paid		(236.1)	(222.5)
Increase (decrease) in borrowings		(617.7)	(1,215.6)
Lease liabilities repayments		(249.0)	(240.1)
Net interests paid on lease liabilities		(33.6)	(39.8)
Transactions with minority shareholders		(4.0)	(142.0)
Net cash flows from (used in) financing activities		**(2,781.0)**	**(3,479.7)**
Effect of exchange rate changes and change in scope of consolidation		(165.2)	(61.6)
Net increase (decrease) in net cash and cash equivalents		**(378.0)**	**(357.3)**
NET CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE PERIOD		**2,138.9**	**1,760.9**
NET CASH AND CASH EQUIVALENTS AT THE END OF THE PERIOD		**1,760.9**	**1,403.6**

(a) Changes in deferred taxes reported in the consolidated cash flow statement do not include changes in deferred taxes relating to disposals of assets and capitalized finance costs.
(b) The cash flows from operating activities before changes in net working capital are presented before payment of interests on net debt net of taxes and of interests paid on lease liabilities.
(c) A breakdown of dividends paid, share capital increases and treasury share purchases is provided on pages 231 and 232.

The analysis of net cash and cash equivalents at the end of the period is as follows:

(in millions of euros)	Notes	December 31, 2022	December 31, 2023
Cash and cash equivalents	(20)	1,911.4	1,624.9
Bank overdrafts (included in current borrowings)		(150.5)	(221.3)
NET CASH AND CASH EQUIVALENTS		**1,760.9**	**1,403.6**

Consolidated statement of changes in equity

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FROM JANUARY 1, 2023 TO DECEMBER 31, 2023

(in millions of euros)	Notes	Share capital	Additional paid-in capital	Retained earnings (including net profit)	Fair value of financial instruments	Translation reserves	Treasury shares	Shareholders' equity	Minority interests	Total equity
Equity and minority interests as of January 1, 2023		**2,879.0**	**2,349.0**	**18,858.0**	**(169.4)**	**(61.8)**	**(118.4)**	**23,736.4**	**835.6**	**24,572.0**
Profit for the period				**3,078.0**				**3,078.0**	**110.4**	**3,188.4**
Items recognized directly in equity				(26.4)	(47.9)	(1,074.6)		(1,148.9)	(43.8)	(1,192.7)
Net income and gains and losses recognized directly in equity [a]				**3,051.6**	**(47.9)**	**(1,074.6)**		**1,929.1**	**66.6**	**1,995.7**
Increase (decrease) in share capital		6.5	116.2					122.7	6.2	128.9
Distribution	(9)			(1,582.8)				(1,582.8)	(85.4)	(1,668.2)
Cancellation of treasury shares [c]		(0.7)	(17.5)				18.2	—		—
Purchase/Sale of treasury shares [c]							(82.0)	(82.0)		(82.0)
Share-based payments				37.4			29.5	66.9		66.9
Transactions with minority shareholders recognized directly in equity				(36.5)				(36.5)	(101.4)	(137.9)
Others [d]				167.7				167.7		167.7
EQUITY AND MINORITY INTERESTS AS OF DECEMBER 31, 2023		**2,884.8** [b]	**2,447.7**	**20,495.4**	**(217.3)**	**(1,136.4)**	**(152.7)** [c]	**24,321.5**	**721.6**	**25,043.1**

(a) The statement of net income and gains and losses recognized directly in equity is presented on page 228.

(b) Share capital as of December 31, 2023 was made up of 524,516,778 shares at a par value of 5.50 euros. During the fiscal year, movements affecting share capital were as follows:
– creation of 440,106 shares in cash with a par value of 5.50 euros resulting from the exercise of options;
– share capital decrease by canceling 120,000 shares bought under the approval of the Combined Shareholders' Meeting on May 3, 2023;
– creation of 746,401 shares in cash with a par value of 5.50 euros resulting from the capital increase reserved for employees.

(c) The number of treasury shares as of December 31, 2023 totaled 1,363,694 (including 1,102,577 held by L'Air Liquide S.A.). During the fiscal year, movements affecting treasury shares were as follows:
– acquisitions, net of disposals, of 541,600 shares;
– cancellation of 120,000 shares by capital decrease;
– allocation of 281,356 shares as part of performance shares.

(d) Including the effects of hyperinflation in Argentina and Türkiye.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY FROM JANUARY 1, 2022 TO DECEMBER 31, 2022

(in millions of euros)	Share capital	Additional paid-in capital	Retained earnings (including net profit)	Fair value of financial instruments	Translation reserves	Treasury shares	Shareholders' equity	Minority interests	Total equity
Equity and minority interests as of January 1, 2022	**2,614.1**	**2,749.2**	**17,128.4**	**(209.2)**	**(701.9)**	**(118.3)**	**21,462.3**	**536.5**	**21,998.8**
Profit for the period			**2,758.8**				**2,758.8**	**145.1**	**2,903.9**
Items recognized directly in equity			223.0	39.8	645.9		908.7	2.3	911.0
Net income and gains and losses recognized directly in equity [(a)]			**2,981.8**	**39.8**	**645.9**		**3,667.5**	**147.4**	**3,814.9**
Increase (decrease) in share capital	1.9	21.6					23.5	14.2	37.7
Free share attribution	269.0	(269.0)					—		—
Distribution			(1,412.4)				(1,412.4)	(76.3)	(1,488.7)
Cancellation of treasury shares	(6.0)	(152.8)				158.8	—		—
Purchase/Sale of treasury shares						(191.1)	(191.1)		(191.1)
Share-based payments			4.7			32.2	36.9		36.9
Transactions with minority shareholders recognized directly in equity			(7.8)				(7.8)	213.8	206.0
Others [(b)]			163.3		(5.8)		157.5		157.5
EQUITY AND MINORITY INTERESTS AS OF DECEMBER 31, 2022	**2,879.0**	**2,349.0**	**18,858.0**	**(169.4)**	**(61.8)**	**(118.4)**	**23,736.4**	**835.6**	**24,572.0**

(a) The statement of net income and gains and losses recognized directly in equity is presented on page 228.
(b) Including the effects of hyperinflation in Argentina and Türkiye.

Accounting principles

BASIS FOR PREPARATION OF THE CONSOLIDATED FINANCIAL STATEMENTS

Due to its listing on the Paris Stock Exchange and pursuant to EC Regulation No. 1606/2002 of July 19, 2002, the Consolidated Financial Statements of the Air Liquide Group for the year ended December 31, 2023 have been prepared in accordance with IFRS (International Financial Reporting Standards), as endorsed by the European Union as of December 31, 2023. The IFRS standards and interpretations as adopted by the European Union are available at the following website:

https://finance.ec.europa.eu/regulation-and-supervision/financial-services-legislation/implementing-and-delegated-acts/international-accounting-standards-regulation_en

The Group has not anticipated any new standards, amendments to existing standards or new interpretations published by the IASB but not yet approved or not yet mandatory in the European Union, as of December 31, 2023.

The Financial Statements are presented in millions of euros. They were approved by the Board of Directors on February 19, 2024. They will be submitted for approval to the Shareholders' Meeting on April 30, 2024.

NEW IFRS AND INTERPRETATIONS

1. Standards, interpretations and amendments endorsed by the European Union whose application is mandatory as of January 1, 2023

The following texts have no significant impact for the Group:

- amendments to IAS 12 “Deferred Tax related to Assets and Liabilities arising from a Single Transaction”, issued on May 7, 2021;
- amendments to IAS 1 “Presentation of Financial Statements”, issued on February 12, 2021;
- amendments to IAS 8 “Definition of Accounting Estimates”, issued on February 12, 2021;
- amendments to IAS 12 “International Tax Reform—Pillar Two Model Rules”, issued on May 23, 2023. The international tax reform developed by Organization for Economic Cooperation and Development (OECD), referred to as “Pillar 2” aims to establish a minimum taxation of multinational groups at 15% in the form of a Top-up tax in each jurisdiction where such groups operate. These rules will have to be transposed by the various States. Within the European Union, a directive was adopted at the end of 2022 (transposed in France by the Finance Act ("Loi de finances") for 2024) for application to fiscal years beginning on or after January 1, 2024. The Group is affected by the Pillar 2 reform and will have to ensure that it is subject to a minimum tax rate of 15% in the countries where it operates. The Group is currently carrying out a project to identify the impacts and organize the processes to comply with these obligations. On the basis of the Pillar 2 model rules to date, the financial data of 2023 and the tax rates currently in force in the countries where it is established, as well as subject to regulatory clarifications to come, the Group does not expect this reform to have a significant impact on its effective global tax rate. No deferred taxes have been recognized in the Group's Consolidated Financial Statements as of December 31, 2023 in respect of any potential additional taxes.

In addition, the following texts are not applicable to the Group:

- IFRS 17 "Insurance Contracts", issued on May 18, 2017;
- amendments to IFRS 17 "First-time adoption of IFRS 17 and IFRS 9 - Comparative information", issued on December 9, 2021.

2. Standards, interpretations and amendments endorses by the European Union whose application is optional in 2023

The Group Financial Statements for the year ended December 31, 2023 do not include any potential impacts from the standards, interpretations and amendments endorsed by the European Union as of December 31, 2023, for which adoption is only mandatory as of fiscal years beginning after January 1, 2023. These texts are as follows:

- amendments to IAS 1 “Presentation of Financial Statements: Classification of Liabilities as Current or Non-current”, “Classification of Liabilities as Current or Non-current – Deferral of Effective Date” and “Non-current Liabilities with Covenants”, issued on January 23, 2020, July 15, 2020 and October 31, 2022 respectively;
- amendments to IFRS 16 “Lease Liability in a Sale and Leaseback” issued on September 22, 2022.

3. Standards, interpretations and amendments not yet endorses by the European Union

The impacts on the Financial Statements of texts published by the IASB as of December 31, 2023 and not yet endorsed by the European Union are currently being analyzed. These texts are as follows:

- amendments to IAS 7 and IFRS 7 "Vendor Finance Arrangements", issued on May 25, 2023;
- amendments to IAS 21 "The effects of changes in foreign exchange rates: lack of exchangeability", issued on August 15, 2023.

USE OF ESTIMATES AND ASSUMPTIONS

The preparation of the Financial Statements requires Group or subsidiary management to make estimates and use certain assumptions which have a significant impact on the carrying amounts of assets and liabilities recorded in the consolidated balance sheet, the notes related to these assets and liabilities, the profit and expense items in the income statement and the commitments relating to the period-end. Balance sheet, income statement and cash flow statement line items could differ should the subsequent actual results differ from the estimates. The most significant estimates and assumptions concern namely:

- the estimated useful life of property, plant and equipment used for calculation of depreciation and amortization: these estimates are described in section 5.e of the accounting policies;
- the assumptions used to determine provisions for employee retirement benefit obligations: the actuarial assumptions used (employee turnover, mortality, retirement age, salary increase, etc.), and the discount rates used to determine the present value of obligations, as described in section 9.b of the accounting policies and in note 23.3;
- the estimates and assumptions concerning assets' impairment tests, as described in section 5.f. of the accounting policies and in note 10.2;

- the methods used to recover deferred tax assets on the balance sheet disclosed in note 15.1;
- the risk assessment to determine the amount of provisions for contingencies and losses on the balance sheet disclosed in note 22;
- the accounting methods for the margin of the Engineering & Construction contracts that are set out in section 3.b of the accounting policies;
- the assumptions retained to evaluate the lease liability (IFRS 16): lease term and discount rate. They are described in section 5.g of the accounting principles.

In addition, the Group considers that climate risks are material, even though their quantified impact on the Consolidated Financial Statements of the Group is not material. The Group takes into account these risks in its closing assumptions and incorporates their potential impact in its Financial Statements. In particular, climate risks are taken into account when carrying out closing procedures, in particular the analysis of the useful lives of property, plant and equipment used for calculation of depreciation and amortization, the review of the estimates and assumptions concerning assets' impairment tests, and the risk assessment to determine the amount of provisions for contingencies and losses. The consideration of climate risks by the Group is described in particular in note 31.

ACCOUNTING POLICIES

The Consolidated Financial Statements were prepared under the historical cost convention, except for financial assets and liabilities measured at fair value through profit or loss or through other comprehensive income in accordance with IAS 32/IFRS 9. The carrying amount of other assets and liabilities hedged against fair value risk is adjusted to take into account the changes in fair value attributable to the hedged risks. In addition, the principles of fairness, going concern, and consistency were applied.

1. CONSOLIDATION METHODS

The consolidation methods used are:

- full consolidation method for subsidiaries;
- assets, liabilities, expenses and revenue of joint operations are recognized in relation to the Group's interest in these entities;
- equity method for joint ventures and associates.

a. Subsidiaries

All the subsidiaries or companies in which the Air Liquide Group exercises exclusive control are fully consolidated. Control exists when all the following conditions are met:

- the Group has existing rights that give it the current ability to direct the relevant activities;
- the Group is exposed, or has rights, to variable returns from its involvement with the entity;
- the Group has the ability to use its power over the entity so that it affects the amount of the returns.

Companies are fully consolidated from the date on which the Group obtains control and until the date on which control is transferred outside the Group.

b. Joint operations

Joint operations are joint arrangements whereby the Air Liquide Group has joint control with one or several parties through a contractual agreement, which gives it rights to the assets and obligations for the liabilities of the entity.

Assets, liabilities, expenses and revenue of joint operations are recognized in relation to the Group's interest in these entities. These amounts are recorded on each relevant line of the Financial Statements as for the consolidated entities.

c. Joint ventures

Joint ventures are joint arrangements whereby the Air Liquide Group has joint control with one or several parties through a contractual agreement, which gives it rights to the net assets of the entity.

Joint ventures are consolidated using the equity method. Under this one, the net assets and net profit of a company are recognized pro rata to the interest held by the Group in the share capital.

On acquisition of an investment in a joint venture, goodwill relating to the joint venture is included in the carrying amount of the investment.

d. Associates

Associates are investments over which the Air Liquide Group has significant influence (generally when the Group has more than a 20% interest), but no control.

Associates are consolidated using the equity method. Under this one, the net assets and net profit of a company are recognized pro rata to the interest held by the Group in the share capital.

On acquisition of an investment in an associate, the goodwill relating to the associate is included in the carrying amount of the investment.

The financial statements of subsidiaries, joint arrangements and associates are prepared as of December 31.

2. FOREIGN CURRENCY TRANSACTIONS AND BALANCES AND TRANSLATION OF THE FINANCIAL STATEMENTS OF COMPANIES WHOSE FUNCTIONAL CURRENCY IS NOT THE EURO

The functional currency of an entity is the currency of the primary economic environment in which it carries out its operations. In the majority of cases, the functional currency corresponds to the local currency. However, a functional currency other than the local currency can be retained for certain entities, provided that it represents the currency of the main transactions carried out by the entity and that it ensures faithful representation of its economic environment. Foreign currency transactions are recognized according to the following principles:

- foreign currency transactions are translated by each company into its functional currency at the exchange rate prevailing on the date of the transaction;
- at year-end, monetary assets and liabilities denominated in foreign currencies are translated into the functional currency at the closing exchange rate.

Exchange differences relating to commercial transactions are recognized in operating profit. For financial transactions, exchange differences are recognized in financial income and expenses except for differences resulting from the hedge of a net investment in a foreign entity that are directly recognized in equity until the net investment is removed from the consolidation scope.

The presentation currency of the Group's Consolidated Financial Statements is the euro. At the balance sheet date, the financial statements of companies whose functional currency is not the euro are translated into euros as follows:

- balance sheet items, at the official year-end exchange rates;
- income statement and cash flow statement items, using the average exchange rate over the period for each currency.

Exchange differences are recognized under a separate item “Translation reserves” in gains and losses recognized directly in equity.

Cumulative foreign exchange gains and losses as of January 1, 2004 arising from the translation into euros of the financial statements of subsidiaries whose functional currency is not the euro have been maintained as a separate component of equity.

On removal from the scope of consolidation, the cumulative exchange differences of a company whose functional currency is not the euro are recognized in the income statement.

3. REVENUE RECOGNITION

The analysis of revenue recognition is based on the Group’s activities, as follow:

a. Gas & Services

The supply of gas involves local production in order to limit transport costs. Therefore, Air Liquide gas production units are located throughout the world and can supply several types of customers and industries, with the relevant volumes and services required:

Large Industries

This business is characterized by the supply of large quantities of gas contracted for a period of 15 years or longer with a limited number of customers. The Group guarantees a high level of reliability and availability of gas supply with continued service, over the long-term. In return, these contracts include guaranteed minimum volumes through firm purchase clauses (take-or-pay). Due to the volume of gas to be supplied, Air Liquide supplies its Large Industries customers directly by pipelines, from a dedicated plant or different plants connected by a network.

These plants represent significant investments that are generally made in a way to share the production assets with the other business lines of the Group, particularly the Industrial Merchant business, or intended to serve the customers in an industrial basin that is connected on a pipeline network. In these cases, the assets are not identified under the meaning of IFRS 16 “Leases” and no lease contract is contained in the contracts with customers. When the customer’s gas supply comes from a dedicated plant, the Group may decide on the use of these plants under the meaning of IFRS 16 “Leases”. Consequently, the gas supply contracts for the Large Industries business do not contain leases.

Customers of the Large Industries business simultaneously receive and consume the benefits granted by the gas supply service or its availability. As a result, the revenue recognition related to these contracts occurs when the gas is supplied or when the reserved capacity is made available.

Industrial Merchant, Healthcare and Electronics

The Industrial Merchant business relies mainly on the gas production capacity of Large Industries and thereafter develops its own distribution logistics. This business is characterized by a wide range of customers and markets. The contract terms can be up to five years for cylinders and liquid gas supply and up to 15 years for small on-site gas generators.

Healthcare business supplies medical gases, hygiene products, services as well as medical devices to hospitals and patients in their homes. It also produces and distributes healthcare specialty ingredients for the cosmetics, pharmaceutical and vaccine markets.

The Electronics business supplies its customers with (i) carrier gases with a business model based on long-term contracts and on guaranteed minimum volumes with take-or-pay type clauses, (ii) electronics specialty materials in the form of pure or mixed gases, (iii) advanced materials, (iv) equipment and installations and (v) services notably on-site quality control and fluid management services.

For safety and quality reasons, Air Liquide supplies gas with its own equipment (small generators, storage tank, cylinders). Customers have no right of control on the identified assets under the meaning of IFRS 16 “Leases”.

Consequently, the gas supply contracts for these businesses do not contain leases and the revenue recognition occurs as follows:

- gas supply: the revenue recognition occurs when the gas is supplied or when the reserved capacity is made available;
- sale of standard equipment and materials: the revenue recognition occurs when the control of these equipment and materials is transferred, which generally takes place at their delivery;
- specific equipment and installations: the transfer of control occurs over the time, together with their construction. Consequently, the revenue recognition occurs based on the stage of completion of the contracts at the balance sheet date;
- service: the revenue recognition occurs when the service is provided.

b. Engineering & Construction

Air Liquide enters into contracts to design and build production units worldwide for the Group’s own account and for third-party customers.

The control of installations is transferred progressively with their design/construction. Consequently, the revenue recognition is based on the stage of completion of the contracts at the balance sheet date. The costs associated are recognized as an expense in the period when incurred. The stage of completion is assessed by using the ratio of contract costs incurred at the balance sheet date versus total estimated contract costs.

The margin realized at the stage of completion is recognized only when it can be reliably measured. When it is probable that total contract costs will exceed total contract revenue, the expected loss is immediately recognized as a provision for onerous contracts.

c. Global Markets & Technologies

The Global Markets & Technologies business focuses on new markets requiring a global approach. This business is growing mainly within the following markets:

- new markets relating to the energy transition, as well as space, aerospace, and extreme cryogenics markets. As a consequence of its nature, the analysis of the revenue recognition on this market is done on a case-by-case basis depending on the nature of performance obligations;
- gas usages by the actors in the maritime sector, namely offshore oil and gas platforms, offshore wind turbines, or cryogenic transportation by sea. The analysis carried out for Industrial Merchant is applicable to this market.

4. TAXES

a. Income tax expense

The tax rate is calculated on the basis of the fiscal regulations enacted or substantively enacted at the fiscal year closing date in each of the countries where the Group's companies carry out their business.

The Group's applicable tax rate corresponds to the average of the theoretical tax rates in force in each of the countries, weighted according to profit obtained in each of these countries.

The average effective tax rate is calculated as follows: (current and deferred income tax expense)/(net profit before tax less share of profit of equity affiliates, dividends received and net profit from discontinued operations).

b. Deferred taxes

Deferred taxes are recognized for all temporary differences between the carrying amount of assets and liabilities and their tax base (excluding non-deductible goodwill and the other exceptions provided in IAS 12), the tax loss carryforwards and the unused tax credits. Deferred tax assets are recognized on all deductible temporary differences provided that it is highly probable that the tax benefits will be realized in future years.

Deferred taxes are calculated at the tax rate applicable when the temporary difference is reversed and allowed under local regulations at the period-end date. The liability method is applied and any changes to the tax rates are recognized in the income statement, except those related to items directly recognized in equity.

Deferred tax assets and liabilities are offset if the entities have a legally enforceable right to offset and if they relate to income tax levied by the same taxation authority. Deferred taxes are not discounted.

Deferred taxes are mainly due to temporary differences between the tax and economic depreciation of assets, the carryforward of tax losses and provisions not immediately deductible for tax purposes, such as employee benefit provisions.

When the Group decides not to distribute profits retained by the subsidiary within the foreseeable future, no deferred tax liability is recognized.

5. NON-CURRENT ASSETS

a. Goodwill and business combinations

The Group has prospectively applied IFRS 3 revised and IAS 27 revised since January 1, 2010.

When the Group obtains control of an acquiree, the business combination is accounted for by applying the acquisition method on the acquisition date, in accordance with IFRS 3 revised:

- the identifiable assets acquired and the liabilities and contingent liabilities assumed are measured at fair value;
- any minority interests in an acquiree are measured as the minority interest's proportionate share of the acquiree's net identifiable assets or at fair value. This option is applied on a case-by-case basis;
- the consideration transferred and any contingent consideration are measured at fair value;
- acquisition-related costs are recorded as other operating expenses in the periods in which they are incurred.

For a business combination achieved in stages, any previously held equity interests in the acquiree are measured at the acquisition-date fair value. Any resulting gains or losses are recognized in profit or loss.

The measurement period of a business combination shall not exceed 12 months as of the acquisition date. Any adjustments, after the measurement period, of the consideration transferred and the fair values of acquired assets and assumed liabilities are recorded in the income statement.

On the acquisition date, goodwill is recognized in the consolidated balance sheet as the difference between:

- the consideration transferred plus the amount of minority interests in the acquiree and the fair value of the previously held equity interest; and,
- the fair value of the identifiable assets acquired and the liabilities and contingent liabilities assumed.

Negative goodwill is recognized immediately through profit or loss.

Goodwill is allocated to cash-generating units (CGUs) or groups of CGUs that benefit from business combination synergies. Subsequently, goodwill is not amortized but is tested for impairment annually or more frequently if there are any indications of impairment, in accordance with the method described in section 5.f.

In addition, at the time of the transition to IFRS and in accordance with the exemption offered by IFRS 1, the Group decided not to apply IFRS 3 "Business combinations" retrospectively for acquisitions that took place prior to January 1, 2004.

b. Research and Development expenditures

Research and Development expenditures include all costs related to the scientific and technical activities, patent work, education and training necessary to ensure the development, manufacturing, start-up, and commercialization of new or improved products or processes.

According to IAS 38, development costs shall be capitalized if, and only if, the Group can meet all of the following criteria:

- the project is clearly identified and the related costs are itemized and reliably monitored;
- the technical and industrial feasibility of completing the project is demonstrated;
- there is a clear intention to complete the project and to use or sell the intangible asset arising from it;
- the Group has the ability to use or sell the intangible asset arising from the project;
- the Group can demonstrate how the intangible asset will generate probable future economic benefits;
- the Group has adequate technical, financial and other resources to complete the project and to use or sell the intangible asset.

When these conditions are not satisfied, development costs generated by the Group are recognized as an expense when incurred.

Research expenditure is recognized as an expense when incurred.

c. Internally generated intangible assets

Internally generated intangible assets primarily include the development costs of information management systems. These costs are capitalized only if they satisfy the criteria as defined by IAS 38 and described above.

Internal and external development costs on management information systems arising from the development phase are capitalized. Significant maintenance and improvement costs are added to the initial cost of assets if they specifically meet the capitalization criteria.

Internally generated intangible assets are amortized over their useful lives.

d. Other intangible assets

Other intangible assets include separately acquired intangible assets such as software, licenses, and intellectual property rights. They also include the technology, brands and customer contracts valued upon the acquisition of companies in accordance with IFRS 3 “Business Combinations”.

With the exception of certain brands, intangible assets are amortized using the straight-line method over their useful lives. Information management systems are generally amortized over a period comprised between five and eight years and customer contracts over a maximum period of 25 years, considering the probabilities of renewal.

e. Property, plant and equipment

Land, buildings and equipment are carried at their acquisition cost less any accumulated depreciation and impairment losses.

In the event of mandatory dismantling or asset removals, related costs are added to the initial cost of the relevant assets and provisions are recognized to cover these costs.

Interest costs on borrowings to finance the construction of property, plant, and equipment are capitalized during the period of construction when they relate to the financing of industrial projects over a twelve-month construction period, or longer.

Where parts of an item of property, plant and equipment have different useful lives, they are accounted separately and depreciated over their own useful lives.

Repair and maintenance costs are recognized as expenses when incurred. The costs of major inspections and overhauls are recognized as a separate component of the asset and are depreciated over the period between two major overhauls.

Depreciation is calculated according to the straight-line method over the estimated useful lives as follows:

- buildings: 20 to 30 years;
- cylinders: 10 to 40 years;
- production units: 15 to 20 years;
- pipelines: 15 to 35 years;
- other equipment: 5 to 30 years.

The estimated useful lives are reviewed regularly and changes in the estimates are recorded prospectively from the date of change.

Land is not depreciated.

f. Impairment of assets

The Group regularly assesses whether there are any indications of asset impairment. If such indications exist, an impairment test is performed to assess whether the carrying amount of the asset is greater than its recoverable amount, defined as the higher of the fair value less costs to sell (net fair value) and the value in use.

Impairment tests are performed systematically once a year for goodwill and intangible assets with indefinite useful lives.

Assets that do not generate largely independent cash flows are grouped according to the cash-generating units (CGUs) to which they belong. A cash-generating unit is an identifiable group of assets that generates cash inflows that are largely independent of the cash inflows of other assets or groups of assets. They are mainly determined on a geographical basis and by reference to the markets in which the Group operates.

In practice, the Group performs impairment tests at various levels pursuant to these principles:

- dedicated and on-site plants are tested individually;
- pipelines and plants that provide these pipelines are tested at the network level;
- liquid gas and hydrogen/CO plants are grouped together according to the plants’ customer market;
- other assets are allocated to cash-generating units or groups of cash-generating units.

The cash-generating units of the Gas & Services activities are determined on a geographical basis. The other activities are managed at a worldwide level (Engineering & Construction and Global Markets & Technologies).

Goodwill is allocated to cash-generating units or groups of cash-generating units that benefit from business combination synergies and which represent the levels at which goodwill is monitored by the Group.

When performing impairment tests on cash-generating units or groups of cash-generating units comprising goodwill, the Group uses the market multiples approach. The multiples of revenue and operating income recurring before depreciation and amortization are based on the Air Liquide Group's stock market valuation. They are comparable with those of companies whose business is similar to that of the Group. The resulting multiples are applied to aggregates (revenue and operating income recurring before depreciation and amortization) of each CGU. Where the fair value obtained using the multiples method is not significantly greater than the net carrying amount of the cash-generating unit or group of cash-generating units, the Group confirms the recoverable amount of the cash-generating unit or group of cash-generating units using the estimated future cash flow approach (value in use).

For cash-generating units or groups of cash-generating units not including goodwill, and assets whose value is tested on an individual basis, the Group determines the recoverable amount using the estimated future cash flow approach (value in use).

The growth rates, taken into account with respect to the cash flow estimates for future cash-generating units or groups of cash-generating units, are determined based on the activity and geographical location of the CGU considered.

The Group takes into account climate risk and the challenges and opportunities presented by the energy transition when carrying out all impairment tests (including goodwill or individually tested assets).

In assessing value in use for property, plant and equipment, the estimated future cash flows are discounted to their present value. Cash flows are measured over the asset's estimated period of use, taking into account customer contract terms and technical obsolescence.

The discount rate depends on the nature, the location of the asset and the customer market. It is determined according to the minimum level of profitability expected from the investment considering industrial and commercial risks and credit terms.

When the recoverable amount of an asset, a cash-generating unit or a group of cash-generating units is lower than its carrying amount, an impairment loss is recognized immediately through profit and loss. An impairment loss of a cash-generating unit is first allocated to goodwill.

When the recoverable amount exceeds the carrying amount again, the previously recognized impairment loss is reversed to the income statement, with the exception of impairment losses on goodwill, which cannot be reversed.

g. Leases

In the course of its activity, the Group enters as a lessee in contracts mainly for the following types of assets:

- land, buildings and offices;
- transportation equipment, in particular for Industrial Merchant and Healthcare business lines;
- other equipment.

According to IFRS 16, any contract (apart from exceptions mentioned below) containing a lease leads to recognition on the lessee's balance sheet of a right-of-use of the leased asset and a lease liability related to the present value of the commitments for future lease payments (lease liability).

A contract is, or contains, a lease if it conveys to the Group the right to control the use of an identified asset for a period of time in exchange of consideration. In particular, the Group has concluded that transportation contracts which confer to the supplier the substantive right to substitute the vehicle throughout the period of use and/or the control on the choice of the route, the driver and maintenance policy, are service contracts and do not meet the definition of a lease under IFRS 16.

In addition, the Group has chosen to use the following exemptions and not to apply IFRS 16:

- to the lease contracts having a lease terms of 12 months or less;
- to the lease contracts for which the underlying asset is of low value, in particular, office and telephony equipment, computers and small IT equipment. Lease contracts for data centers are analyzed on a case-by-case basis.

The main assumptions used to measure the right-of-use and the lease liability are:

- lease term. It corresponds to the non-cancellable period for which a lessee has the right to use an underlying asset, together with periods covered by an option to extend or to terminate the lease if the Group is reasonably certain to exercise (for options to extend) or not to exercise (for options to terminate) such options. The probability to exercise or not an option is determined by type of contracts or on a case-by-case basis according to contractual terms, regulatory environment and the nature of the underlying asset (in particular, its technical specificity and strategic location);
- the discount rate used for evaluation of the lease liability. The discount rate retained is the lessee's incremental borrowing rate. Due to the centralized financing in the Group, it corresponds for each subsidiary to the interest rate for intragroup borrowings determined according to the currency of the lease contract, the country and the lease term taking into account the repayment profile (linear amortization of the lease liability).

Deferred taxes relating to the right of use asset and lease liability arising from a single transaction are recognized on a net basis.

6. FINANCIAL INSTRUMENTS

a. Non-consolidated investments

Investments in non-consolidated companies that are not accounted for using the equity method are classified as assets measured at fair value. These investments are not held for trading, consequently, at initial recognition, the Group may make an irrevocable election to present in other comprehensive income subsequent changes in the fair value. In this case, changes in fair value are not reclassified to net result upon disposal of these investments.

Dividends from these investments are recognized in other financial income.

b. Trade and other-receivables

Trade and other receivables are measured at their transaction price upon initial recognition and then at amortized cost less any impairment losses based on expected credit losses model.

Expected credit losses are estimated on the basis of a matrix consisting in using historical loss rates adjusted depending on actual observable conditions. Expected credit losses are estimated at each closing date in the following manner:

- segregating trade receivables into appropriate groups, in particular depending on the activities of the Group, type and size of client and its market segment;
- within each group of trade receivables, determining of age-bands;
- for each age-band identification of losses realized in previous financial year;
- adjusting if necessary historical loss rate depending on actual observable conditions in order to take into account, in particular, current market conditions, type of client, credit management practices of the Group as well as specific information concerning individual customers;
- application of loss rates estimated in this way to each age-band of trade receivables.

For all construction contracts in progress at the year-end, the gross amounts payable by and to customers represent the sum of costs incurred plus profits recognized using the percentage of completion method, equivalent to total revenue recorded using the percentage of completion method, less the amount of advances received.

Amounts payable by customers are presented in trade receivables. Amounts due to customers are presented in other current liabilities.

Assignments of trade receivables

Assignments of trade receivables are derecognized from the balance sheet when:

- the Group transfers the contractual rights to receive the cash flows related to these receivables to the assignee; or
- the Group retains the contractual rights to receive the cash flows related to these receivables, but assumes a contractual obligation to pay the cash flows to the assignee in an arrangement that cumulatively meets the following three conditions:
  - the Group has no obligation to pay to the assignee unless it collects the equivalent amount,
  - the Group is prohibited from selling or pledging the receivables other than as security for the obligation to pay cash flows to the assignee,
  - the Group has an obligation to remit any cash flows it collects on behalf of the assignee without material delay;
- and the Group transfers substantially all the risks and awards of ownership of the receivables, in particular credit risk and risk of late payment.

c. Cash and cash equivalents

Cash and cash equivalents include cash balances, current bank accounts, and short-term highly liquid investments that are readily convertible into cash and which are exposed to a negligible risk of change in value.

Short-term investments include temporary cash investments maturing in less than three months (commercial paper, certificates of deposit and money market funds) whose minimum long-term rating is A (S&P) or A2 (Moody's).

As cash investments maturing in less than three months are exposed to a negligible risk of a change in value, they are recognized at historical cost (including accrued interest) which is considered to approximate fair value.

d. Trade payables

The Group sets up supplier paying services agreements with partner banks to facilitate the processing of supplier invoices payments. The Group analyzes the main contract features that enable to keep the trade payables qualification. In particular, the Group ensures that the following characteristics are met:

- no deviation of the payment terms of the underlying payable between the financing party and the original supplier. In other words, the Group must pay to the bank no later than the payment term of invoice;
- payment terms negotiations between Air Liquide and supplier must be conducted independently of any negotiation on paying service agreement. In particular, payment terms shall not be subject to the supplier's success in selling invoices to the bank;
- the terms of contract with the supplier shall not be explicitly linked to any payment term extension. Payment term with a particular supplier must be homogenous, independently of the participation of a particular invoice in the program or not;
- payment terms should stay within the ordinary industry/sector norms and local regulation, and should not be tied to the participation in the paying services agreement;
- program structures should avoid debt-like features such as interest and fees paid by Air Liquide to the bank or supplier;
- tri-party agreements between Air Liquide, the supplier and the bank that pre-arrange the financing of the invoices owed by Air Liquide to the supplier shall be avoided.

e. Current and non-current borrowings

Borrowings include bonds and other bank borrowings (including the put options granted to minority shareholders).

At inception, borrowings are recognized at fair value corresponding to the net proceeds collected. At each balance sheet date, except for put options granted to minority shareholders, they are measured at amortized cost using the effective interest rate (EIR) method. Under this method, the borrowing cost includes the redemption premiums and issuance costs initially deducted from the nominal amount of the borrowing in liabilities.

Borrowings maturing in less than one year are classified as current borrowings.

Borrowings hedged by interest rate swaps are recognized on a hedge accounting basis.

Put options granted to minority shareholders

Put options granted to minority shareholders are recorded as borrowings at the option's estimated strike price. The share in the net assets of subsidiaries is reclassified from "Minority interests" to "Borrowings". Due to the absence of any specific IFRS guidance, the Group has elected to recognize the consideration for the difference between the strike price of the option granted and the value of the minority interests reclassified as borrowings in shareholders' equity – Group share. Minority interests in profit and loss do not change and still reflect present ownership interests.

f. Derivative assets and liabilities

Derivative financial instruments are used to manage exposures to foreign exchange, interest rate and commodity risks relating to the Group's financial and operating activities. For all these transactions, the Group applies hedge accounting and documents, at the inception of the transaction, the type of hedging relationship, the hedging instruments, and the nature and term of the hedged item.

Applying hedge accounting has the following consequences:

- fair value hedges for existing assets and liabilities: the hedged portion of the item is carried at fair value in the balance sheet. Any changes in fair value are recognized in the income statement, where they are offset by the corresponding changes in fair value of the hedging instruments (except for the impact of premiums/discounts);
- future cash flow hedges: the effective portion of the change in fair value of the hedging instrument is recorded directly in equity (items that may be subsequently reclassified to income statement), while the change in the fair value of the hedged item is not recognized in the balance sheet. The change in fair value of the ineffective portion is recognized in other financial income or expenses. When the hedged transactions occur and are recorded, amounts recorded in other comprehensive income are reclassified in the income statement;

- hedges of net investments in a foreign entity: the effective portion of the changes in fair value of the derivative instrument is recognized in gains and losses recognized directly in equity under "Translation reserves". The ineffective portion of changes in fair value is recognized in "Other financial income and expenses". Once the foreign entity subject to the net investment hedge is sold, the loss or profit initially recognized in translation reserves is recognized in profit or loss, within the gain or loss generated.

However, in limited circumstances, certain types of derivatives do not qualify for hedge accounting; they are carried at fair value through "Other financial income and expenses" with an offsetting entry in financial assets and financial liabilities.

The fair value of assets, liabilities and derivatives is based on the market price at the balance sheet date.

7. ASSETS HELD FOR SALE AND DISCONTINUED OPERATIONS

a. Assets classified as held for sale

Non-current assets or disposal groups are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. This classification occurs when the Group takes the decision to sell them and that the sale is considered highly probable.

The assets and liabilities held for sale are presented on different lines of the balance sheet. They are measured at the lower of their carrying amount or fair value less costs to sell. Assets classified as held for sale are no longer depreciated (amortized) as of the date they are classified as assets or disposal groups held for sale.

When a sale involving the loss of control of the subsidiary is considered highly probable, all the assets and liabilities of this subsidiary are classified as being held for sale, independently of whether or not the Group retains a residual interest in the entity after its sale.

b. Discontinued operations

A discontinued operation is a clearly identifiable component that the Group either has abandoned or that is classified as held for sale:

- representing a separate major line of business or geographical area of operations;
- being part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations; or,
- being a subsidiary acquired exclusively with a view to resale.

Once the criteria are met, the profit and loss and the cash flow from discontinued operations are presented separately in the income statement and the consolidated cash flow statement for each period.

8. SHARE CAPITAL, RESERVES AND TREASURY SHARES

Air Liquide's share capital is composed of ordinary shares.

Retained earnings include the following items:

- translation reserves: exchange differences arising from the translation into euros of financial statements prepared by foreign subsidiaries whose functional currency is not the euro are recorded in translation reserves. Fair value changes in net investment hedges of these foreign subsidiaries are also recorded in this reserve;
- fair value of financial instruments: this item records accumulated fair value changes in the effective portion of cash flow hedge derivatives (transactions not yet recognized in the accounts);
- actuarial gains and losses: all actuarial gains and losses and adjustments arising from the asset ceiling, net of deferred taxes, are recognized in consolidated reserves in the period in which they occur.

When the Group buys back its own shares, they are classified as treasury shares at the purchase price and presented as a deduction from equity for the consideration paid. The profit or loss from the sale of treasury shares is recognized directly in equity, net of tax.

Furthermore, acquisitions or disposals of minority interests, without change in control, are considered as transactions with the Group's shareholders. Thus, the difference between the price paid to increase the percentage of interest in entities that are already controlled and the additional share of equity thus acquired is recognized in Shareholders' equity. Similarly, a decrease in the Group's percentage interest in a controlled entity is accounted for as an equity transaction with no impact on profit or loss.

Disposals of shares with loss of control give rise to the recognition in disposal gains or losses of the change in fair value calculated for the total investment at the date of disposal. Any investments retained, where applicable, will be measured at fair value at the date when control is lost.

9. PROVISIONS

a. Provisions

Provisions are recognized when:

- the Group has a present obligation as a result of a past event;
- it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation;
- a reliable estimate can be made of the amount of the obligation.

Restructuring provisions include only the direct costs arising from the restructuring and are recognized in the period in which the Group has approved a detailed and formal restructuring plan and the restructuring has either begun or been announced. When these plans involve termination benefits, the resulting provisions are recognized at the earlier of the following dates:

- when the Group can no longer withdraw the offer of those benefits;
- when the provision of the related restructuring is recognized.

A provision for losses on contracts is recognized when the expected benefits from the contract are lower than the cost of satisfying the obligations under the contract.

b. Pensions and employee benefits

The Group provides its employees with various pension plans, termination benefits, jubilees and other post-employment benefits for both active and retired employees. The characteristics of each plan vary according to the laws and regulations applicable in each country as well as each subsidiary policy.

These benefits are covered by two types of plan:

- defined contribution plans;
- defined benefit plans.

The Group grants both defined benefit and defined contribution plans.

Defined contribution plans are plans under which the employer's sole obligation is to pay regular contributions. The employer's obligation is limited to payment of the planned contributions. The employer does not grant any guarantees on the future level of benefits paid to the employee or retiree (means-based obligation). The annual pension expense is equal to the contribution paid during the fiscal year which relieves the employer from any further obligation. It is recognized in "Personnel expenses".

Defined benefit plans are those by which the employer guarantees the future level of benefits defined in the agreement, most often depending on the employee's salary and seniority ("result-based obligation"). Defined benefit plans can be:

- either financed by contributions to a fund specialized in managing the amounts received;
- or managed internally.

In the case of defined benefit plans, retirement and similar obligations are measured by independent actuaries, according to the projected unit credit method. The actuarial calculations mainly take into account the following assumptions: salary increases, employee turnover, retirement date, life expectancy, inflation and appropriate discount rates for each country.

Defined benefit plans are covered by external pension funds in certain cases. The assets of these plans are mostly invested in bonds or equities carried at their fair value.

All actuarial gains and losses as well as any adjustment arising from the asset ceiling are recognized in the period in which they occur.

Actuarial assumptions used vary according to the demographic and economic conditions prevailing in each country where the Group has pension plans.

Discount rates used to measure the present value of the Company's obligations and the net interest cost are determined by reference to market yields on High-Quality corporate bonds. Where there is no deep market in such bonds, the market yields on government bonds with the same maturity at the valuation date shall be used. In the Euro zone, the United States, the United Kingdom and Canada, discount rates were determined using tools designed by independent actuaries. Their database uses several hundred different corporate bonds with a minimum AA-rating and maturities ranging from one to 30 years. Cash flows of expected benefits are subsequently discounted using rates associated to each maturity.

Valuations are carried out annually by independent actuaries for significant plans and every three years for other plans unless there are material changes in assumptions or major events that require a new calculation. Impacts related to defined benefit plans are registered as follows:

- the service cost, the gain relating to curtailments and settlements, and the actuarial gains and losses from other long-term benefits and recognized in "Personnel expenses". In addition, the service cost of defined benefit plans which are capped, linked to length of service and require the presence of the beneficiary in the company at the time of retirement is spread over the period between the date on which the services rendered began to generate rights and the date on which the additional services cease to generate rights;
- net interest cost for defined benefits is registered in "Other financial income and expenses";
- past service cost is recorded in profit or loss according to the nature of the change to the plan that generated it (i.e. either in "Personnel expenses" or in "Other operating income and expenses");
- actuarial gains and losses from defined benefit plans, retirement termination payments, and medical plans are recorded in "Gains and losses recognized directly in equity".

10. GOVERNMENT GRANTS

Government grants received are initially recognized in "Other non-current liabilities". They are then recognized as income in the income statement for the period:

- on the same basis as the subsidized assets are depreciated in the case of government grants related to assets;
- deducted from the costs intended to be compensated in the case of government grants other than those related to assets.

The Group analyzes the substance of government incentives delivered through the tax system and selects an accounting treatment consistent with such substance.

11. SHARE-BASED PAYMENTS

The Group grants stock options and performance shares to Executive Officers and some employees.

Stock options and performance shares are measured at fair value on the grant date. Their fair value is recognized as a "Personnel expense" in the income statement with a corresponding increase in equity, and amortized on a straight-line basis over the vesting period.

The valuation is performed by an independent expert, using mathematical models appropriate to the characteristics of each plan. It takes into account the market vesting conditions associated to each one. The fair value measured at the grant date is not subject to re-evaluation due to changes in market conditions.

Vesting conditions, other than market ones, have no impact on the fair value measurement of services received but adjust the expense that is recognized according to the number of equity instruments actually granted.

The dilution effect of non-vested stock option plans and performance share allocations is reflected in the calculation of diluted earnings per share.

Share subscription option plans

Options are valued using the following main underlying assumptions:

- volatility: implicit;
- risk-free interest rate: zero-coupon benchmark rate at the plan issue date and matching the various maturities retained;
- dividend growth rate: based on the historical average annual growth rate;
- employee resignation rate: that of individuals belonging to the same age group as the plan beneficiaries. The resignation rate is used to extrapolate the number of options which will not be exercised due to the resignation of beneficiaries;
- the probability of achieving the market vesting conditions.

Performance shares allocation plans

Performance shares are measured at fair value, taking into account a discount on non-transferable shares. The cost of non-transferability is measured as the cost of a two-step strategy consisting in the forward sale of shares being non-transferable for four years (or five years depending on the plan) and the purchase on the spot market of the same number of shares funded by an amortizable loan with an in fine capital repayment.

Valuation is based upon the following main underlying assumptions:

- risk-free interest rate: four-year zero-coupon benchmark rate (or five-year depending on the plan) at the plan issue date plus a credit margin that would be proposed to employees;
- dividend growth rate: based on the historical average annual growth rate;
- employee resignation rate: that of individuals belonging to the same age group as the plan beneficiaries. This resignation rate is used to extrapolate the shares which will not be allocated due to the resignation of beneficiaries;
- the probability of achieving the market vesting conditions.

12. GREENHOUSE GAS EMISSION QUOTAS

In certain countries, the Group is subject to greenhouse gas emission quota systems.

In the absence of any specific IFRS guidance, the Group has elected to apply the ANC Regulation No. 2014-03. The Group does not buy CO_2 quotas for the purpose of generating profits from fluctuations in price; therefore, at each closing date:

- a liability is recognized if the greenhouse gas emissions are higher than the CO_2 quotas held by the Group. It corresponds to the cost of CO_2 quotas in shortfall to cover the greenhouse gas already emitted; or,
- an asset is recognized if the greenhouse gas emissions are lower than the CO_2 quotas held by the entity. It corresponds to the CO_2 quotas available to cover the future greenhouse gas emissions, valued at historical cost.

13. RENEWABLE POWER PURCHASE AGREEMENTS

In order to reduce its indirect emissions related to energy purchases (Scope 2 emissions), the Air Liquide Group signs long-term renewable energy purchase agreements (Power Purchase Agreements or PPAs). The Group analyzes the main features of these contracts, in particular verifying that:

- Regarding IFRS 10/11:
  - Air Liquide neither has the right nor is exposed to variable returns from the entity supplying the energy,
  - Air Liquide has no power over the activities of the entity supplying the energy;
- Regarding IFRS 16: the volume to be purchased by Air Liquide under these contracts represents a portion of the sites' electricity production that does not represent substantially all of their capacity or, if this is the case, the Group has neither participated in its design nor has the right to control the use of the asset;
- Regarding IFRS 9:
  - site/basin consumption exceeds the contracted volume of renewable energy,
  - the Group does not resell with a view to generate a profit resulting from market price variations,
  - the terms of the contracts do not allow for net settlement in cash, in other financial instruments or by exchanging financial instruments, and Air Liquide's has no practice, for similar contracts, of such net settlements,
  - the PPA price structure is closely linked to the economic characteristics and risks of the energy supply contract.

Consequently, PPAs are classified as purchase contracts for own use, and are presented as off-balance sheet commitments.

Considerations for Virtual Power Purchase Agreements (or VPPAs)

VPPAs are financial instruments (derivatives) to be recognized at fair value at inception. The Group qualifies them as cash flow hedges by verifying:

- the highly probable nature of the underlying, i.e. electricity purchases over the entire term of the contract;
- the expected effectiveness of the hedge.

Basis for presentation of financial information

1. SEGMENT INFORMATION

The Group is structured according to the following activities: Gas & Services, Engineering & Construction and Global Markets & Technologies.

The Group's main operational decision-making body is the Executive Management assisted by the Executive Committee.

The Gas & Services activities are organized by geographical area, which is the responsible level for operations management and performance monitoring. These geographical areas are as follows:

- Europe;
- Americas;
- Asia Pacific;
- Middle East & Africa.

Within the Gas & Services segment, the geographical areas determine sales policies and development projects in liaison with the four business lines (Large Industries, Industrial Merchant, Healthcare and Electronics).

The Engineering & Construction segment is managed separately on a worldwide scale. The segment designs, develops and builds industrial gas production plants for the Group and third parties. It also designs and manufactures plants in the traditional, renewable and alternative energy sectors.

The Global Markets & Technologies segment is also managed separately on a worldwide scale. It focuses on new markets which require a global approach, drawing on science, technologies, development models, and usages related to digital transformation.

Research and Development and corporate activities do not meet the operating segments definition and are thus presented within reconciliation.

The information communicated in the tables covering segment information is presented according to the same accounting principles as those used for the Group Consolidated Financial Statements.

Revenue is analyzed by geographical area of production (country of origin).

Inter-segment revenue between Gas & Services, Engineering & Construction and Global Markets & Technologies activities corresponds to the sales between these operating segments.

The Group operating performance is assessed on the basis of each segment's Operating income recurring.

Segment assets include non-current assets, with the exception of "Deferred tax assets", "Investments in associates", "Fair value of non-current derivatives (assets)", as well as "Inventories and work-in-progress", "Trade receivables" and "Other current assets".

Segment liabilities correspond to "Provisions, pensions and other employee benefits", "Trade payables", "Other current liabilities" and "Other non-current liabilities".

Segment profits, assets and liabilities consist of amounts directly attributable to each segment, provided they can be allocated to the segment on a reasonable basis.

2. NET DEBT

The net debt includes:

- current and non-current borrowings, as defined in section 6.e of accounting policies;

reduced by:

- cash and cash equivalents, as defined in section 6.c of accounting policies.

The net debt does not include the lease liabilities as defined in section 5.g of accounting policies.

3. INFORMATION ON INTERESTS IN JOINT ARRANGEMENTS OR ASSOCIATES

The materiality of the interests in joint arrangements or associates is assessed according to the following criteria:

- contribution of the entity to the Group's Operating income recurring;
- share of these interests in the Group's net assets;
- dividends paid to these interests.

4. INFORMATION ON MINORITY INTERESTS

The materiality of the minority interests is assessed according to an analysis of:

- the minority interests' share in the Group's net assets;
- the contribution to the Group's Operating income recurring of the subsidiary having minority interests;
- dividends paid to minority interests.

5. OPERATING INCOME RECURRING

The Group's operating performance is measured based on Operating income or loss recurring determined in accordance with ANC recommendation No. 2020-01.

6. OTHER NON-RECURRING OPERATING INCOME AND EXPENSES

Material non-recurring operations that could affect operating performance readability are classified under "Other non-recurring operating income" and "Other non-recurring operating expenses". They may include:

- gains or losses on the disposal of activities or groups of assets;
- acquisition-related and integration-related costs relating to business combinations;
- restructuring costs resulting from plans whose unusual and material nature distort the readability of the Operating income recurring;
- significant provisions and impairment losses for property, plant and equipment and intangible assets;
- incurred or estimated costs relating to significant political risks or litigations;
- costs relating to capital increases reserved for employees;
- costs of projects to comply with regulatory changes impacting several geographical areas and for significant amounts.

7. NET EARNINGS PER SHARE

a. Basic earnings per share

Basic earnings per share is calculated by dividing net profit (Group share) attributable to ordinary shareholders of Air Liquide by the weighted average number of shares outstanding during the year, excluding ordinary shares purchased by Air Liquide and recognized in equity.

b. Diluted earnings per share

Diluted earnings per share take into account share subscription options and performance shares allocated to employees and Executive Officers if:

- the issue price, adjusted for unrecognized expenses at the year-end pursuant to IFRS 2, is lower than the Air Liquide annual average share price;
- the performance requirements meet the criteria set out in IAS 33 § 52.

Notes to the consolidated financial statements for the year ended December 31, 2023

Note 1 Significant events

There were no significant events during fiscal year 2023.

Note 2 Segment information

2.1. INCOME STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2023

	Gas & Services								
(in millions of euros)	Europe	Americas	Asia Pacific	Middle East and Africa	Sub-total	Engineering & Construction	Global Markets & Technologies	Reconciliation	Total
Revenue	**9,734.5**	**10,168.7**	**5,409.7**	**1,047.0**	**26,359.9**	**389.9**	**857.8**		**27,607.6**
Inter-segment revenue						*578.1*	*763.9*	*(1,341.9)*	
Operating income recurring	**1,722.6**	**2,124.5**	**1,214.1**	**209.4**	**5,270.6**	**43.1**	**143.3**	**(389.0)**	**5,068.0**
incl. depreciation and amortization	*(763.9)*	*(958.4)*	*(503.1)*	*(104.7)*	*(2,330.1)*	*(25.5)*	*(76.7)*	*(49.7)*	*(2,482.0)*
Other non-recurring operating income									242.3
Other non-recurring operating expenses									(738.8)
Net finance costs									(265.5)
Other financial income									15.4
Other financial expenses									(166.1)
Income taxes									(971.8)
Share of profit of equity affiliates									4.9
Profit for the period									**3,188.4**
Purchase of property, plant and equipment and intangible assets	(1,119.7)	(1,051.5)	(836.0)	(137.2)	(3,144.4)	(8.7)	(181.5)	(58.8)	(3,393.4)

The Research and Development and Holdings activities (corporate) are presented in the "Reconciliation" column.

2.2. INCOME STATEMENT FOR THE YEAR ENDED DECEMBER 31, 2022

	Gas & Services								
(in millions of euros)	Europe	Americas	Asia Pacific	Middle East and Africa	Sub-total	Engineering & Construction	Global Markets & Technologies	Reconciliation	Total
Revenue	**11,390.4**	**10,680.0**	**5,608.1**	**894.5**	**28,573.0**	**474.0**	**887.0**		**29,934.0**
Inter-segment revenue						*600.8*	*650.2*	*(1,251.0)*	
Operating income recurring	**1,576.6**	**2,084.2**	**1,189.8**	**211.0**	**5,061.6**	**43.8**	**111.9**	**(355.5)**	**4,861.8**
incl. depreciation and amortization	*(745.3)*	*(956.8)*	*(508.1)*	*(112.7)*	*(2,322.9)*	*(24.9)*	*(74.1)*	*(44.0)*	*(2,465.9)*
Other non-recurring operating income									262.4
Other non-recurring operating expenses									(833.1)
Net finance costs									(288.4)
Other financial income									32.4
Other financial expenses									(130.0)
Income taxes									(1,002.3)
Share of profit of equity affiliates									1.1
Profit for the period									**2,903.9**
Purchase of property, plant and equipment and intangible assets	(996.0)	(978.0)	(866.4)	(158.6)	(2,999.0)	(34.5)	(181.8)	(57.7)	(3,273.0)

2.3. BALANCE SHEET AS OF DECEMBER 31, 2023

(in millions of euros)	Gas & Services Europe	Americas	Asia Pacific	Middle East and Africa	Sub-total	Engineering & Construction	Global Markets & Technologies	Reconciliation	Total
Segment assets	**11,773.1**	**21,020.8**	**8,271.4**	**1,612.5**	**42,677.8**	**723.3**	**2,280.3**	**376.9**	**46,058.3**
Goodwill	3,182.3	9,141.5	1,346.7	151.7	13,822.2	236.7	135.3		14,194.2
Intangible assets and property, plant and equipment, net	6,326.9	10,371.3	5,660.2	1,237.9	23,596.3	185.6	1,104.8	396.8	25,283.5
Other segment assets	2,263.9	1,508.0	1,264.5	222.9	5,259.3	301.0	1,040.2	(19.9)	6,580.6
Non-segment assets									2,179.0
Assets held for sale									95.1
Total assets									**48,332.4**
Segment liabilities	**3,217.7**	**1,668.7**	**1,020.8**	**302.9**	**6,210.1**	**1,172.0**	**662.9**	**399.0**	**8,444.0**
Non-segment liabilities									14,801.3
Equity including minority interests									25,043.1
Liabilities held for sale									44.0
Total equity and liabilities									**48,332.4**

2.4. BALANCE SHEET AS OF DECEMBER 31, 2022

(in millions of euros)	Gas & Services Europe	Americas	Asia Pacific	Middle East and Africa	Sub-total	Engineering & Construction	Global Markets & Technologies	Reconciliation	Total
Segment assets	**11,271.3**	**21,754.7**	**8,536.4**	**1,847.4**	**43,409.8**	**738.5**	**2,220.0**	**434.0**	**46,802.3**
Goodwill	3,142.9	9,476.4	1,421.5	158.3	14,199.1	251.3	136.8		14,587.2
Intangible assets and property, plant and equipment, net	5,937.3	10,736.6	5,715.1	1,424.6	23,813.6	217.1	1,060.4	367.2	25,458.3
Other segment assets	2,191.1	1,541.7	1,399.8	264.5	5,397.1	270.1	1,022.8	66.8	6,756.8
Non-segment assets									2,674.0
Assets held for sale									41.7
Total assets									**49,518.0**
Segment liabilities	**3,120.6**	**1,844.1**	**1,115.0**	**313.3**	**6,393.0**	**1,118.7**	**629.6**	**448.2**	**8,589.5**
Non-segment liabilities									16,341.1
Equity including minority interests									24,572.0
Liabilities held for sale									15.4
Total equity and liabilities									**49,518.0**

2.5. OTHER INFORMATION ON GEOGRAPHICAL AREAS

2023 *(in millions of euros)*	France	Europe excl. France	United States	Americas excl. United States	Asia Pacific	Middle East and Africa	Total
Revenue	3,427.8	7,152.5	8,912.1	1,535.2	5,530.0	1,050.0	27,607.6
Non-current assets [(a)]	3,416.2	7,317.9	18,554.4	1,643.7	7,178.9	1,546.7	39,657.8
incl. Investments in equity affiliates	*24.5*	*22.1*	*5.5*	—	*31.2*	*96.8*	*180.1*

(a) Excluding non-current financial assets, deferred taxes and non-current derivative assets.

2022 *(in millions of euros)*	France	Europe excl. France	United States	Americas excl. United States	Asia Pacific	Middle East and Africa	Total
Revenue	3,601.9	8,834.0	9,235.4	1,652.4	5,713.7	896.6	29,934.0
Non-current assets [(a)]	3,146.0	7,135.1	19,102.9	1,783.6	7,322.3	1,741.3	40,231.2
incl. Investments in equity affiliates	*28.7*	*23.1*	*3.5*		*30.9*	*99.5*	*185.7*

(a) Excluding non-current financial assets, deferred taxes and non-current derivative assets.

Due to the substantial number of customers served by the Group (more than two million worldwide), to their significant diversity in multiple sectors and to their wide geographical dispersion, the Group's main customer represents only 1.8% of Air Liquide's revenue.

Note 3 Revenue

In 2023, consolidated revenue amounted to 27,607.6 million euros, down -7.8% compared to 2022.

3.1. REVENUE BY GEOGRAPHY AND BUSINESS LINE FOR THE YEAR ENDED DECEMBER 31, 2023

(in millions of euros)	Europe	Americas	Asia Pacific	Middle East and Africa	Total
Industrial Merchant	3,095.5	7,060.0	1,559.0	260.7	11,975.2
Large Industries	3,634.5	1,607.6	1,851.8	730.7	7,824.6
Healthcare	2,791.2	1,033.2	197.5	55.6	4,077.5
Electronics	213.3	467.9	1,801.4	—	2,482.6
Gas & Services Revenue	**9,734.5**	**10,168.7**	**5,409.7**	**1,047.0**	**26,359.9**
Engineering & Construction					389.9
Global Markets & Technologies					857.7
TOTAL REVENUE					**27,607.6**

3.2. REVENUE BY GEOGRAPHY AND BUSINESS LINE FOR THE YEAR ENDED DECEMBER 31, 2022

(in millions of euros)	Europe	Americas	Asia Pacific	Middle East and Africa	Total
Industrial Merchant	2,832.2	6,939.3	1,521.6	275.0	11,568.1
Large Industries	5,715.3	2,221.3	2,021.1	566.7	10,524.4
Healthcare	2,654.4	1,024.6	191.7	52.8	3,923.5
Electronics	188.5	494.8	1,873.7	—	2,557.0
Gas & Services Revenue	**11,390.4**	**10,680.0**	**5,608.1**	**894.5**	**28,573.0**
Engineering & Construction					474.0
Global Markets & Technologies					887.0
TOTAL REVENUE					**29,934.0**

Note 4 Operating income recurring

Operating income recurring includes purchases, personnel expenses, depreciation and amortization, other recurring income and other recurring expenses.

The Group purchases mainly consist of electricity, natural gas as well as industrial and medical products.

4.1. OTHER INCOME

Other income is primarily made up of net proceeds from the sale of property, plant, and equipment and intangible assets and various indemnities.

4.2. PERSONNEL EXPENSES

(in millions of euros)	2022	2023
Wages and social security charges	(4,790.0)	(4,923.2)
Defined contribution pension plans	(105.4)	(109.7)
Defined benefit plans	(31.1)	(27.0)
Share-based payments	(36.9)	(39.6)
TOTAL	**(4,963.4)**	**(5,099.5)**

Fully consolidated companies employed 67,778 individuals as of December 31, 2023 (67,109 individuals as of December 31, 2022).

4.3. OTHER OPERATING EXPENSES

Other operating expenses primarily include transport, maintenance, distribution costs and sub-contracting costs.

The operating leases costs included in other operating expenses are not significant and correspond to the contracts that do not fall within the scope of IFRS 16 (cf. paragraph 5.g. of the Accounting principles).

4.4. RESEARCH AND DEVELOPMENT EXPENDITURES

In 2023, innovation costs amounted to 309 million euros (308 million euros in 2022) including Research and Development costs of 205 million euros (199 million euros in 2022).

4.5. DEPRECIATION AND AMORTIZATION EXPENSES

(in millions of euros)	2022	2023
Intangible assets	(203.8)	(204.4)
Property, plant and equipment [(a)]	(2,262.1)	(2,277.6)
TOTAL	**(2,465.9)**	**(2,482.0)**

(a) Including the depreciation expense after deduction of investment grants released to profit.

Note 5 Other non-recurring operating income and expenses

(in millions of euros)	2022	2023
Income		
Net gain on the disposals of activities or group of assets	—	212.8
Impact of financial transactions related to the scope of consolidation	206.5	—
Political risks and legal procedures	55.9	26.3
Others	—	3.2
TOTAL OTHER NON-RECURRING OPERATING INCOME	**262.4**	**242.3**
Expenses		
Reorganization, restructuring and realignment programs costs	(71.8)	(152.8)
Acquisition costs	(7.9)	(11.0)
Political risks and legal procedures	(51.2)	(45.9)
Net loss on the disposals of activities or group of assets and impairments of assets	(83.4)	(488.5)
Impact of military conflict between Russia and Ukraine	(586.4)	—
Others	(32.4)	(40.6)
TOTAL OTHER NON-RECURRING OPERATING EXPENSES	**(833.1)**	**(738.8)**
TOTAL	**(570.7)**	**(496.5)**

In 2023, the Group recognized:

- Net gain on the disposals of activities or group of assets amounting to 212.8 millions euros including 173.3 million euros related to the disposal of non-consolidated investments;
- Net loss on the disposals of activities or group of assets and impairments of assets amounting to 488.5 million euros including 344.9 million euros following a strategic review that led to the impairment of some tangible and intangible assets in several countries and 129.9 million euros related to another intangible asset and assets held for sale;
- Income and expenses related to political risks and legal procedures, including a 21 million euros payment related to the equalization charge procedure. Indeed, in March 2023, Council of State "Conseil d'Etat" partially questioned the favorable judgment from the European Court of Justice of May 12, 2022 by referring the case to an Administrative Court of Appeal;
- Restructuring costs corresponding to realignment programs primarily in Gas & Services, especially in the Healthcare activity;
- Costs related to the capital increase reserved for employees, included in the "Others" line of the other non-recurring operating expenses.

In 2022, the Group recognized:

- An impact on financial transactions amounting to 206.5 million euros mainly corresponding to Air Liquide taking control of an existing 50/50 Joint Venture in Asia Pacific on January 11, 2022, and reevaluated at fair market value for 205.5 million euros;
- Restructuring costs corresponding to realignment programs primarily in Gas & Services activities;
- Incomes and expenses related to political risks and legal procedures, including a 47.7 million euros provision for risk in Engineering & Construction and a 31.9 million euros reversal of reserve initially set up to cover the risk of being requested to refund the equalization charge reimbursed to L'Air Liquide S.A in 2020. This reversal follows favorable conclusions released by the European Court of Justice on May 12, 2022;
- An impact of 586 million euros regarding the military conflict between Russia and Ukraine corresponding mainly to the provision for impairment, the impairment of non-consolidated investments and financial receivables that the Group holds with these Russian entities.

Note 6 Net finance costs and other financial income and expenses

6.1. NET FINANCE COSTS

(in millions of euros)	2022	2023
Gross finance costs	(321.4)	(334.9)
Financial income from short-term investments and loans	33.0	69.4
TOTAL	**(288.4)**	**(265.5)**

The average cost of net debt, excluding capitalized finance costs of +48.7 million euros (+49.4 million euros in 2022), stood at 3.4% in 2023, increasing compared to 2022. The average cost of net debt does not include the exceptional income related to the liability management of bonds denominated in US dollars and euros.

6.2. OTHER FINANCIAL INCOME AND EXPENSES

(in millions of euros)	2022	2023
Other financial income	32.4	15.4
TOTAL OTHER FINANCIAL INCOME	**32.4**	**15.4**
Other financial expenses	(85.2)	(93.0)
Interest expense on the net defined benefit liability	(9.2)	(35.1)
Interest on lease liabilities	(35.6)	(38.0)
TOTAL OTHER FINANCIAL EXPENSES	**(130.0)**	**(166.1)**

Increase of the other financial expenses mainly comes from a charge related to the payment of interest on arrears on the equalization charge for 15 million euros following the decision of the State Council in March 2023 (Note 5) as well as the increase of interest costs related to IAS 19 for 25.9 million euros.

As a reminder, other financial income in 2022 included the reversal of a provision related to interest on arrears on the equalization charge refund for +24.9 million euros (Note 5).

Note 7 Income taxes

7.1. INCOME TAX EXPENSES

(in millions of euros)	2022	2023
Current income tax expenses	(899.8)	(1,022.2)
TOTAL CURRENT TAX	**(899.8)**	**(1,022.2)**
Temporary differences	(102.5)	46.7
Impact of tax rate changes	—	3.7
TOTAL DEFERRED TAX	**(102.5)**	**50.4**
TOTAL	**(1,002.3)**	**(971.8)**

7.2. RECONCILIATION BETWEEN THE STANDARD TAX RATE AND THE GROUP EFFECTIVE TAX RATE

(in %)	2022	2023
Standard tax rate	**25.0**	**25.0**
Impact of transactions taxed at reduced rates	(2.5)	(2.3)
Impact of tax rate changes	—	
Impact of tax exemptions and others	3.2	0.7
Average effective tax rate	**25.7**	**23.4**

The 2023 average effective tax rate is lowered by the application of the reduced tax rate on long term gain from non-consolidated investment sale.

The 2022 average effective tax rate was higher due to the non-deductible provision booked on Russian assets.

In France, L'Air Liquide S.A. has elected to determine French income taxes on a consolidated basis. This scheme applies to all French subsidiaries complying with the legal requirements.

Foreign subsidiaries have elected to apply for similar rules wherever this is allowed under local regulations.

Note 8 Net earnings per share

8.1. BASIC EARNINGS PER SHARE

	2022	2023
Net profit (Group share) attributable to ordinary shareholders of the parent *(in millions of euros)*	2,758.8	3,078.0
Weighted average number of ordinary shares outstanding	522,069,020	522,110,068
Basic earnings per share *(in euros)*	**5.28**	**5.90**

8.2. DILUTED EARNINGS PER SHARE

	2022	2023
Net profit used to calculate diluted earnings per share *(in millions of euros)*	**2,758.8**	**3,078.0**
Weighted average number of ordinary shares outstanding	522,069,020	522,110,068
Adjustment for dilutive impact of share subscription options	689,503	607,373
Adjustment for dilutive impact of performance shares	1,166,620	1,317,409
Adjusted weighted average number of shares outstanding used to calculate diluted earnings per share	**523,925,143**	**524,034,850**
Diluted earnings per share *(in euros)*	**5.27**	**5.87**

All instruments that could dilute net profit – Group share, are included in the calculation of diluted earnings per share.

The Group has not issued any other financial instruments that may result in further dilution of net earnings per share.

Note 9 Dividend per share

The 2022 dividend on ordinary shares declared and paid on May 17, 2023 to the Group Shareholders was 1,582.8 million euros (including fidelity premium) and amounted to 2.95 euros per share and a fidelity premium of 0.29 euro per share.

A dividend payment of 3.20 euros per ordinary share and a fidelity premium of 0.32 euros per share amounting to 1,722.8 million euros (estimated amount taking into account share buybacks and cancellations) will be proposed to the Annual General Meeting in respect of the financial year ended December 31, 2023.

Note 10 Goodwill

10.1. MOVEMENTS DURING THE PERIOD

(in millions of euros)	As of January 1	Goodwill recognized during the period	Goodwill removed during the period	Foreign exchange differences	Other movements	As of December 31
2022	13,992.3	128.3	(54.5)	521.7	(0.6)	14,587.2
2023	**14,587.2**	**43.3**	**(30.7)**	**(405.6)**	**—**	**14,194.2**

10.2. SIGNIFICANT GOODWILL

	2022	2023		
	Net carrying amount	Gross carrying amount	Impairment losses	Net carrying amount
Gas & Services	14,199.1	13,822.2		13,822.2
Europe	*3,142.9*	*3,182.3*		*3,182.3*
Americas [(a)]	*9,476.4*	*9,141.5*		*9,141.5*
Asia-Pacific	*1,421.5*	*1,346.7*		*1,346.7*
Middle East and Africa	*158.3*	*151.7*		*151.7*
Engineering & Construction	251.3	236.7		236.7
Global Markets & Technologies	136.8	136.7	(1.4)	135.3
TOTAL GOODWILL	**14,587.2**	**14,195.6**	**(1.4)**	**14,194.2**

(a) Goodwill recognized within Gas & Services Americas mainly comes from the United States contributing up to 8,944.7 million euros as of December 31, 2023.

In the last two fiscal years, the Group has not recorded any goodwill impairment losses.

Impairment tests were carried out using the methods detailed in note 5.f of the accounting policies.

As of December 31, 2023, the recoverable amounts of each cash-generating unit or groups of cash-generating units, calculated using market multiples, significantly exceeded their net carrying amounts. Consequently, as stated in note 5.f of the accounting policies, the method of future estimated cash flow was not used to determine the recoverable amount of cash-generating units.

Considering the activity of the Air Liquide Group, no reasonably possible change in key assumptions would result in an impairment loss. The Gas & Services activities favor synergies between the different business lines by pooling assets for a given geographical area. The geographical development of an activity is generally based on local industrial investments and external growth operations through the Large Industries business line. The supply of gas to clients of the Large Industries business is contracted for a minimum duration of 15 years. These customer contracts provide a good visibility and guarantee of future income.

Note 11 Other intangible assets

11.1. GROSS CARRYING AMOUNTS

2023 (in millions of euros)	As of January 1	Additions	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Internally generated intangible assets	814.0	107.0	(2.2)	(9.9)	—	(19.5)	889.4
Other intangible assets	3,037.2	86.0	(20.3)	(81.2)	0.7	9.0	3,031.4
TOTAL GROSS INTANGIBLE ASSETS	**3,851.2**	**193.0**	**(22.5)**	**(91.1)**	**0.7**	**(10.5)**	**3,920.8**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*

2022 (in millions of euros)	As of January 1	Additions	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Internally generated intangible assets	740.6	59.9	(1.3)	11.3	—	3.5	814.0
Other intangible assets	2,522.9	75.0	(16.5)	69.6	392.6	(6.4)	3,037.2
TOTAL GROSS INTANGIBLE ASSETS	**3,263.5**	**134.9**	**(17.8)**	**80.9**	**392.6**	**(2.9)**	**3,851.2**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*

11.2. AMORTIZATION AND IMPAIRMENT LOSSES

2023 (in millions of euros)	As of January 1	Charge for the period	Impairment losses	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Internally generated intangible assets	(577.6)	(53.7)	(4.5)	2.7	6.8	—	(3.9)	(630.2)
Other intangible assets	(1,462.2)	(150.7)	(90.0)	13.3	26.6	—	3.7	(1,659.3)
TOTAL INTANGIBLE ASSET AMORTIZATION	**(2,039.8)**	**(204.4)**	**(94.5)**	**16.0**	**33.4**	**—**	**(0.2)**	**(2,289.5)**
TOTAL NET INTANGIBLE ASSETS [(b)]	**1,811.4**	**(11.4)** [(c)]	**(94.5)**	**(6.5)**	**(57.7)**	**0.7**	**(10.7)**	**1,631.3**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*
(b) *Other intangible assets mainly include trademarks and customer relationship valuation as part of business combination.*
(c) *This amount is the net of additions and charges for the period.*

2022 (in millions of euros)	As of January 1	Charge for the period	Impairment losses	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Internally generated intangible assets	(509.9)	(53.3)	(6.3)	0.6	(6.5)	—	(2.2)	(577.6)
Other intangible assets	(1,301.0)	(150.5)	(3.5)	13.8	(25.9)	—	4.9	(1,462.2)
TOTAL INTANGIBLE ASSET AMORTIZATION	**(1,810.9)**	**(203.8)**	**(9.8)**	**14.4**	**(32.4)**	**—**	**2.7**	**(2,039.8)**
TOTAL NET INTANGIBLE ASSETS [(b)]	**1,452.6**	**(68.9)** [(c)]	**(9.8)**	**(3.4)**	**48.5**	**392.6**	**(0.2)**	**1,811.4**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*
(b) *Other intangible assets mainly include trademarks and customer relationship valuation as part of business combination.*
(c) *This amount is the net of additions and charges for the period.*

As of December 31, 2023, the Group had no material commitment to acquire intangible assets and was not subject to any restrictions over the use of existing intangible assets.

Note 12 Property, plant and equipment

12.1. GROSS CARRYING AMOUNTS

2023 (in millions of euros)	As of January 1	Additions	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Land	474.0	—	(1.9)	(18.7)	0.1	9.8	463.3
Buildings	2,491.6	21.2	(32.0)	(75.7)	0.9	279.2	2,685.2
Equipment, cylinders, installations	42,138.2	382.8	(660.1)	(1,273.3)	4.5	2,079.4	42,671.5
Rights of use	1,954.1	180.3	(25.5)	(53.4)	0.9	20.8	2,077.2
TOTAL PROPERTY, PLANT AND EQUIPMENT IN SERVICE	**47,057.9**	**584.3**	**(719.5)**	**(1,421.1)**	**6.4**	**2,389.2**	**47,897.2**
Construction in progress	3,395.5	2,879.5		(149.0)	—	(2,328.3)	3,797.7
TOTAL PROPERTY, PLANT AND EQUIPMENT	**50,453.4**	**3,463.8**	**(719.5)**	**(1,570.1)**	**6.4**	**60.9**	**51,694.9**

(a) Other movements primarily include account reclassifications and changes in the scope of consolidation.

2022 (in millions of euros)	As of January 1	Additions	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [(a)]	As of December 31
Land	471.5	6.0	(17.6)	5.1	0.3	8.7	474.0
Buildings	2,286.3	13.3	(20.4)	36.3	1.5	174.6	2,491.6
Equipment, cylinders, installations	40,110.3	430.4	(545.9)	711.2	127.5	1,304.7	42,138.2
Rights of use	1,795.0	147.6	(10.2)	54.3	0.4	(33.0)	1,954.1
TOTAL PROPERTY, PLANT AND EQUIPMENT IN SERVICE	**44,663.1**	**597.3**	**(594.1)**	**806.9**	**129.7**	**1,455.0**	**47,057.9**
Construction in progress	3,178.3	2,775.9		59.4	86.6	(2,704.7)	3,395.5
TOTAL PROPERTY, PLANT AND EQUIPMENT	**47,841.4**	**3,373.2**	**(594.1)**	**866.3**	**216.3**	**(1,249.7)**	**50,453.4**

(a) Other movements primarily include account reclassifications and changes in the scope of consolidation.

Purchases of property, plant and equipment and intangible assets presented in the consolidated statement of cash flows relate to the increase in property, plant and equipment and intangible assets adjusted for the change in the fixed asset suppliers' balance during the current year.

12.2. DEPRECIATION AND IMPAIRMENT LOSSES

2023 *(in millions of euros)*	As of January 1	Charge for the period	Impairment losses	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [a]	As of December 31
Buildings	(1,280.2)	(98.9)	—	33.1	33.2	—	14.3	(1,298.5)
Equipment, cylinders, installations	(24,756.7)	(1,948.1)	(296.1)	548.3	592.0	—	30.7	(25,829.9)
Rights of use	(769.6)	(239.3)	(1.9)	24.7	19.8	—	52.0	(914.3)
TOTAL PROPERTY, PLANT AND EQUIPMENT DEPRECIATION	**(26,806.5)**	**(2,286.3)**	**(298.0)**	**606.1**	**645.0**	**—**	**97.0**	**(28,042.7)**
TOTAL PROPERTY, PLANT AND EQUIPMENT, NET	**23,646.9**	**1,177.5** [b]	**(298.0)**	**(113.4)**	**(925.1)**	**6.4**	**157.9**	**23,652.2**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*
(b) *This amount is the net of additions and charges for the period.*

2022 *(in millions of euros)*	As of January 1	Charge for the period	Impairment losses	Disposals	Foreign exchange differences	Acquisitions related to business combinations	Other movements [a]	As of December 31
Buildings	(1,189.7)	(92.1)		15.4	(10.4)	—	(3.4)	(1,280.2)
Equipment, cylinders, installations	(23,489.5)	(1,939.4)	(395.8)	429.9	(331.2)	—	969.3	(24,756.7)
Rights of use	(630.7)	(238.6)	9.5	8.8	(16.0)	—	97.4	(769.6)
TOTAL PROPERTY, PLANT AND EQUIPMENT DEPRECIATION	**(25,309.9)**	**(2,270.1)**	**(386.3)**	**454.1**	**(357.6)**	**—**	**1,063.3**	**(26,806.5)**
TOTAL PROPERTY, PLANT AND EQUIPMENT, NET	**22,531.5**	**1,103.1** [b]	**(386.3)**	**(140.0)**	**508.7**	**216.3**	**(186.4)**	**23,646.9**

(a) *Other movements primarily include account reclassifications and changes in the scope of consolidation.*
(b) *This amount is the net of additions and charges for the period.*

The charge for the period corresponds to the increase in depreciation, net of investment grants released to the income statement.

12.3. MATURITY OF LEASE LIABILITY

The maturity of the lease liabilities related to rights-of-use is as follows:

2023 *(in millions of euros)*	Carrying amount	Maturity								
			≥ 1 year and ≤ 5 years				> 5 years			
		< 1 year	2025	2026	2027	2028	2029	2030	2031	> 2031
Non-current lease liabilities	1,046.3		226.5	156.8	129.5	103.3	88.6	80.4	45.9	215.3
Current lease liabilities	219.7	219.7								
TOTAL LEASE LIABILITIES	**1,266.0**	**219.7**	**226.5**	**156.8**	**129.5**	**103.3**	**88.6**	**80.4**	**45.9**	**215.3**

2022 *(in millions of euros)*	Carrying amount	Maturity								
			≥ 1 year and ≤ 5 years				> 5 years			
		< 1 year	2024	2025	2026	2027	2028	2029	2030	> 2030
Non-current lease liabilities	1,052.2		242.8	158.6	126.5	104.9	75.6	71.0	64.9	207.9
Current lease liabilities	227.6	227.6								
TOTAL LEASE LIABILITIES	**1,279.8**	**227.6**	**242.8**	**158.6**	**126.5**	**104.9**	**75.6**	**71.0**	**64.9**	**207.9**

Note 13 Non-current financial assets

(in millions of euros)	2022	2023
Non-consolidated investments	414.8	335.2
Loans	75.0	44.7
Other long-term receivables	224.9	246.8
Employee benefits	60.8	70.0
NON-CURRENT FINANCIAL ASSETS	**775.5**	**696.7**

Non-consolidated investments include fully-depreciated shares in Russian entities. As of December 31, 2023, given the geopolitical context and reinforced sanctions and counter-sanctions, the Group continues to consider that it no longer has control of its activities in Russia since September 1, 2022.

Variation in non-consolidated investments is mainly explained by a disposal which occured during the first semester of the year.

Note 14 Investments in equity affiliates

14.1. FINANCIAL INFORMATION RELATED TO JOINT VENTURES AND ASSOCIATES

Group share of associates and joint ventures as of December 31, 2023 (in millions of euros)	Share of profit for the period	Share of equity [(a)]	Share of net income and gains and losses recognized directly in equity [(b)]
Joint ventures	14.4	139.3	10.3
Associates	(9.5)	40.8	12.0
TOTAL	**4.9**	**180.1**	**22.3**

(a) *Including goodwill relating to associates and joint ventures.*
(b) *The share of net income and gains and losses recognized directly in equity primarily comprises the translation reserves.*

Group share of associates and joint ventures as of December 31, 2022 (in millions of euros)	Share of profit for the period	Share of equity [(a)]	Share of net income and gains and losses recognized directly in equity [(b)]
Joint ventures	9.9	135.7	16.9
Associates	(8.8)	50.0	12.2
TOTAL	**1.1**	**185.7**	**29.1**

(a) *Including goodwill relating to associates and joint ventures.*
(b) *The share of net income and gains and losses recognized directly in equity primarily comprises the translation reserves.*

14.2. MOVEMENTS DURING THE YEAR

(in millions of euros)	As of January 1	Share of profit for the period	Dividend distribution	Foreign exchange differences	Other movements	As of December 31
2022	158.0	1.1	(13.8)	4.1	36.3	185.7
2023	**185.7**	**4.9**	**(14.5)**	**(6.8)**	**10.8**	**180.1**

No companies consolidated under equity method is individually significant.

Note 15 Deferred taxes

15.1. DEFERRED TAX ASSETS

The change in deferred tax assets over the fiscal year is as follows:

(in millions of euros)	2022	2023
AS OF JANUARY 1	**239.3**	**232.3**
Income (charge) to the income statement	40.3	25.1
Income (charge) to equity [(a)]	(28.7)	1.0
Changes related to scope	0.3	0.4
Foreign exchange differences	(2.4)	(0.4)
Others [(b)]	(16.5)	(33.2)
AS OF DECEMBER 31	**232.3**	**225.2**

(a) Relates to deferred taxes recognized in other items in the statement of net income and gains and losses recognized directly in equity: -1.9 million euros relate to changes in the fair value of derivatives and non-consolidated investments and +2.9 million euros relate to actuarial gains and losses. In 2022, the respective effects amounted to +18.0 million euros relating to changes in the fair value of derivatives and non-consolidated investments and -46.7 million euros relating to actuarial gains and losses.

(b) Other movements primarily include reclassifications between accounts.

As of December 31, 2023, unrecognized deferred tax assets amounted to 54.2 million euros (104.0 million euros as of December 31, 2022).

15.2. DEFERRED TAX LIABILITIES

The change in deferred tax liabilities over the fiscal year is as follows:

(in millions of euros)	2022	2023
AS OF JANUARY 1	**2,126.8**	**2,465.4**
Charge (income) to the income statement	142.8	(25.3)
Charge (income) to equity [(a)]	43.1	(16.8)
Changes related to scope	94.9	(0.3)
Foreign exchange differences	82.4	(74.1)
Others [(b)]	(24.6)	(19.9)
AS OF DECEMBER 31	**2,465.4**	**2,329.0**

(a) Relates to deferred taxes recognized in other items in the statement of net income and gains and losses recognized directly in equity: -1.2 million euros relate to changes in the fair value of derivatives and non-consolidated investments and -15.6 million euros relate to actuarial gains and losses. In 2022, the respective effects amounted to -0.8 million euros relating to changes in the fair value of derivatives and non-consolidated investments and +43.9 million euros relating to actuarial gains and losses.

(b) Other movements primarily include reclassifications between accounts.

15.3. DEFERRED TAXES BY NATURE

The net deferred taxes are broken down as follows:

(in millions of euros)	2022	2023
Amortization/depreciation	(2,342.8)	(2,418.9)
Provisions, pensions and other employee benefits	145.2	162.1
Other provisions	302.0	332.5
Tax loss carryforwards	51.1	114.4
Other	(388.6)	(293.9)
TOTAL	**(2,233.1)**	**(2,103.8)**

Note 16 Inventories and work-in-progress

(in millions of euros)	2022	2023
Raw materials and supplies	567.2	614.4
Finished and semi-finished goods	1,251.9	1,242.9
Work-in-progress	141.9	170.3
NET INVENTORIES	**1,961.0**	**2,027.6**

(in millions of euros)	2022	2023
Write-down of inventories	(30.8)	(20.2)
Reversals of write-down	17.7	24.6
NET WRITE-DOWN RECOGNIZED IN THE INCOME STATEMENT	**(13.1)**	**4.4**

Note 17 Trade receivables and other operating receivables

(in millions of euros)	2022	2023
Trade and other operating receivables	3,258.5	3,225.5
Provisions for impairment	(223.7)	(231.8)
TRADE RECEIVABLES	**3,034.8**	**2,993.7**

Trade and other operating receivables include gross amounts relating to Engineering & Construction contracts for 104.6 million euros (112.9 million euros as of December 31, 2022).

As of December 31, 2023, cumulative revenue recognized using the percentage of completion method and cumulative cash in since the beginning of the ongoing projects amounted respectively to 1,992.7 million euros (1,537.5 million euros as of December 31, 2022) and 2,076.9 million euros (1,575.9 million euros as of December 31,2022).

17.1. BREAKDOWN OF TRADE AND OTHER OPERATING RECEIVABLES

As of December 31, 2023, the breakdown of receivables and associated impairment is as follows:

2023 *(in millions of euros)*	Total	Not yet due	Overdue 0-1 month	Overdue 1-3 months	Overdue 3-6 months	Overdue 6-12 months	Overdue > 12 months	Overdue Total
Trade and other operating receivables	3,225.5	2,432.9	253.4	148.0	117.4	88.1	185.7	792.6
Provisions for impairment	(231.8)	(6.1)	(11.9)	(8.3)	(12.4)	(16.9)	(176.2)	(225.7)
TRADE RECEIVABLES	**2,993.7**	**2,426.8**	**241.5**	**139.7**	**105.0**	**71.2**	**9.5**	**566.9**

As of December 31,2022, the breakdown of receivables and associated impairment is as follows:

2022 *(in millions of euros)*	Total	Not yet due	Overdue 0-1 month	Overdue 1-3 months	Overdue 3-6 months	Overdue 6-12 months	Overdue > 12 months	Overdue Total
Trade and other operating receivables	3,258.5	2,504.8	266.5	158.0	95.0	74.2	160.0	753.7
Provisions for impairment	(223.7)	(8.7)	(11.1)	(8.8)	(8.4)	(26.8)	(159.9)	(215.0)
TRADE RECEIVABLES	**3,034.8**	**2,496.1**	**255.4**	**149.2**	**86.6**	**47.4**	**0.1**	**538.7**

The accounting principles relating to trade receivables impairment (expected credit losses) are described in section 6.b of the accounting principles.

17.2. PROVISION FOR IMPAIRMENT

(in millions of euros)	As of January 1	Charges	Reversals	Foreign exchange differences	Other movements	As of December 31
2022	(197.6)	(76.9)	39.0	(1.1)	12.9	(223.7)
2023	**(223.7)**	**(65.2)**	**49.6**	**2.3**	**5.2**	**(231.8)**

17.3. INFORMATION RELATING TO NON-RECOURSE ASSIGNMENTS OF TRADE RECEIVABLES

Non-recourse factored receivables in Europe, in Asia and in the Americas, amounted to 1,392.6 million euros in 2023 compared to 1,567.4 million euros at the end of 2022.

The European program, set up in 2015 and renewed in 2020 was amended on July 2023 to change its coverage to 600 million euros (654 million euros including 9% of deferred purchase price). Its maturity is February 28, 2026. The assigned receivables, in the amount of 572 million euros, were derecognized as of December 31, 2023 (671 million euros as of December 31, 2022).

The American program held by Airgas and set up in December 2018, was renewed on December 2022 with a maturity on December 2025. As of December 31, 2023, the program covers 800 million US dollars (724 million euros) and 671 million US dollars (607 million euros) were derecognized.

Other non-recourse factoring programs exist in various countries and activities, mainly in Asia and Healthcare.

The Group has analyzed the main characteristics of these programs according to the principles described in section 6.b of the accounting principles and concluded that almost all the risks and rewards were transferred to the assignees.

Note 18 Working capital requirement

The increase in working capital requirement by +154.4 million euros, disclosed in the consolidated cash flow statement, mainly comes from the increase in working capital requirement excluding tax for +340.1 million euros, partially offset by a positive effect of -185.7 million euros mainly due tax reimbursements.

Note 19 Other current assets

(in millions of euros)	**2022**	**2023**
Advances and down-payments made	197.1	162.3
Prepaid expenses	156.2	165.9
Other sundry current assets	632.1	534.5
OTHER CURRENT ASSETS	**985.4**	**862.7**

Other sundry current assets mainly include tax receivables.

Note 20 Cash and cash equivalents

(in millions of euros)	**2022**	**2023**
Short-term loans	35.3	26.1
Short-term marketable securities	267.0	200.7
Cash in bank	1,609.1	1,398.1
CASH AND CASH EQUIVALENTS	**1,911.4**	**1,624.9**

As of December 31, 2023, cash and cash equivalents include 146 million euros subject to restrictions (155 million euros as of December 31, 2022), mainly in three countries: in Luxembourg (regulatory restrictions relating to the Group’s captive reinsurance company), in Argentina and in Egypt (because of effective exchange control regulations in place).

Furthermore, 83 million euros of cash and cash equivalents are held in countries in which a prior authorization is necessary to transfer funds abroad. These liquidities are at the Group’s disposal within a reasonable time period, if preliminary formalities are respected. This amount stood at 63 million euros as of December 31, 2022.

Note 21 Shareholders' equity

21.1. SHARES

Number of shares

	2022	2023
NUMBER OF SHARES AS OF JANUARY 1	475,291,037	523,450,271
Free share attribution	48,905,499	—
Capital increase reserved for employees	—	746,401
Options exercised during the period	352,635	440,106
Cancellation of treasury shares	(1,098,900)	(120,000)
NUMBER OF SHARES AS OF DECEMBER 31	523,450,271	524,516,778

Shares have a par value of 5.50 euros each and are all issued and fully paid-up.

In 2023, a total of 541,600 shares were repurchased (net of disposals).

21.2. SHARE CAPITAL INCREASE RESERVED FOR EMPLOYEES

On July 26, 2023, the Board of Directors decided to proceed to a capital increase reserved for employees of Group companies belonging to the France Group savings plan or the Air Liquide International Group savings plan.

Under the authority conferred to him by the Board of Directors at its meetings held on July 26, 2023, the share capital increase was acknowledged by the Chief Executive Officer on December 7, 2023.

The subscription price was 126.49 euros for all employees, with the exception of employees of Group's subsidiaries located in the US, for which the subscription price was 134.40 euros.

A total of 746,401 Air Liquide shares were purchased, for an amount raised of 95.0 million euros, including a share premium of -2.8 million euros.

The Group savings plan are recorded in profit or loss and measured in accordance with IFRS 2 “Share-based Payment” based on the following assumptions:

- a two-week subscription period;
- a five-year lock-in period from the end of the subscription period in accordance with the French legislation.

With respect to the Group's savings plan, the expense recorded in 2023 pursuant to IFRS 2 “Share-based Payment” amounted to 30.5 million euros thereof 4.1 million euros came from the contribution granted by certain Group subsidiaries. The expense recorded takes into account the five-year lock-in period.

This expense is recorded in “Other operating expenses”.

21.3. CAPITAL DECREASE

Under the authority of the 18th resolution adopted by the Annual General Meeting held on May 3, 2023, the Board of Directors of September 28, 2023, carried out the capital decrease of 660,000.00 euros to bring the capital back from 2,878,976,490.50 euros to 2,878,316,490.50 euros by cancelling 120,000 shares.

21.4. COMPANY TREASURY SHARES

Treasury shares are Air Liquide shares held by the Group, including shares which are part of the liquidity contract, compliant with an Ethics Charter recognized by the French financial markets authority (Autorité des marchés financiers). As of December 31, 2023, the Group held 1,363,694 treasury shares (1,223,450 as of December 31, 2022) including 2,100 treasury shares under a liquidity contract (10,500 as of December 31, 2022). Changes in the number of treasury shares are explained in the consolidated statement of changes in equity.

21.5. SHARE-BASED PAYMENTS

Share subscription option plans

Pursuant to the decisions of the Board of Directors, following the approval by the Annual General Meeting and based on the recommendations of the Remuneration Committee, the Company had adopted share subscription option plans for some of the senior executives of the Company and its subsidiaries worldwide, as well as corporate officers.

Stock options are granted for a minimum price which cannot be lower than the average closing market price over the 20 trading days preceding the grant date. Options granted since October 14, 2011 must be exercised within 10 years. A four-year vesting period applies to stock options granted.

As of December 31, 2023, the number of outstanding share options granted by the Board of Directors under the plans approved by Annual General Meetings amounted to 894,980 options after adjustment (average price of 73.91 euros), or 0.17% of share capital.

Out of the total number of options issued pursuant to the approval by the Annual General Meeting on May 3, 2023, 10,490,336 options were retained for possible grant by the Board of Directors as of December 31, 2023.

Performance shares plans

An additional compensation system involving performance shares was set up in 2008 as a way to reward best employees and associate their medium-term performance with the Company’s objectives.

The 21st resolution adopted by the Extraordinary Annual General Meeting held on May 4, 2022 authorizes the Board of Directors to grant free shares to Group employees, up to a maximum of 0.5% of the Company’s share capital over a 38-month period. As part of this maximum attribution, free shares representing up to 0.1% of the Group’s share capital can be granted to corporate officers over the same period.

Under this authority, the Board of Directors adopted two different general regulations on September 28, 2023 (“France” Plan and “World” Plan) governing the attribution of performance shares to beneficiaries determined by the Board of Directors. The differences between the “France” and “World” Plans mainly refer to the number of years of service required – paragraph a) below, and to the correlative absence of any holding requirement for the “World” Plan – paragraph c) below.

The granted shares shall be either shares issued through a capital increase performed by the Company by no later than the definitive vesting date or shares bought back by the Company on the market prior to such date.

To date, performance shares granted are treasury shares bought back as part of the Company’s shares buyback program.

The granted shares shall be of the same nature and category as those making up the Company’s share capital at the date on which the plans are approved by the Board of Directors.

On September 28, 2023, the Board of Directors decided to grant 341 249 performance shares to employees (2,637 beneficiaries).

Performance shares are subject to:

a) a continued service requirement during the vesting period: the shares granted to a beneficiary shall only finally vest if he or she has been an employee or corporate officer of a Group company during a vesting period, calculated as from the grant date, of three years for “France” Plan beneficiaries and four years for “World” Plan beneficiaries. In the event of retirement, the beneficiary retains his rights, being no longer required to satisfy the continued service requirement;

b) performance requirements for all performance shares allocated to all beneficiaries;

c) a holding requirement for performance shares: as from the final grant date, the beneficiaries of the “France” Plan are required to hold their shares for two additional years during which such shares may not be transferred (except in the event of disability or death).

Options granted to the ten employees of the Company and its subsidiaries (excluding corporate officers) who were attributed the highest number of options

In 2023, no options have been granted.

Options exercised in 2023 by the ten employees of the Company and its subsidiaries (excluding corporate officers) with the highest number of options exercised

Grant date	Number of options exercised	Average price *(in euros)* [(a)]
09/26/2013	103,640	67.15
09/22/2014	35,122	70.42
09/28/2015	10,229	76.23
11/29/2016	891	69.33
TOTAL	**149,882**	**68.55**

(a) Historical data.

Options exercised in 2022 by the ten employees of the Company and its subsidiaries (excluding corporate officers) with the highest number of options exercised

Grant date	Number of options exercised	Average price *(in euros)* [(a)]
09/27/2012	36,889	69.92
09/26/2013	31,538	68.71
09/22/2014	19,270	75.31
09/28/2015	3,747	81.46
11/29/2016	76	69.33
TOTAL	**91,520**	**71.11**

(a) Historical data.

Number of share subscription options and weighted average strike price

	2022		2023	
	Options	Weighted average strike price *(in euros)*	Options	Weighted average strike price *(in euros)*
Total number of options outstanding as of January 1 (adjusted number and price)	**1,700,972**	**71.39**	**1,340,889**	**72.38**
Options exercised during the period (adjusted number and price)	352,635	71.14	440,106	69.28
Options canceled during the period (adjusted number and price)	7,448	72.43	5,803	71.92
Total number of options as of December 31 (adjusted number and price)	**1,340,889**	**72.38**	**894,980**	**73.91**
Of which total number of options eligible for exercise	***1,340,889***	***72.38***	***894,980***	***73.91***

Information on the fair value of share subscription options and attribution of performance shares

Share subscription options

No options have been granted in 2022 and 2023.

Attribution of performance shares

The fair value of performance shares attributed to employees depends for 50% on performance conditions linked to the Group's results, 40% on Shareholder's return and 10% on the reduction in Air Liquide's carbon intensity.

The achievement of performance conditions linked with Group result together with the achievement of performance condition linked to the carbon intensity reduction are not considered as underlying assumptions and were deemed to have been fully achieved at the valuation date.

	2022		2023	
	Plan 1 [(a)]		Plan 1 [(a)]	
	09/29/2022		09/28/2023	
	France	Outside of France	France	Outside of France
Duration of performance shares	5 years	4 years	5 years	4 years
Fair value of performance shares *(in euros)*	98.26	94.72	136.87	135.26

(a) Fair value at the attribution date, not restated for the effect of the later share capital increase with preferential subscription rights in the market and attributions of free shares.

An expense of 39.6 million euros (excluding taxes) relating to the attribution of performance shares was recognized in the income statement in 2023 compared to 36.9 million euros in 2022 (which also included an expense relating to share subscription options). The corresponding entry is recorded in equity.

Note 22 Provisions, pensions and other employee benefits

2023 *(in millions of euros)*	**As of January 1**	**Increase**	**Utilized**	**Other reversals**	**Discounting**	**Foreign exchange differences**	**Acquisitions related to business combination**	**Other movements [(a)]**	**As of December 31**
Pensions and other employee benefits	1,091.4	61.5	(96.5)		98.0	(7.9)		(16.7)	1,129.8
Restructuring plans	15.8	73.1	(8.9)	(0.4)		(0.8)		4.9	83.7
Guarantees and other provisions related to engineering contracts	185.6	52.5	(41.9)	(12.8)	0.1	(1.6)		(3.5)	178.4
Dismantling	259.9	1.0	(8.5)	(1.4)	7.7	(5.8)		20.6	273.5
Provisions and contingent liabilities as part of a business combination	164.9	14.0	(13.6)	(24.0)	1.6	(5.5)	0.5	(7.8)	130.1
Other provisions	555.9	190.5	(115.2)	(45.7)	1.6	(3.3)	0.2	(10.9)	573.1
TOTAL PROVISIONS	**2,273.5**	**392.6**	**(284.6)**	**(84.3)**	**109.0**	**(24.9)**	**0.7**	**(13.4)**	**2,368.6**

(a) Other movements correspond to account reclassifications, changes in scope of consolidation and provisions for dismantling, with no impact on the consolidated cash flow statement.

2022 *(in millions of euros)*	**As of January 1**	**Increase**	**Utilized**	**Other reversals**	**Discounting**	**Foreign exchange differences**	**Acquisitions related to business combination**	**Other movements [(a)]**	**As of December 31**
Pensions and other employee benefits	1,437.0	41.2	(89.8)		(286.6)	3.2	0.2	(13.8)	1,091.4
Restructuring plans	24.2	14.0	(18.3)	(0.7)		(0.1)		(3.3)	15.8
Guarantees and other provisions related to engineering contracts	89.1	145.4	(41.0)	(8.3)		(0.7)		1.2	185.6
Dismantling	274.5		(3.8)	(5.5)	6.8	2.9		(15.0)	259.9
Provisions and contingent liabilities as part of a business combination	190.8	0.8	(16.5)	(25.4)	1.8	10.3	3.2		164.9
Other provisions	585.7	141.5	(83.9)	(65.1)	1.5	5.7	0.2	(29.6)	555.9
TOTAL PROVISIONS	**2,601.3**	**342.9**	**(253.3)**	**(105.0)**	**(276.5)**	**21.3**	**3.6**	**(60.5)**	**2,273.5**

(a) Other movements correspond to account reclassifications, changes in scope of consolidation and provisions for dismantling, with no impact on the consolidated cash flow statement.

In the normal course of its operations, the Group is party to arbitration, judicial or administrative proceedings. The potential costs of such proceedings are provided for, when they are probable, only if the amount can be quantified or estimated within a reasonable range. In the latter case, the amount provided for represents the best estimate of the Group's management. Provisions are determined based on a case-by-case risk assessment and events occurring during ongoing proceedings may result in a risk reappraisal at any time. These litigations are by nature diverse and involve various Group subsidiaries. Provisions recorded with respect to all Group litigations amounted to 138 million euros as of December 31, 2023 (185.8 million euros as of December 31, 2022) and are presented in "Other provisions". They include provisions for industrial disputes and for tax risks, excluding income taxes, respectively for 97.5 and 40.5 million euros.

The Group does not provide the detail of these provisions, considering that disclosing the amount provided for each individual litigation could be prejudicial to the Group. Nevertheless, no single litigation is likely to have a material effect on the Group's financial position or its profitability.

Note 23 Employee benefit obligations

23.1. PENSION PLANS

The most significant pension plans relate to France, Germany and the United States.

In France, Air Liquide provides an additional retirement benefit based on the final salary which is paid in addition to other normal pension plans. On December 31, 1995, this plan was closed to employees under age 45 or with less than 20 years of service as of January 1, 1996; the latter being covered by a defined contribution plan. This plan is unfunded. The annual amounts paid with regards to additional benefits cannot exceed a threshold set originally at 12% of total payroll or 12% of pre-tax profits of companies involved. This 12% threshold will be proportionately reduced by comparing the number of plan beneficiaries for the year to the number of plan beneficiaries for the previous year. In 2017, this additional benefit was funded subsequently to the Article 50 of the law of January 20, 2014 securing the future and fairness of pensions plans.

Additionally, changes to retirement age assumptions in France following the 2023 reform do not have any significant impact for the Group.

IAS 19 “Employee Benefits” provides a very restrictive definition of defined contribution plans; any plans not complying fully with the conditions required are defined benefit plans by default.

This restrictive definition of defined contribution plans requires Air Liquide to account for these additional benefits as a defined benefit plan in spite of the limited obligations for the Company and the nature of the obligations not being stable or continuous.

The qualification as a defined benefit plan results in the recognition of a provision with regards to the future obligations.

With the Company’s obligations being limited, the valuation of what will actually be paid to retirees is uncertain. Since the effect of this threshold cannot be measured reliably, the provision recognized represents the actuarial value of the amounts to be paid out to retirees until the plan is closed, excluding any potential threshold effect. The additional retirement benefit paid by Air Liquide is aligned with the indexation of French statutory and supplementary pension plans up to a maximum annuity. Any additional annuity will not be subject to any indexation.

In Germany, there are two main Air Liquide pension plans.

The first plan provides the retirees of Lurgi (Engineering & Construction activity) with a lifetime annuity, based on the income and length of service vested in the plan at the time of retirement, the normal retirement age being 65. The plan also provides disability and widowhood pensions. This plan is now closed to new entrants, the latter benefiting from a defined contribution plan.

The second plan is an old plan covering employees of the Gas & Services activities. The plan provides a lifetime annuity, based on the average income earned over the employee’s career and the length of service vested at the time of retirement, the normal retirement age being 65. The plan also provides disability, pre-retirement and widowhood pensions. It is now closed to new entrants, with new employees benefiting from another defined benefit plan. Providing a minimum length of service of ten years, the plan provides a lifetime annuity based on the average income earned over the employee’s career and the length of service vested at the time of retirement, the normal retirement age being 65. The plan also provides disability, pre-retirement and widowhood pensions.

In accordance with common market practice in Germany, limited funding contributions are made to pension funds as both plans are mainly managed internally.

In the United States, Air Liquide grants retirees supplemental benefits in addition to the normal pension plans. The US plan provides a traditional final average pay benefit to those who continue to accrue benefits. A retiring employee may elect to receive their pension benefit as a lump sum or a lifetime annuity. This plan was closed to new participants in 2004 and was frozen in 2016. Therefore, employees who joined the Company before 2004 are no longer acquiring new rights on this defined benefit plan, but benefit from the defined contribution plan that has been opened since 2004 to new employees.

A new plan was implemented on January 1, 2017 (Supplemental Saving plan). This plan comes on top of the basic savings plan offering additional retirement benefits beyond the tax limit of the basic plan. It represents an annual cost of around 6 million US dollars.

23.2. OBLIGATIONS

Group obligations related to pension plans and similar benefits as of December 31, 2023 are shown below:

2023 *(in millions of euros)*	Defined benefit plans	Retirement termination payments	Other long term benefits	Medical Plans	Total
A. Change in net liabilities					
Net liabilities at the beginning of the period	(839.8)	(145.4)	(18.2)	(27.1)	(1,030.5)
(Acquisition) divestiture/transfer	(3.2)	(2.8)			(6.0)
(Expense) income recognized	(48.1)	(1.8)	(4.8)	(0.9)	(55.6)
Employer contributions	82.4	3.5	3.6	2.2	91.7
Gains (losses) for the period	(53.3)	(15.6)		0.1	(68.8)
Exchange rate movements	6.0	3.4	(0.3)	0.4	9.5
Net liabilities at the end of the period	**(856.0)**	**(158.7)**	**(19.7)**	**(25.3)**	**(1,059.7)**
B. Expense recorded in 2023					
Service cost	20.1	2.8	2.7	0.1	25.7
Interest expense on the net defined benefit liability	28.0	5.5	0.8	0.8	35.1
Actuarial (gains) losses			1.3		1.3
Curtailment / settlement	—	(6.5)	—	—	(6.5) (a)
Expense (income) recognized	**48.1**	**1.8**	**4.8**	**0.9**	**55.6**
C. Change in present value of obligations in 2023					
DBO at the beginning of the period	1,824.5	145.6	18.7	27.2	2,016.0
Acquisition (divestiture) / transfer	3.2	2.8			6.0
Service cost	20.1	2.8	2.7	0.1	25.7
Interest cost	69.7	5.5	0.8	0.8	76.8
Employee contributions	2.1				2.1
Curtailment / settlement		(6.5)			(6.5) (a)
Benefit payments	(148.5)	(3.4)	(2.1)	(2.2)	(156.2)
Actuarial (gains) losses	112.7	15.6	1.3	(0.1)	129.5
Exchange rate movements	(13.8)	(3.5)	0.2	(0.3)	(17.4)
Obligations at the end of the period	**1,870.0**	**158.9**	**21.6**	**25.5**	**2,076.0**
D. Change in plan assets in 2023					
Fair value of assets at the beginning of the period	1,031.9	0.2	0.4	0.2	1,032.7
Acquisition (divestiture) / transfer					0.0
Actual return on plan assets	54.7	(0.1)			54.6
Employer contributions	5.3	0.2	1.4		6.9
Employee contributions	2.1				2.1
Benefit payments	(71.5)	(0.1)			(71.6)
Exchange rate movements	(8.2)		0.1		(8.1)
Fair value of assets at the end of the period	**1,014.3**	**0.2**	**1.9**	**0.2**	**1,016.6**
E. Funded status at the end of 2023					
Present value of obligations	(1,870.0)	(158.9)	(21.6)	(25.5)	(2,076.0)
Fair value of plan assets	1,014.3	0.2	1.9	0.2	1,016.6
Surplus management reserve	(0.3)				(0.3)
Net liabilities	**(856.0)**	**(158.7)**	**(19.7)**	**(25.3)**	**(1,059.7)**
F. Actuarial (gains) and losses recognized directly in equity					
(Gains) and losses at the beginning of the period	934.6	(9.4)	0.1	(1.5)	923.8
(Gains) and losses on obligations	112.7	15.6		(0.1)	128.2
(Gains) and losses on plan assets	(13.0)	0.1			(12.9)
Change in surplus management reserve	(46.4)				(46.4)
Exchange rate movements	(12.0)	(2.8)		0.1	(14.7)
(Gains) and losses at the end of the period (b)	**975.9**	**3.5**		**(1.5)**	**977.9**

(a) Past service costs and plan amendments mainly relate to pension plans in France.
(b) Losses (gains), net of tax, recognized in equity, amounted to 726 million euros as of December 31, 2023.

Group obligations related to pension plans and similar benefits as of December 31, 2022 are shown below:

2022 *(in millions of euros)*	**Defined benefit plans**	**Retirement termination payments**	**Other long term benefits**	**Medical Plans**	**Total**	
A. Change in net liabilities						
Net liabilities at the beginning of the period	(1,124.3)	(198.3)	(21.9)	(34.2)	(1,378.7)	
(Acquisition) divestiture/transfer	(1.4)				(1.4)	
(Expense) income recognized	(26.9)	(14.5)	2.0	(1.0)	(40.4)	
Employer contributions	76.9	9.2	1.8	2.1	90.0	
Gains (losses) for the period	241.4	56.9		6.2	304.5	
Exchange rate movements	(5.5)	1.3	(0.1)	(0.2)	(4.5)	
Net liabilities at the end of the period	**(839.8)**	**(145.4)**	**(18.2)**	**(27.1)**	**(1,030.5)**	
B. Expense recorded in 2022						
Service cost	19.8	12.8	2.1	0.5	35.2	
Interest expense on the net defined benefit liability	7.0	1.6	0.1	0.5	9.2	
Past service cost	0.1	0.1	0.1		0.3	(a)
Actuarial (gains) losses			(4.3)		(4.3)	
Expense (income) recognized	**26.9**	**14.5**	**(2.0)**	**1.0**	**40.4**	
C. Change in present value of obligations in 2022						
DBO at the beginning of the period	2,428.0	198.6	21.9	34.4	2,682.9	
Acquisition (divestiture) / transfer	1.4				1.4	
Service cost	19.8	12.8	2.1	0.5	35.2	
Interest cost	30.8	1.6	0.1	0.5	33.0	
Employee contributions	2.2				2.2	
Plan amendments	0.1	0.1	0.1		0.3	(a)
Benefit payments	(178.4)	(9.2)	(1.3)	(2.1)	(191.0)	
Actuarial (gains) losses	(526.5)	(57.1)	(4.3)	(6.2)	(594.1)	
Exchange rate movements	47.1	(1.2)	0.1	0.1	46.1	
Obligations at the end of the period	**1,824.5**	**145.6**	**18.7**	**27.2**	**2,016.0**	
D. Change in plan assets in 2022						
Fair value of assets at the beginning of the period	1,303.7	0.3		0.2	1,304.2	
Acquisition (divestiture) / transfer						
Actual return on plan assets	(215.1)	(0.2)			(215.3)	
Employer contributions	7.8	0.1	0.4		8.3	
Employee contributions	2.2				2.2	
Benefit payments	(109.3)				(109.3)	
Exchange rate movements	42.6				42.6	
Fair value of assets at the end of the period	**1,031.9**	**0.2**	**0.4**	**0.2**	**1,032.7**	
E. Funded status at the end of 2022						
Present value of obligations	(1,824.4)	(145.6)	(18.7)	(27.3)	(2,016.0)	
Fair value of plan assets	1,031.9	0.2	0.4	0.2	1,032.7	
Surplus management reserve	(47.3)		0.1		(47.2)	
Net liabilities	**(839.8)**	**(145.4)**	**(18.2)**	**(27.1)**	**(1,030.5)**	
F. Actuarial (gains) and losses recognized directly in equity						
(Gains) and losses at the beginning of the period	1,151.8	48.1		4.7	1,204.6	
Acquisition (divestiture) / transfer	0.6	0.1			0.7	
(Gains) and losses on obligations	(526.5)	(57.1)		(6.2)	(589.8)	
(Gains) and losses on plan assets	237.5	0.2			237.7	
Change in surplus management reserve	47.3				47.3	
Exchange rate movements	23.9	(0.7)	0.1		23.3	
(Gains) and losses at the end of the period (b)	**934.6**	**(9.4)**	**0.1**	**(1.5)**	**923.8**	

(a) Past service costs and plan amendments mainly relate to pension plans in France.
(b) Losses (gains), net of tax, recognized in equity, amounted to 687 million euros as of December 31, 2022.

The amounts mentioned above can be broken down as follows by geographical area as of December 31, 2023:

2023 *(in millions of euros)*	Obligations	Plan assets	Provisions in the balance sheet	Surplus management reserve
Europe / Africa	(1,304)	349	(955)	
Americas	(725)	630	(95)	
Asia-Pacific	(47)	37	(10)	
TOTAL	**(2,076)**	**1,016**	**(1,060)**	**—**

The amounts mentioned above can be broken down as follows by geographical area as of December 31, 2022:

2022 *(in millions of euros)*	Obligations	Plan assets	Provisions in the balance sheet	Surplus management reserve
Europe / Africa	(1,252)	338	(962)	47
Americas	(714)	651	(63)	—
Asia-Pacific	(50)	44	(6)	—
TOTAL	**(2,016)**	**1,033**	**(1,031)**	**47**

23.3. MAIN ASSUMPTIONS

The main discount rates used are as follows:

	2022	2023
Euro zone	3.8%	3.2%
Canada	5.0%	4.7%
Japan	1.4%	1.5%
Switzerland	2.2%	1.4%
United States	5.4%	5.0%
United Kingdom	4.8%	4.5%

Differences between expected returns on plan assets and the main discount rates are as follows:

2023	Expected return on assets [(a)]	Discount rate 2022	Impact *(in bp)*
Euro zone	2.5%	3.8%	130
Canada	6.5%	5.0%	(150)
Japan	2.3%	1.4%	(90)
Switzerland	5.3%	2.2%	(310)
United States	5.6%	5.4%	(20)
United Kingdom	4.9%	4.8%	(10)

(a) The expected return on long-term assets was determined by taking into account, in each country, the asset allocation in the portfolio.

2022	Expected return on assets [(a)]	Discount rate 2021	Impact *(in bp)*
Euro zone	2.5%	1.0%	(150)
Canada	6.6%	3.2%	(340)
Japan	2.5%	0.5%	(200)
Switzerland	5.1%	0.3%	(480)
United States	5.4%	2.8%	(260)
United Kingdom	3.7%	1.9%	(180)

(a) The expected return on long-term assets was determined by taking into account, in each country, the asset allocation in the portfolio.

23.4. BREAKDOWN OF GAINS AND LOSSES FOR THE PERIOD

(in millions of euros)	2022	2023
Experience gains and losses on present value of the obligation	(17)	31
Gains and losses on present value related to changes in assumptions	611	(161)
Experience gains and losses on fair value of assets	(238)	13

Breakdown of experience gains and losses on financial assets

2023 *(in millions of euros)*	Interest income on financial assets	Actual return on assets	Gains and losses on assets
Europe / Africa	10.2	8.4	(1.9)
Americas	30.8	48.0	17.3
Asia-Pacific	0.7	(1.8)	(2.5)
TOTAL	**41.7**	**54.6**	**12.9**

2022 *(in millions of euros)*	Interest income on financial assets	Actual return on assets	Gains and losses on assets
Europe / Africa	3.0	(57.6)	(60.6)
Americas	20.4	(158.2)	(178.5)
Asia-Pacific	0.3	0.6	1.4
TOTAL	**24.0**	**(215.0)**	**(237.7)**

23.5. PENSION PLAN RISK ANALYSIS

Sensitivity to movements in discount rates and other variables

The present value of obligations related to defined benefit plans is measured by discounting estimated future cash flows. Discount rates are determined based on Government bonds rates or, when the financial markets are sufficiently liquid, on "high-quality" corporate bond rates, which can vary from one period to another.

Changes in discount rates can materially change the present value of the Group's obligations and the expense recorded in the year.

The amount of obligations is affected to a lesser extent by revised wages and inflation indexes, as well as legal changes regarding retirement age or official mortality tables.

Impact of a -0.25% decrease in discount rates

	Impact on obligations as of December 31, 2023 *(in millions of euros)*	% of total obligations as of December 31, 2023
Europe / Africa	35	2.6%
Americas	16	2.3%
Asia-Pacific	2	3.2%
TOTAL	**53**	**2.5%**

	Impact on obligations as of December 31, 2022 *(in millions of euros)*	% of total obligations as of December 31, 2022
Europe / Africa	34	2.7%
Americas	17	2.4%
Asia-Pacific	1	1.9%
TOTAL	**52**	**2.6%**

Impact of a +0.25% increase in discount rates

	Impact on obligations as of December 31, 2023 *(in millions of euros)*	% of total obligations as of December 31, 2023
Europe / Africa	(34)	-2.5%
Americas	(16)	-2.3%
Asia-Pacific	(1)	-3.0%
TOTAL	**(51)**	**-2.4%**

	Impact on obligations as of December 31, 2022 *(in millions of euros)*	% of total obligations as of December 31, 2022
Europe / Africa	(32)	-2.5%
Americas	(16)	-2.3%
Asia-Pacific	(1)	-1.8%
TOTAL	**(49)**	**-2.4%**

Sensitivity of the value of plan assets to market conditions

For the Group's defined benefit plans subject to funding requirements, the fair value of plan assets is primarily dependent on interest rates, the performance of plan assets and amendments to local regulations. Any adverse change on these variables would require additional Group contributions to the pension funds on a timely basis.

Plan assets consist of shares, bonds and other assets whose value is generally subject to market fluctuations. A downturn in the financial markets would increase the net liabilities of defined benefit plans. The plans' coverage ratios would decrease accordingly, requiring additional Group contributions on a timely basis.

Within the Group, plan assets are piloted and managed at local level, especially through investment committees and monitoring of performance and allocations based on the social liabilities covered.

2023	Shares		Bonds		Real estate		Cash		Others		TOTAL	
(in millions euros)	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%
Europe / Africa	87	24.9%	60	17.2%	99	28.4%	5	1.4%	98	28.1%	349	100.0%
Americas	171	27.1%	406	64.4%	34	5.4%	10	1.6%	9	1.5%	630	100.0%
Asia-Pacific	5	13.5%	28	75.7%	—	0.0%	3	8.1%	1	2.7%	37	100.0%
TOTAL	**263**		**494**		**133**		**18**		**108**		**1,016**	

2022	Shares		Bonds		Real estate		Cash		Others		TOTAL	
(in millions euros)	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%	Amounts	%
Europe / Africa	71	21.0%	48	14.0%	97	29.0%	30	9.0%	91	27.0%	337	100.0%
Americas	221	34.0%	388	60.0%	42	6.0%	—	0.0%	—	0.0%	651	100.0%
Asia-Pacific	5	11.0%	35	79.0%	1	1.0%	3	6.0%	1	3.0%	45	100.0%
TOTAL	**297**		**471**		**140**		**33**		**92**		**1,033**	

Note 24 Borrowings

This note provides information on the breakdown of the Group's borrowings by instrument. For further information on financial instruments and the exposure to foreign exchange and interest rate risks, please refer to note 25.

Net debt calculation

(in millions of euros)	December 31, 2022	December 31, 2023
Non-current borrowings	(10,168.8)	(8,560.5)
Current borrowings	(2,003.9)	(2,285.3)
TOTAL GROSS DEBT	**(12,172.7)**	**(10,845.8)**
Cash and cash equivalents	**1,911.4**	**1,624.9**
TOTAL NET DEBT AT THE END OF THE PERIOD	**(10,261.3)**	**(9,220.9)**

Statement of changes in net debt

(en millions d'euros)	2022	2023
Net debt at the beginning of the period	**(10,448.3)**	**(10,261.3)**
Net cash flows from operating activities	5,810.1	6,263.0
Net cash flows used in investing activities	(3,241.9)	(3,079.0)
Net cash flows from (used in) financing activities excluding changes in borrowings	(1,927.2)	(2,041.6)
Total net cash flows	**641.0**	**1,142.4**
Effect of exchange rate changes, opening net debt of newly acquired companies and others	(248.0)	150.7
Adjustment of net finance costs	(206.0)	(252.7)
Change in net debt	**187.0**	**1,040.4**
TOTAL NET DEBT AT THE END OF THE PERIOD	**(10,261.3)**	**(9,220.9)**

The Air Liquide Group net debt breaks down as follows:

	2022			2023		
	Carrying amount			Carrying amount		
(in millions of euros)	Non-current	Current	Total	Non-current	Current	Total
Bonds and private placements	9,332.8	1,206.9	10,539.7	7,713.1	1,151.2	8,864.3
Commercial paper programs		130.6	130.6		398.8	398.8
Bank debt and other financial debt	760.5	665.1	1,425.6	813.4	695.1	1,508.5
Put options granted to minority shareholders	75.5	1.3	76.8	34.0	40.2	74.2
TOTAL BORROWINGS (A)	**10,168.8**	**2,003.9**	**12,172.7**	**8,560.5**	**2,285.3**	**10,845.8**
Short-term loans		35.3	35.3		26.1	26.1
Short-term marketable securities		267.0	267.0		200.7	200.7
Cash in bank		1,609.1	1,609.1		1,398.1	1,398.1
TOTAL CASH AND CASH EQUIVALENTS (B)		**1,911.4**	**1,911.4**		**1,624.9**	**1,624.9**
NET DEBT (A) - (B)	**10,168.8**	**92.5**	**10,261.3**	**8,560.5**	**660.4**	**9,220.9**

In accordance with the Group's policy to diversify funding sources, long-term bonds and private placements are the primary sources of funding and represent 82% of gross debt as of December 31, 2023. Outstanding notes under these sources amounted to 8,9 billion euros at the end of 2023.

The carrying amount of commercial paper amounted to 0.4 billion euros as of December 31, 2023, in increase by 0.3 billion euros compared to December 31, 2022.

Gross debt decreased by 1.3 billion euros. Bond debt decreased by 1.7 billion euros. Indeed, bond issues matured in 2023 or early redempted were only partially renewed. In addition, bank debt increased by 0.1 billion euros, mainly in China and Taiwan.

In 2023, one bond was issued by Air Liquide Finance, guaranteed by L'Air Liquide S.A.: a private placement issue of 20 billion Japanese yen (128 million euros equivalent) on September 7, 2023, under the EMTN program, maturity September 19, 2031, at a reorder yield of 0.82875% (0.82875% coupon).

In consideration thereof, Air Liquide Finance repaid:

- the second and last tranche of Panda (2018 bond issuance on the Chinese mainland market) for an amount of 800 million Chinese renminbi (109 million euros) on March 7, 2023;
- a 2016 bond issue (144A format) of 750 million US dollars (703 million euros equivalent) on September 27, 2023.

In addition, Air Liquide S.A. repaid on September 6, 2023 the last bond of its portfolio, issued in 2013 for an amount of 300 million euros.

Finally, as part of optimizing the management of its debt and cash surpluses, Air Liquide Finance carried out several early repayments of bond debt in 2023:

- 315 million US dollars (295 million euros equivalent) on the bond issue of 1,250 million US dollars maturing in 2026, in March 2023;
- 68 million US dollars (64 million euros equivalent) on the bond issue of 750 million US dollars maturing in 2046, in March 2023;
- 59 million euros on the bond issue of 500 million euros maturing on June 5, 2024, in November 2023;
- 49 million euros on the bond issue of 500 million euros maturing on June 13, 2024, in November 2023;
- 128 million euros on the bond issue of 500 million euros maturing on April 2, 2025, in November 2023.

The carrying amount of borrowings in the balance sheet is as follows:

	2022	2023		
(in millions of euros)	Carrying amount	Amount issued [(a)]	Amortized cost ajustments [(b)]	Carrying amount [(a)+(b)]
Bonds in the EMTN program	6,622.5	6,063.8	23.4	6,087.2
Bonds not in the EMTN program	3,166.1	1,916.1	3.2	1,919.3
Private placements in the EMTN program	467.1	573.9	9.8	583.7
Private placements not in the EMTN program	284.0	271.5	2.6	274.1
TOTAL BONDS AND PRIVATE PLACEMENTS	**10,539.7**	**8,825.3**	**39.0**	**8,864.3**
Commercial paper programs	130.6	405.6	(6.8)	398.8
Bank debt and other financial debt	1,425.6	1,492.9	15.6	1,508.5
Put options granted to minority shareholders	76.8	74.2		74.2
LONG-TERM BORROWINGS	**12,172.7**	**10,798.0**	**47.8**	**10,845.8**

(a) Nominal amount.
(b) Amortized cost including accrued interest.

24.1. CARRYING AMOUNT AND FAIR VALUE OF FINANCIAL ASSETS AND LIABILITIES

Financial assets or liabilities with a carrying amount differing from their fair value are unhedged fixed-rate borrowings.

	2022		2023	
(in millions of euros)	Carrying amount	Fair value	Carrying amount	Fair value
FINANCIAL LIABILITIES				
Non-current borrowings	10,168.8	11,345.5	8,560.5	9,287.5

The fair value of the Group's financial instruments is calculated using financial market data, which allows a relevant estimate of their market value from a non-liquidation perspective. This valuation technique is level 1 according to IFRS 13 (prices quoted on an active market).

Given their short maturity, the other components of the debt, as well as supplier debts and trade receivables, have a fair value close to their book value.

24.2. MATURITY OF BORROWINGS

It is the Group policy to spread over time the maturity of long-term debt (bonds, private placements and bank credit facilities) in order to limit the annual refinancing needs.

2023			Maturity									
					≥ 1 year and ≤ 5 years				> 5 years			
(in millions of euros)	Nominal amount	Carrying amount	On demand	< 1 year	2025	2026	2027	2028	2029	2030	2031	> 2031
Bonds and private placements	8,825.3	8,864.3		1,151.2	970.9	993.9	687.9	996.2	548.3	1,092.0	623.5	1,800.4
Commercial paper programs	405.6	398.8		398.8								
Bank debt, overdraft and other financial debt	1,492.9	1,508.5		695.1	219.9	266.7	165.8	72.9	59.0	20.3	2.2	6.6
Put options granted to minority shareholders	74.2	74.2	21.6	40.2	12.4							
TOTAL BORROWINGS	**10,798.0**	**10,845.8**	**21.6**	**2,285.3**	**1,203.2**	**1,260.6**	**853.7**	**1,069.1**	**607.3**	**1,112.3**	**625.7**	**1,807.0**

2022			Maturity									
					≥ 1 year et ≤ 5 years				> 5 years			
(in millions of euros)	Nominal amount	Carrying amount	On demand	< 1 year	2024	2025	2026	2027	2028	2029	2030	> 2030
Bonds and private placements	10,493.7	10,539.7		1,206.9	1,185.7	1,098.5	1,318.4	690.3	995.3	563.9	1,090.7	2,390.0
Commercial paper programs	131.9	130.6		130.6								
Bank debt, overdraft and other financial debt	1,399.7	1,425.6		665.1	208.8	182.1	133.1	145.9	50.3	31.3	1.5	7.4
Put options granted to minority shareholders	76.8	76.8	15.7	1.3	46.9	11.1	1.8					
TOTAL BORROWINGS	**12,102.1**	**12,172.7**	**15.7**	**2,003.9**	**1,441.4**	**1,291.7**	**1,453.3**	**836.2**	**1,045.6**	**595.2**	**1,092.2**	**2,397.4**

24.3. FIXED-RATE PORTION OF GROSS DEBT

Portion of fixed-rate gross debt *(as % of total debt)*	2022	2023
EUR debt	100%	100%
USD debt	83%	79%
CNY debt	53%	100%
JPY debt	95%	100%
TWD debt	90%	93%
Total debt	**94%**	**93%**

As of December 31, 2023, fixed-rate debt represented 93% of the total debt.

24.4. DETAIL OF BOND DEBT

The table below details the main characteristics of the Group's bond issues in progress as of December 31, 2023. They represent 82% of the Group's debt (87% as of December 31, 2022).

Currency	Nominal value *(in millions)*	Issue date	Maturity	Issuer	Coupon
EUR	600	2022	2032	AL Finance	2.875%
EUR	500	2021	2033	AL Finance	0.375%
EUR	500	2021	2031	AL Finance	0.375%
EUR	500	2020	2030	AL Finance	1.375%
EUR	372	2020	2025	AL Finance	1.000%
EUR	100	2020	2025	AL Finance	1.081%
EUR	600	2019	2030	AL Finance	0.625%
EUR	600	2017	2027	AL Finance	1.000%
EUR	1,000	2016	2028	AL Finance	1.250%
EUR	451	2016	2024	AL Finance	0.750%
EUR	500	2015	2025	AL Finance	1.250%
EUR	100	2014	2029	AL Finance	3.000%
EUR	150	2014	2026	AL Finance	3.000%
EUR	441	2014	2024	AL Finance	1.875%
USD	500	2019	2029	AL Finance	2.250%
USD	682	2016	2046	AL Finance	3.500%
USD	935	2016	2026	AL Finance	2.500%
USD	100	2012	2027	AL Finance	3.460%
USD	200	2012	2024	AL Finance	3.260%
JPY	20,000	2023	2031	AL Finance	0.829 %
JPY	15,000	2008	2038	AL Finance	3.160%

24.5. NET DEBT BY CURRENCY

The Group ensures a natural hedge and reduces its exposure to currency fluctuations by raising debt mainly in the currency of the cash flows that are generated to repay the debt. In most countries, and especially outside the euro, US dollar, Japanese yen and Chinese renminbi zones, financing is raised in either local or foreign currency (EUR or USD) when sales contracts are indexed to foreign currency. Debt in other currencies is mainly denominated in Taiwan dollar, South African Rand and in Canadian dollar.

As part of intra-group multi-currency financing, the Central Treasury Department converts the debt raised in financial markets into various currencies to finance subsidiaries in their functional currencies or their cash flow currencies. The breakdown of this hedging portfolio is shown in the table below.

Accordingly, a portion of the euro debt raised was converted (1,443.0 million euros) to other currencies to finance foreign subsidiaries. As an example, 2,498.3 million euros equivalent were raised initially in US dollar, and 512.1 million euros equivalent were raised in euros and converted in US dollar using currency swap contracts. 244.5 million euros were in cash or cash equivalent, leading to an adjusted net debt in US dollars of 2,765.9 million euros equivalent.

2023 *(in millions of euros)*	Gross debt – original issue	Interest rate and currency swaps	Cash and cash equivalents	Adjusted net debt
EUR	6,885.1	(1,443.0)	(642.2)	4,799.9
USD	2,498.3	512.1	(244.5)	2,765.9
JPY	226.2	107.9	(18.6)	315.5
CNY	310.8	3.6	(263.5)	50.9
TWD	453.7	—	(30.1)	423.6
Other currencies	471.7	819.4	(426.0)	865.1
TOTAL	**10,845.8**	**—**	**(1,624.9)**	**9,220.9**

2022 *(in millions of euros)*	Gross debt – original issue	Interest rate and currency swaps	Cash and cash equivalents	Adjusted net debt
EUR	7,209.7	(1,622.0)	(892.7)	4,695.0
USD	3,543.5	537.3	(296.3)	3,784.5
JPY	108.8	218.2	(13.6)	313.4
CNY	314.6	(45.8)	(213.9)	54.9
TWD	387.9	—	(12.1)	375.8
ZAR	264.2	—	(41.4)	222.8
Other currencies	344.0	912.3	(441.4)	814.9
TOTAL	**12,172.7**	**—**	**(1,911.4)**	**10,261.3**

24.6. BREAKDOWN OF AVERAGE NET FINANCE COSTS

Net debt depends on the original gross debt raised on the financial markets, on the swap of this debt into foreign currencies to finance the subsidiaries, and on surplus cash positions. The average cost of net debt presented in the following table takes into account these various components, i.e. financing expenses, amortization and commission fees, income and expenses related to foreign currency translation and income or expenses related to cash surpluses.

	2022			2023		
(in millions of euros)	Average outstanding debt	Net interests	Average net finance costs	Average outstanding debt	Net interests	Average net finance costs
EUR	4,854.3	87.2	1.8%	4,830.9	104.5	2.2%
USD	4,449.0	142.3	3.2%	3,641.8	162.8	4.5%
JPY	394.1	4.9	1.2%	311.2	4.0	1.3%
CNY	76.2	13.7	—	184.0	12.1	6.6 %
TWD	326.0	5.6	1.7%	376.5	8.8	2.3 %
Other currencies	1,271.1	84.1	6.6%	758.5	49.1	6.5%
TOTAL	**11,370.7**	**337.8**	**3.0%**	**10,102.9**	**341.3**	**3.4%**
Non-recuring costs		—			(27.1)	
Capitalized interests		(49.4)			(48.7)	
TOTAL COST OF DEBT		**288.4**			**265.5**	

The average net finance costs, excluding capitalized interests and non-recurring costs increased by 3.5 million euros. They stand at 3.4% of the average outstanding debt in 2023. The total cost of debt, including exceptional elements and capitalized finance costs, stands at 265.5 million euros, decreasing by 22.9 million euros.

24.7. OTHER FINANCING INFORMATION

Two financial covenants are associated to bank debt facilities exceeding 50 million euros: they are long term loans used by Air Liquide Large Industries South Africa (South Africa), for a total outstanding amount of 169 million euros as of December 31, 2023. Financial covenants were all met as of December 31, 2023.

The total amount of bank credit facilities subject to financial covenants represents around 3.7% of the Group's gross debt as of December 31, 2023.

Bonds issued by L'Air Liquide S.A. and Air Liquide Finance, and making up the carrying amount of bonds as of December 31, 2023, include a change of control clause, with the exception of the 20 billion Japanese yen (128 million euros equivalent) private placement maturing in September 2031.

Note 25 Financial risk policy and management

25.1. FINANCIAL RISK MANAGEMENT

Risk management is a priority for the Group. Consequently, the Finance Department governance relies on Strategic Finance Committees and Operational Finance Committees.

The Finance Department centrally manages the main financial risks, in accordance with decisions taken by the Strategic Finance Committee to which it reports on a regular basis. The Finance Department also performs country and customer risks analyses associated with investment decisions and attends Investment Committee meetings.

The financial policy adopted by Air Liquide, the purpose of which is to minimize the risks incurred by the Group and its subsidiaries, enables the Group to ensure sustainable funding sources. To minimize the refinancing risk related to debt maturity schedules, the Group diversifies financing sources and spreads maturities over several years. In 2023, the average debt maturity was 5.5 years. As of December 31, 2023, the long-term debt (gross debt maturing in more than one year) represented 79% of the overall Group debt, compared to 84% as of December 31, 2022.

Interest rate, commodities and foreign currency hedging strategies validated by the Operational Finance Committee are set up depending on market opportunities, while complying with prudence and risk limitation principles. Negotiated market operations can be governed by Fédération Bancaire Française ("FBF") contracts or by International Swaps and Derivatives Associates ("ISDA") contracts. These do not include collateralization commitments or margin calls.

The Group also pays continuous attention to its bank and customer counterparty risks by regularly monitoring ratings issued by main international rating agencies and the level of risk associated with these counterparties. An internal ratings system, set-up in 2018, is used for the most important clients when no leading credit ratings agency information is available.

a) Foreign exchange risk

Principles

Financial instruments are only used to hedge transaction-based foreign exchange risk. The risk is attached on the one hand to financial cash flows arising from royalties, dividends, intra-group loans and borrowings denominated in foreign currencies and on the other hand to foreign currency commercial cash flows from operating entities in foreign currencies other than their functional currency. Although in slight increase, commercial cash flows denominated in foreign currencies do not represent significant amounts compared to consolidated revenue.

Foreign exchange risk related to royalties, dividend flows and intra-group loans and borrowings in foreign currencies is hedged by the Central Treasury Department using currency forwards or options with an overall term of less than 18 months.

Foreign currency commercial cash flows from operating entities are hedged either as part of the annual budgetary process for subsidiaries with recurring flows in foreign currency or at the signing date of a sale or purchase contract for non-recurring flows for the Engineering & Construction business line. Around a hundred subsidiaries are exposed to foreign exchange risk. These subsidiaries mainly use currency forwards set up by Air Liquide Finance (internal counterparty for hedging transactions) except in countries where it is prohibited by local regulations. The majority of these contracts have short maturities (three to twelve months) and market transactions are regulated by master agreements of the French Banking Federation ("FBF") or by master agreements of the International Swaps and Derivative Association ("ISDA") for local hedging operations. These do not include collateralization commitments or margin calls.

When preparing their budget at the year-end, subsidiaries report their foreign exchange risk exposure to the Central Treasury Department in order to hedge the commercial cash flows expected in the following year. In each case, the Central Treasury Department monitors the adequacy of the hedges with the identified risks and performs a full revaluation of all hedges, every six months.

The foreign exchange translation risk (consolidation in euros of the assets and liabilities in currencies) is not subject to hedging. Indeed, investments are essentially funded in the currency in which the cash flows are generated, thus creating a natural currency hedging.

Sensitivity of income statement and balance sheet items to foreign currency fluctuations

The table below sets out the effect of the translation of balance sheet items and the income statement of subsidiaries with a functional currency of USD, CNY, JPY, or CAD assuming a 10% appreciation against the euro (foreign exchange translation risk) on the following items:

(in millions of euros)	Revenue	% Total group	Operating income recurring	% Total group	Net profit	% Total group	Equity	% Total group
USD	920.3	3.33%	196.1	3.87%	120.8	3.92%	1,425.4	5.86%
CNY	244.4	0.89%	64.3	1.27%	40.8	1.33%	227.4	0.93%
JPY	85.2	0.31%	19.2	0.38%	12.3	0.40%	86.4	0.36%
CAD	82.1	0.30%	17.5	0.35%	13.1	0.43%	20.3	0.08%
SGD	81.7	0.30%	15.7	0.31%	12.6	0.41%	90.7	0.37%
TWD	43.2	0.16%	10.2	0.20%	5.5	0.18%	21.0	0.09%

The foreign currency risk sensitivity analysis shows that a 10% appreciation in the four major currencies as of December 31, 2023 would result in changes to revenue, operating income recurring, net profit and equity, as indicated above.

A 10% depreciation in the above currencies as of December 31, 2023, would have the equivalent but opposite effects as those presented above, assuming that all other variables remained constant.

Sensitivity of derivatives and their underlying hedged items to foreign currency fluctuations

The table below shows the effect of a 10% fluctuation in hedging currency exchange rates on the recognition of the foreign exchange derivatives portfolio in the Group's net profit and equity as of December 31, 2023. The sensitivity of net profit and equity primarily reflects the effect of foreign exchange swaps relating to the intragroup financing activity of the subsidiary Air Liquide Finance, and currency forward hedging instruments contracted at head office level.

	Foreign exchange risk			
	+10%		-10%	
(in millions of euros)	P&L impact	Equity impact	P&L impact	Equity impact
Foreign exchange derivatives and their hedged underlying items	—	42.7	—	(42.7)

b) Interest rate risk

Principles

Air Liquide centrally manages interest rate risk on the main currencies: euro, US dollar and Japanese yen which represented 85% of the Group's total net debt as of December 31, 2023. Regarding other currencies, the Finance Department provides subsidiaries with advice as to the different types of bank loans and/or hedging transactions to enter into according to the characteristics of local financial markets.

The Group policy is to maintain the major portion of total debt at fixed rates and to protect the residual balance using optional hedging instruments. This approach enables the Group to limit the effect of interest rate fluctuations on financial expenses.

Consequently, at the 2023 year-end, 93% of the total debt was fixed-rate debt. The fixed-rate/floating-rate breakdown is reviewed on a regular basis by the Finance Committees, depending on interest rate fluctuations and the level of Group debt.

Sensitivity to interest rate fluctuations on cost of floating-rate debt

The Group net debt exposed to interest rate fluctuations amounted to around 482 million equivalent euros as of December 31, 2023, for an average outstanding amount over the year of 0.6 billion equivalent euros (total debt adjusted for interest rate hedging instruments and short-term securities) in decrease compared to December 31, 2022 (0.8 billion equivalent euros).

An increase or decrease in interest rates by 100 basis points (±1%) on all yield curves would have an effect of approximately ±6 million euros on the Group's annual cost of debt (accounted in financial charges) before tax, assuming outstanding floating debt remains constant.

Sensitivity to interest rate fluctuations on derivatives and their underlying hedged items

The table below shows the effect of a 1% fluctuation of interest rates in all foreign currencies on the interest rate derivatives portfolio in the Group's net profit and equity, as of December 31, 2023.

	Interest rate risk			
	+1.0%		-1.0%	
(in millions of euros)	P&L impact	Equity impact	P&L impact	Equity impact
Interest rate derivatives and their hedged underlying items	(3.0)	76.1	(4.5)	(66.2)

To protect the Group against the increase of variable rates in 2023 applicable to short-term financing (commercial papers) and to other exposure to variable rates, Air Liquide Finance set up six firm hedges for 148 million euros, 200 million US dollar and 20 billion Japanese yen. They were completed by optional hedges for a total amount of 140 million euros and 200 million US dollar.

To protect the Group against new rate increases in 2024 applicable to short-term financing (commercial papers) and to other exposure to variable rates, Air Liquide Finance set up firm hedges for a total amount of 400 million euros and 250 million US dollar. They are completed by optional hedges for a total amount of 200 million euros and 200 million US dollar.

All hedging instruments used for interest rate or foreign exchange risk management purposes relate to identified risks and were set up to comply with the Group's financial policy. The effect on equity primarily stems from the fixed-rate hedging instruments contracted by the subsidiary Air Liquide Finance.

c) Counterparty risk

Counterparty risks for Air Liquide potentially include customers and bank counterparties.

The Group's subsidiaries serve a large number of customers (more than two million worldwide) located in extremely diverse markets: chemicals, steel, refining, food, pharmaceuticals, metals, automotive, manufacturing, healthcare, research laboratories, electronics, etc. In 2023, the Group's main customer represents around 2% of revenue, the Group's 10 main customers around 12% of sales, and the Group's 50 main customers around 30% of sales. The geographical risk is limited by the Group's sustainable coverage in 72 countries [(1)] on all continents. This diversity reduces customer and market risk.

To better assess its exposure, the Group has implemented procedures to regularly monitor the financial situation of its major customers as well as a monthly reporting for the Group's 169 main transnational customers in order to monitor the related consolidated risk.

Moreover, customer risk assessment and in particular the quality of the customer's site is an important component of the investment decision process.

Bank counterparty risk relates to the outstanding amounts of deposits, current accounts, market values of derivatives and to the credit lines contracted with each bank. Pursuant to its financial policy, in the majority of cases, the Group requires a long-term Standard & Poor's "A" credit rating or a Moody's "A2" rating from its counterparties to accept commitments on financial instruments. The Group's credit lines are also spread among several banks from various geographical areas to avoid the risk of concentration while complying with the same credit rating requirements. The Operational Finance Committee regularly reviews and approves the list of bank counterparties related to investments and the list of financial instruments. With regards to short-term investments, outstandings are subject to strict limits per counterparty and are monitored daily.

IFRS 13 Fair Value Measurement specifies that the valuation of currency, interest rate and commodity hedging instruments must take into account the counterparty credit risk attached to these transactions. Considering the aforementioned counterparty selection criteria, the effect on the periodic valuations, by applying the secondary bonds spread method is immaterial.

d) Liquidity risk

It is Group financial policy to spread over time the maturity of long-term debt in order to avoid concentration of annual refinancing needs. Liquidity risk is also reduced by the stability of cash flows generated from operations as well as by having confirmed credit lines in place. The financial covenants attached to the current financing arrangements described in note 24.7 do not affect the Group's access to liquidity.

The carrying nominal amount of short-term financing in the form of commercial paper amounted to 401 million euros as of December 31, 2023, an increase by 269 million euros compared to the end of 2022. The average amount of commercial paper amounted to 617 million euros in 2023, compared to 756 million euros in 2022.

The Group policy requires that commercial paper in issue be backed by confirmed long-term credit lines. In 2023, this requirement was met, with an amount of confirmed credit lines of 3,795 million euros largely exceeding maximum outstanding commercial paper.

The table below presents the maturities of the bilateral and syndicated credit lines:

(in millions of euros)	2024	2025	2026	2027	2028	2029	Total
Bilateral lines and syndicated credit lines	—	2,550	495	200	550	—	3,795

When the Group makes short-term financial investments other than bank deposits, it systematically favors monetary instruments with a short-term maturity in order to limit the risk of non-liquidity or high volatility.

The following tables represent the future cash flows related to the main balance sheet items and to the derivative financial instruments recognized at the end of the last two periods. Interest flows are calculated in accordance with IFRS 7 and represent the interest payable for each relevant period. Interest flows related to floating interest rate or foreign currency instruments were calculated using the closing interest and exchange rates as of December 31, 2022 and 2023. The flows related to debt repayment obligations differ from the amounts recognized in the Group's balance sheet due to the accounting treatment applied to borrowings and the exclusion of hedging instruments.

(1) *Excluding Russia, where the entities are no longer consolidated following the loss of control on September 1, 2022.*

2023 *(in millions of euros)*	Book value as of December 31, 2023	Cash Flow < 1 year		Cash flow ≥ 1 year and ≤ 5 years		Cash Flow > 5 year	
		Interest	Capital refund	Interest	Capital refund	Interest	Capital refund
Derivative instruments							
Assets							
Fair value of derivatives (assets)	105.8	145.9	204.4	42.0	719.1	7.7	143.8
Liabilities							
Fair value of derivatives (liabilities)	(124.2)	(127.2)	(196.9)	(84.1)	(720.5)	(9.1)	(134.6)
SUB-TOTAL DERIVATIVE INSTRUMENTS		**18.7**	**7.5**	**(42.1)**	**(1.4)**	**(1.4)**	**9.2**
Assets							
Loans and other non-current receivables					—		
Trade receivables	2,993.7		2,971.2		22.5		
Cash and cash equivalents	1,624.9	5.0	1,619.9				
SUB-TOTAL ASSETS		**5.0**	**4,591.1**		**22.5**		
Liabilities							
Non-current borrowings	(8,560.5)	(135.8)		(551.8)	(4,370.1)	(516.2)	(4,156.2)
Other non-current liabilities	(454.7)				(454.7)		
Trade payables	(3,310.5)		(3,245.9)		(64.6)		
Current borrowings	(2,285.3)	(46.8)	(2,157.3)				
SUB-TOTAL LIABILITIES		**(182.6)**	**(5,403.2)**	**(551.8)**	**(4,889.4)**	**(516.2)**	**(4,156.2)**

2022 *(in millions of euros)*	Book value as of December 31, 2022	Cash Flow < 1 year		Cash flow ≥ 1 year and ≤ 5 years		Cash Flow > 5 year	
		Interest	Capital refund	Interest	Capital refund	Interest	Capital refund
Derivative instruments							
Assets							
Fair value of derivatives (assets)	148.4	38.1	500.5	35.0	1,186.7	5.7	291.5
Liabilities							
Fair value of derivatives (liabilities)	(163.1)	(45.6)	(459.8)	(71.1)	(848.9)	(8.3)	(287.4)
SUB-TOTAL DERIVATIVE INSTRUMENTS		**(7.5)**	**40.7**	**(36.1)**	**337.8**	**(2.6)**	**4.1**
Assets							
Loans and other non-current receivables	299.9				299.9		
Trade receivables	3,034.8		3,034.8		—		
Cash and cash equivalents	1,911.4	2.5	1,908.9				
SUB-TOTAL ASSETS		**2.5**	**4,943.7**		**299.9**		
Liabilities							
Non-current borrowings	(10,168.8)	(192.6)		(550.5)	(4,995.9)	(647.0)	(5,086.3)
Other non-current liabilities	(317.8)				(317.8)		
Trade payables	(3,782.6)		(3,782.6)		—		
Current borrowings	(2,003.9)	(43.2)	(1,899.9)				
SUB-TOTAL LIABILITIES		**(235.8)**	**(5,682.5)**	**(550.5)**	**(5,313.7)**	**(647.0)**	**(5,086.3)**

e) Hierarchy of financial instruments fair value

(in millions of euros)	2022	2023
Level 1	**87.0**	**70.2**
Non-consolidated shares (listed shares)	87.0	70.2
Level 2	**311.5**	**230.0**
Derivative instruments	311.5	230.0
Level 3	**76.8**	**74.2**
Put options granted to minority shareholders	76.8	74.2

f) Commodity risk (energy contracts)

A portion of Air Liquide's energy supplies, with limited volume commitments, is obtained through forward purchase contracts, at a fixed or indexed price.

IFRS 9 provides for the inclusion within its scope of forward purchases and sales of non-financial assets as soon as these transactions are deemed similar to derivative instruments.

However, IFRS 9 considers that forward contracts for non-financial assets should not be considered as derivatives when they have been entered into to meet the Company’s “normal” business requirements, resulting in the delivery upon maturity of the underlying item for use in the Company’s industrial process. As Air Liquide does not purchase electricity or natural gas for speculation or arbitrage on commodity price trends purposes, no forward contracts relating to energy meet the definition of a derivative instrument. The contracts enter into as part of the Company’s normal business to be used in the industrial process and do not meet the definition of a derivative instrument.

Furthermore, in a global context of highly volatile electricity and natural gas market prices, Air Liquide continues to index long-term customer contracts to hedge these risks. For natural gas and electricity prices, the opening of some markets led the Group, under these circumstances, to replace the regulated tariffs by local market indices.

Nonetheless, a few contracts remain for which price indexation alone cannot guarantee a total and effective hedge against the risk of energy prices fluctuations. These risks are therefore hedged by Air Liquide, particularly by Air Liquide Finance, using adequate commodity derivatives, which are mainly swaps with maturities of generally less than two years. For contracts for the supply of industrial gas produced from renewable energy, new risks to be taken into account (long-term commitment, fixed price, intermittency, management of environmental certificates, etc.) can lead the Group to make greater use of appropriate hedging instruments.

The fair value recognition of these derivative instruments had no material impact on Group equity or profits as of December 31, 2023.

25.2. INFORMATION ON DERIVATIVE INSTRUMENTS

The Group policy consists in using financial derivatives only when hedging actual financial flows. As a result, the majority of derivative financial instruments used by the Group benefit from hedge accounting. Derivative instruments that do not benefit from hedge accounting are not used for speculative purposes.

Impact of the fair value recognition of derivative instruments on the balance sheet:

		Assets					Liabilities						
				Fair value of derivatives (assets)							Fair value of derivatives (liabilities)		
2023 *(in millions of euros)*	**IFRS classification**	**Deferred tax assets**	**Trade receivables**	**Assets - non current**	**Assets - current**	**Total**	**Net income recognized in equity**	**Profit for the period**	**Borrowings**	**Trade payables**	**Assets - non current**	**Assets - current**	**Total**
Foreign exchange risk													
Forwards hedging future cash flows	CFH [a]	6.0		(1.1)	37.1	42.0	(16.9)				5.7	53.2	42.0
Currency forwards hedging transactions recorded in the accounts and Cross Currency Swaps	FVH [b]	0.8	1.6	37.4	33.8	73.6		(2.3)	33.7	4.2	24.7	13.3	73.6
Other derivatives	[c]												0.0
Interest rate risk													
Interest rate swaps	FVH [b]												
Swaps, options and Cross Currency Swaps	CFH [a] and NIH [d]	4.7		(1.2)	(0.2)	3.3	(12.8)	(0.7)			16.8		3.3
Commodity risk (Energy)													
Forwards hedging future cash flows	CFH [a]	2.6				2.6	(7.9)				0.8	9.7	2.6
TOTAL		**14.1**	**1.6**	**35.1**	**70.7**	**121.5**	**(37.6)**	**(3.0)**	**33.7**	**4.2**	**48.0**	**76.2**	**121.5**

(a) CFH: Cash Flow Hedge.
(b) FVH: Fair Value Hedge.
(c) Derivative instruments not benefiting from hedge accounting.
(d) NIH: Net Investment Hedge.

		Assets					Liabilities						
				Fair value of derivatives (assets)							Fair value of derivatives (liabilities)		
2022 *(in millions of euros)*	**IFRS classification**	**Deferred tax assets**	**Trade receivables**	**Assets - non current**	**Assets - current**	**Total**	**Net income recognized in equity**	**Profit for the period**	**Borrowings**	**Trade payables**	**Assets - non current**	**Assets - current**	**Total**
Foreign exchange risk													
Forwards hedging future cash flows	CFH [a]	(0.1)		6.0	68.1	74.0	0.3				6.0	67.7	74.0
Currency forwards hedging transactions recorded in the accounts and Cross Currency Swaps	FVH [b]	0.9	3.0	32.6	39.0	75.5		(2.7)	34.6	6.6	23.3	13.7	75.5
Other derivatives	[c]					0.0		(0.1)				0.1	0.0
Interest rate risk													
Interest rate swaps	FVH [b]												
Swaps, options and Cross Currency Swaps	CFH [a] and NIH [d]	6.8		2.2	0.5	9.5	(19.4)				28.9	0.0	9.5
Commodity risk (Energy)													
Forwards hedging future cash flows	CFH [a]	6.9				6.9	(14.2)	(2.3)			(3.7)	27.1	6.9
TOTAL		**14.5**	**3.0**	**40.8**	**107.6**	**165.9**	**(33.3)**	**(5.1)**	**34.6**	**6.6**	**54.5**	**108.6**	**165.9**

(a) CFH: Cash Flow Hedge.
(b) FVH: Fair Value Hedge.
(c) Derivative instruments not benefiting from hedge accounting.
(d) NIH: Net Investment Hedge.

Note 26 Other liabilities (non-current/current)

26.1. OTHER NON-CURRENT LIABILITIES

(in millions of euros)	2022	2023
Investment grants	105.5	187.0
Advances and deposits received from customers	29.7	28.4
Other non-current liabilities	182.6	239.3
TOTAL OTHER NON-CURRENT LIABILITIES	**317.8**	**454.7**

26.2. OTHER CURRENT LIABILITIES

(in millions of euros)	2022	2023
Advances received	440.0	560.2
Deposits received from customers	81.4	70.7
Other payables	1,418.6	1,395.4
Accruals and deferred income	275.6	283.8
TOTAL OTHER CURRENT LIABILITIES	**2,215.6**	**2,310.1**

Amounts payable to customers under Engineering & Construction contracts amount to 188.8 million euros and are included in other current liabilities as of December 31, 2023 (151.3 million euros in 2022).

Other payables mainly include tax and employment-related liabilities.

Note 27 Trade payables

(in millions of euros)	2022	2023
Operating suppliers	3,325.3	2,807.0
Property, plant and equipment and intangible assets suppliers	457.3	503.5
TOTAL TRADE PAYABLES	**3,782.6**	**3,310.5**

A suppliers payment platform which aims at facilitating the payment process of suppliers trade payables has been set up in the United States in 2020.The Group has analyzed the main features of the contract according to the principles described in paragraph 6.d of the accounting principles and has concluded that the qualification of trade payables should not be challenged as the contract does not constitute a reverse factoring contract.

Note 28 Related party disclosures

28.1. TRANSACTIONS WITH COMPANIES INCLUDED IN THE SCOPE OF CONSOLIDATION

The Consolidated Financial Statements include the Financial Statements of L'Air Liquide S.A. and all the subsidiaries listed on pages 286 to 288. L'Air Liquide S.A. is the ultimate parent company.

Due to the activities and legal organization of the Group, only executives, associates and joint ventures are considered to be related parties to the Group. Transactions performed between these individuals or these companies and Group subsidiaries are not material.

Information related to associates and joint ventures is disclosed in note 14.

28.2. REMUNERATION ALLOCATED TO MEMBERS OF THE BOARD OF DIRECTORS AND MANAGEMENT BODIES

The remuneration of Group executives includes the remuneration allocated to the Board of Directors and the Company's management bodies as compensation for their duties within the entire Group as employees and corporate officers for the respective fiscal years. The Company's management bodies include all the members of Executive Management and the Executive Committee. The amounts expensed in this respect are as follows:

(in thousands of euros)	2022	2023
Short-term benefits	21,496	20,480
Post-employment benefits	2,151	2,683
Termination benefits	414	
Share-based payments	10,376	9,762
TOTAL	**34,437**	**32,925**

Short-term benefits

Short-term benefits include fixed remuneration, variable remuneration, benefits in kind and attendance fees. The entire variable remuneration portion due for any given year is paid the following year after the Financial Statements have been approved.

The remuneration policy for members of the executive team takes into account market practices. It includes a substantial variable portion depending on the achievement of earnings and individual performance objectives.

Post-employment benefits

Post-employment benefits mainly include the contributions paid to external pension funds. Retirement commitments amounted to 5,331 thousand euros in 2023 and 5,063 thousand euros in 2022.

Share-based payments

Stock options and performance shares granted to Executive Management and to the Executive Committee have the following expiry dates and strike prices:

Year of Stock option Plan	Expiry date	Strike price [a] *(in euros)*	Number of rights 2022	Strike price *(in euros)*	Number of rights 2023
2014 (September 22)	09/21/2024	70.42	102,349	70.42	46,422
2015 (September 28)	09/27/2025	76.23	59,362	76.23	34,120
2016 (November 29)	11/28/2026	69.33	5,561	69.33	5,561
2017 (September 20)	09/19/2027	77.54	1,075	77.54	1,075
2018 (September 25)	09/24/2028	87.97	902	87.97	902

(a) Adjusted for share capital increases by attributions of free shares (2022, 2019, 2017) and for the share capital increase in cash of October 11, 2016.

Year of Performance Shares Plan	Number of rights 2022	Number of rights 2023
2019 (September 30)	26,948	—
2020 (September 29)	62,417	29,269
2021 (September 29)	81,866	71,918
2022 (September 29)	98,140	87,150
2023 (September 28)	—	72,200

The fair value of performance shares granted in 2023 is disclosed in note 21. These amounts are expensed over the lock-in period of the option and performance shares. The amounts that will be recognized in future periods in respect of the granted stock options and performance shares amount to 17,117 thousand euros as of December 31, 2023 (18,690 thousand euros as of December 31, 2022, which also included an expense relating to share subscription options).

The 2023 plan performance shares granted to corporate officers and Executive Committee members are definitely acquired subject to the achievement of certain performance conditions.

No stock options or performance shares were granted to other non-executive Directors under these plans.

Note 29 Commitments

29.1. DETAILED COMMITMENTS

Commitments are given in the normal course of the Group's business.

(in millions of euros)	2022	2023
Firm purchase orders for fixed assets	1,234.7	1,661.1
Other commitments related to operating activities	6,828.5	7,624.4
Commitments relating to operating activities	**8,063.2**	**9,285.5**
Commitments relating to financing operations and consolidation scope	**315.4**	**198.1**
TOTAL	**8,378.6**	**9,483.6**

Commitments to purchase molecules as part of take-or-pay contracts amounted to 6,348.9 million euros as of December 31, 2023 (4,934.1 as of December 31, 2022), and are reported in other commitments related to operating activities. These amounts include in particular Helium purchase commitments.

Air Liquide owns a 13.7% stake in Exeltium S.A.S. amounting to 24.5 million euros. On March 24, 2010, Exeltium and EDF entered into an industrial partnership agreement under which Exeltium can acquire rights on a portion of EDF's electronuclear production. In consideration, Exeltium and its shareholder clients signed long-term electricity supply contracts. The contract signed by Air Liquide has a 20-year term and can be suspended by Air Liquide after 10 years. This contract provides long-term visibility over the price of the electricity to be supplied. This project was approved by the European Commission.

The Group's energy purchase commitments amounted to 2,464.2 million euros as of December 31, 2023 (5,442.8 million euros as of December 31, 2022). This amount includes the energy purchase commitments relating to the Exeltium contract. Almost all of these commitments are covered by mutual commitments received from clients in connection with long-term gas supply contracts. As a consequence, these commitments are not disclosed in the table above.

29.2. DETAILED COMMITMENTS LINKED TO POWER PURCHASE AGREEMENTS

In addition, as of December 31, 2023, the Group holds power purchase agreements (PPA), summarized below:

December 31, 2023	Number of contracts	Start-up dates	Average duration *(in years)*	Production [(a)] *(in GWh/year)*	Amount *(in millions of euros)*
Europe [(b)]	7	2021-2026	12	1,342.0	1,121.6
Americas	5	2021-2024	11	342.0	86.2
Asia Pacific	3	2022-2024	9	212.0	108.5
Middle East and Africa	5	2025	20	1,340.0	1,196.1
TOTAL PPAs	**20**			**3,236.0**	**2,512.4**

(a) Estimated production volume on the date of signature of the contract (full year amount after the start-up of the renewable production units).
(b) One contract contains an exit clause at Air Liquide's discretion which can be exercised until June 2024.

Note 30 Contingent liabilities

To the best of the Group's knowledge, there is no exceptional event or litigation which has affected in the recent past or which is likely to materially affect its financial situation or profitability.

Note 31 Climate risks consideration

31.1. BUSINESS MODEL

Air Liquide offers to its customers in the metals, chemicals, refining and energy industries gas and energy solutions essential to their own core businesses, enabling them to improve the efficiency of their processes and to make their plants more environmentally friendly.

Air Liquide's business model is based on the outsourcing of the industrial gas needs of its customers who often emit greenhouse gases themselves, in particular in the metals, chemicals and refining industries. This outsourcing is justified by Air Liquide's expertise which grants them access to state of the art technologies, optimized energy consumption of production tools, while ensuring the reliability of the supply in the long term. However, it leads to the transfer of a portion of the customer's greenhouse gas emissions to the Group.

Industrial gases are used in most industries today and they will be even more so during the energy transition because they are at the heart of industry decarbonization solutions. In a scenario of limiting global warming to a level significantly below 2°C compared to the pre-industrial level, demand will increasingly turn to low-carbon gases and solutions, in line with changing regulations.

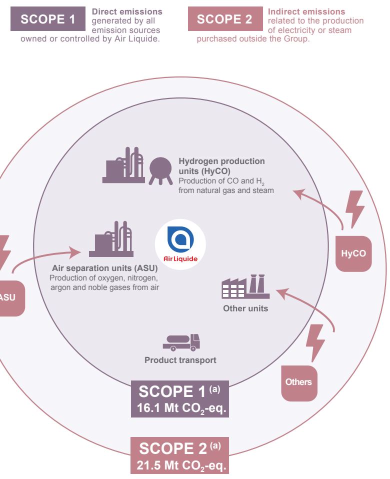
For the Large Industries activity, which bears most of the assets described below, the supply of gas is contracted for 15 years or more. Such assets are depreciated over the term of the contract, which significantly reduces the risk of impairment. Within these contracts, the Group guarantees long-term service continuity and a high level of reliability with respect to the gas supply via a high-performing industrial solution. In return, long-term gas supply contracts include guaranteed minimum volumes through take-or-pay clauses, as well as the indexation to variable costs (mainly electricity and natural gas), including any CO_2 cost (for example ETS schema in Europe), and inflation.

31.2. GROUP'S ASSETS AND CO_2 EMISSIONS

The main Group assets that impact the CO_2 balance are:

- 449 large Air Separation Units (ASU), oxygen and nitrogen in particular, which do not use any combustion processes, and therefore do not emit CO_2 directly. These units use air as their only raw material, while the energy required for the separation of the air is consumed almost exclusively in the form of electricity. The electricity used by the Group to operate these units generates CO_2 emissions, known as indirect emissions or Scope 2. The CO_2 emissions reductions can be in this case done mostly through renewable electricity purchases;
- 57 large hydrogen production units by hydrocarbon reforming, which generate CO_2 emissions from natural gas consumption; these emissions are classified as direct emissions (Scope 1). Several levers for reducing CO_2 emissions are possible for these assets: first, carbon capture and sequestration (Carbon Capture and Sequestration – CCS), using a technology owned by the Group, but also the use of biomethane. In addition, the Group is developing the use of low-carbon or renewable ammonia, which also helps to reduce the emissions of these units.

Air Liquide carries out a complete inventory of its greenhouse gas emissions, which are reported according to the different categories recommended by recognized standards such as the GreenHouse Gas (GHG) Protocol. The following schema represents the CO_2 emissions of the Group:



The data presented have been rounded up to the tenth.

(a) Emissions are reported in million tonnes of CO_2 equivalent using "market-based" methodology

Thus, in 2023, the Group's direct reported emissions (Scope 1) and indirect reported emissions (Scope 2) amount respectively to 16.1 million tonnes and 21.5 million tonnes in CO_2-equivalent.

31.3. GROUP'S CLIMATE OBJECTIVES

Air Liquide acknowledges the importance and urgency of climate issues. The Group intends to play an active role in achieving the targets set out in the Paris Agreement, which defines a global framework to avoid dangerous climate change by limiting global warming to well below 2°C compared with the pre-industrial level, and by continuing efforts to limit it to 1.5°C.

In this regard, the Group has committed to achieve carbon neutrality by 2050. This long-term objective is based primarily on a massive reduction in CO_2 emissions, with two major intermediate milestones:

- the start of reduction of absolute CO_2 emissions around 2025;
- followed by a -33% reduction in Scope 1 and Scope 2 emissions in 2035 compared with a 2020 baseline [(1)].

Moreover, the Group has maintained the objective set in 2018 to reduce its carbon intensity by -30% by 2025 compared with 2015 [(2)].

31.4. TRANSITION RISK – GREENHOUSE GAS EMISSIONS

The main climate risk identified by the Group at the 2023 closing period relates to greenhouse gas emissions.

The climate transition risk (greenhouse gas emissions) is closely linked to the need to reduce greenhouse gas emissions, particularly through implementation by public authorities of greenhouse gas emission reduction policies such as, for example, the introduction of a carbon price or more stringent product regulations, that may impact:

- either the Group's plants (direct impact on the operational scope), resulting in increased production costs, which by contract would be transferred to the customers, and the need for new investments;
- or those of its suppliers, resulting in suppliers price increases;
- or customers (indirect impact on the value chain), impacting for instance their market, processes and industrial gases needs.

Access to renewable energy is a key element in managing the Group's transition risk.

The following governance and actions have been implemented to limit the risk on the Group's assets:

- for all its projects, for all geographies, even those without a current price for CO_2, Air Liquide integrates a sensitivity analysis around the carbon price into its investment process to assess the project's viability for the client. The Group's internal investment policy requires that this sensitivity analysis be done with a price of 50 euros per tonne, the local current price and a high value of 100 euros or more per tonne, chosen in function of the geography and context. As a reminder, any CO_2 cost is contractually passed through to the customer, significantly reducing any impairment risk on the related asset;
- in cases where the public carbon price exceeds a certain cap, contracts with some customers contemplate additional investment to decarbonize the facility (for example by using carbon capture and sequestration solutions – CCS) and the corresponding additional revenue for the Group;
- the Group's electricity procurement initiatives have been reinforced, in particular the procurement of renewable electricity, in order to reduce the scope 2 emissions figures;
- the trajectory of the climate objectives is centrally managed via a carbon budget allocated to the regions which is revisited every year, in line with intermediary objectives. The Environment and Society Committee of the Board of Directors meets three times a year and once more in a joint session with the Audit and Accounts Committee. The trajectory of climate objectives and associated risks are reviewed during these sessions. The implementation of these climate objectives is part of the criteria for the Long Term Incentive plans for the CEO and for more than 2000 beneficiaries.

Air Liquide's actions to limit transition risk impacts include:

Scope 2 reduction:

- related to the 449 large air gas production units or ASUs, (Scope 2 emissions) mainly by using renewable electricity: the deployment of the Group's actions in the 10 countries with the greatest potential will significantly reduce scope 2 emissions. Since 2018, Air Liquide has already signed 20 long-term renewable energy supply contracts (PPA) for an estimated annual quantity of 3.236 GWh/y (in a full year after start-up of renewable production units), as well as a Virtual Power Purchase Agreement (VPPA). As the ASUs are almost all electrified, they do not require any significant specific investment for the transition, because emission reduction will be managed by the purchase of renewable energy depending on access to these sources (see note 29). In addition, the Group has undertaken the electrification of a few steam-driven air gas production assets, which will allow them to be completely decarbonized via the supply of renewable electricity;
- **energy costs, including renewable energy costs do not represent a significant financial risk** as they are reflected in the prices charged to customer according to the terms of the 15 years or more contracts.

Scope 1 reduction:

- related to the 57 large hydrogen production units (scope 1 emissions), by mobilizing various levers, in particular by capturing CO_2. Air Liquide masters a complete portfolio of proprietary technologies for capturing CO_2. For example, an advanced Cryocap™ system has been in industrial operation since 2015 on a hydrogen production unit in France. Thus, the decarbonization of the Group's 10 largest hydrogen production units should reduce Scope 1 emissions by more than 40%. The future of these assets and their emission trajectory is analyzed in the decarbonization plans developed for each geography, taking into account technology, unit capacity, products, customers served, and the decarbonization policies of the countries and sectors served. The most suitable reduction levers are identified and give rise to targeted studies and, in the most advanced cases, the development and implementation of reduction projects, such as CO_2 capture projects;

(1) *In tonnes of CO_2-equivalent for Scopes 1 and 2, in a "market-based" methodology, restated, from 2020 and each subsequent year, to include the emissions of the assets for the full year, taking into account (upwards and downwards) changes in scope having a significant impact on CO_2 emissions.*
(2) *In kg CO_2-equivalent/euro of operating income recurring before depreciation and amortization and excluding IFRS 16 at 2015 exchange rates on Scopes 1 and 2 of greenhouse gas emissions in a "market-based" methodology.*

- the innovation capacity and technological know-how of Air Liquide's teams enable the Group to offer cleaner and more sustainable solutions to reduce its own emissions and those of its industrial customers. The Group focuses on technologies for climate solutions and energy transition. In 2023, Air Liquide had more than 450 patent families on hydrogen.The Group's Innovation expenses amounted to 309 million euros in 2023, including more than 100 million dedicated to climate solutions;
- in a scenario of limiting global warming to a level significantly below 2°C compared to the pre-industrial level, the demand for low-carbon industrial gas at a higher price is growing and makes it possible **to remunerate the investment necessary for the decarbonization** of Air Liquide's assets, in particular for the production of hydrogen, as well as any additional costs linked to the supply of renewable electricity for developing energy transition markets. In addition, financing programs in the form of subsidies or tax credits are also implemented in Europe and more recently in the United States in order to support, during a transition period, the decarbonization of existing industrial assets and new units of production. The Group has recently been selected for financing via European grants for two carbon capture projects on steam methane reforming (SMR) hydrogen production units. **At the end of 2023, the Group has not identified any indication of impairment for the related assets;**
- **costs related to CO_2 emissions** (ex ETS scheme in Europe) **are passed-through to the customer** according to the terms of the 15 years or more contracts. The Group also applies this business model to the supply of low carbon industrial gas, therefore, **Air Liquide does not bear significant risks associated with energy and CO_2 costs.**

At the end of 2023, no significant impact has been identified, either on the useful life or on the value of the assets, on the client portfolio or on the cash flows generated by existing activities or on provisions for risks and charges.

31.5. PHYSICAL RISKS

Air Liquide operates in certain regions of the world exposed to changes (in amplitude or frequency) in exceptional meteorological phenomena due to climate change. These phenomena can slow down or interrupt the Group's operations or make them more expensive. Its suppliers and customers are also confronted with this same issue.

These can be broken down into:

- acute risks triggered by events such as natural disasters, the frequency and severity of which are increasing: storms, hurricanes, flooding, etc. These risks may relate to Air Liquide sites located near the coast for example, or in regions affected by hurricanes (the US Gulf Coast, South Asia, etc.);
- chronic risks related to more long-term changes in climate models and rising temperatures: rising sea levels, chronic heat waves in certain regions, changes in rainfall patterns and an increase in their variability, the disappearance of certain resources, etc.

Air Liquide's actions to limit physical impacts include:

- physical risks (water availability, frequency of extreme events, etc.) are appraised during the review of investment requests, in the same way as financial criteria, to ensure that the associated risk management measures are adapted, for example in the design of equipment;
- Group operations which are regularly exposed to the acute risks described above have risk management systems in place aimed at adopting suitable preventive operational measures, and at managing these crises by, first and foremost, protecting individuals and the production facilities in close cooperation with customers. These systems are regularly updated and improved;
- chronic risks are taken into account, in particular in the design of production units, in the same way and to the same extent as their energy efficiency and carbon footprint;
- losses caused by natural disasters are covered by the Group property and business interruption program;
- in 2023, Air Liquide initiated a study to identify the perils linked to the physical impacts of climate change according to 2 high-emission scenarios (SSP2-4.5 used as "business as usual" leading to +2.7°C by 2100 and the SSP5-8.5 scenario or "worst case scenario" leading to +4.4°C by 2100) and to consolidate and improve the physical risk management process. In 2024, this study will continue in order to refine the analysis.

At the end of 2023, no significant impact has been identified, either on the useful life or on the value of the assets, on the client portfolio or on the cash flows generated by existing activities or on provisions for risks and charges.

To be noted for both transition risks and physical risks, there is no impact on the dismantling provision, as this is an immediate obligation provisioned from the date of the Large Industries contract signature.

Note 32 Post-balance sheet events

There are no significant post-balance sheet events.

Foreign exchange rates and main consolidated companies

FOREIGN EXCHANGE RATES

Main foreign exchange rates used

Average rates

Euros for 1 currency	2022	2023
CAD	0.73	0.69
CNY	0.14	0.13
JPY (1,000)	7.26	6.60
SGD	0.69	0.69
TWD	0.03	0.03
USD	0.95	0.92

Closing rates

Euros for 1 currency	2022	2023
CAD	0.69	0.68
CNY	0.14	0.13
JPY (1,000)	7.11	6.40
SGD	0.70	0.69
TWD	0.03	0.03
USD	0.94	0.90

MAIN CONSOLIDATED COMPANIES

Companies marked with JO are consolidated by joint operation and those marked with E by the equity method. Other companies are fully consolidated.

The total Group interest is given after the name of each company.

Main consolidated companies	Country	Integration	% interest
GAS AND SERVICES			
EUROPE			
Air Liquide Austria GmbH	AUT		100.00%
L'Air Liquide Belge S.A.	BEL		100.00%
Air Liquide Homecare Belgium SRL	BEL		100.00%
Air Liquide Industries Belgium S.A.	BEL		100.00%
Air Liquide Large Industry S.A.	BEL		100.00%
Air Liquide Medical S.A.	BEL		100.00%
Société Européenne de Gestion de l'Energie	BEL		100.00%
Air Liquide Bulgaria EOOD	BGR		100.00%
Carbagas S.A.	CHE		100.00%
Air Liquide Deutschland GmbH	DEU		100.00%
Air Liquide Electronics GmbH	DEU		100.00%
Air Liquide Industriegase GmbH & Co. KG	DEU		100.00%
Energieversorgungscenter Dresden-Wilschdorf GmbH & Co. KG [(a)]	DEU		40.00%
VitalAire GmbH	DEU		100.00%
Zweite Energieversorgungscenter Dresden-Wilschdorf GmbH & Co. KG	DEU		50.00%
Air Liquide Danmark A/S	DNK		100.00%
Air Liquide España S.A.	ESP		99.90%
Air Liquide Ibérica de Gases S.L.U.	ESP		100.00%
Air Liquide Healthcare España, S.L.U.	ESP		100.00%
Air Liquide Finland Oy.	FIN		100.00%
Air Liquide Eastern Europe S.A.	FRA		100.00%
Air Liquide France Industrie S.A	FRA		100.00%
Air Liquide Medical Systems S.A.	FRA		100.00%
Air Liquide Réunion S.A.	FRA		97.35%
Air Liquide Santé (International) S.A.	FRA		100.00%
Air Liquide Santé France S.A.	FRA		100.00%
Air Liquide Spatial Guyane S.A.	FRA		98.79%
Air Liquide Ukraine S.A.	FRA		100.00%
Pharma Dom S.A.	FRA		100.00%
Société d'Exploitation de Produits pour les Industries Chimiques S.A.	FRA		99.98%
Air Liquide Antilles Guyane	FRA		96.76%
VitalAire S.A.	FRA		100.00%

Main consolidated companies	Country	Integration	% interest
Air Liquide Ltd	GBR		100.00%
Air Liquide (Homecare) Ltd	GBR		100.00%
Air Liquide UK Ltd	GBR		100.00%
Energas Ltd	GBR		100.00%
Air Liquide Italia S.p.A.	ITA		99.77%
Air Liquide Italia Service S.r.l	ITA		99.77%
Air Liquide Sanità Service S.p.A.	ITA		99.77%
Air Liquide Italia Produzione S.r.l	ITA		99.77%
Medicasa Italia S.p.A.	ITA		99.77%
VitalAire Italia S.p.A.	ITA		99.77%
Supra S.R.L	ITA		51.00%
Air Liquide Healthcare Ireland Limited	IRL		100.00%
Air Liquide Munay Tech Gases	KAZ		75.00%
L'Air Liquide Luxembourg S.A.	LUX		100.00%
Air Liquide Acetylene B.V.	NLD		100.00%
Air Liquide B.V.	NLD		100.00%
Air Liquide Homecare Netherlands BV	NLD		100.00%
Air Liquide Industrie B.V.	NLD		100.00%
Air Liquide Nederland B.V.	NLD		100.00%
Scott Specialty Gases Netherlands B.V.	NLD		100.00%
Hatek Lastechniek NH B.V.	NLD		100.00%
Handelsonderneming Hatek B.V.	NLD		100.00%
Air Liquide Norway A.S.	NOR		100.00%
BetaMed S.A.	POL		80.00%
Air Liquide Katowice Sp.z.o.o.	POL		79.25%
Air Liquide Polska Sp.z.o.o.	POL		100.00%
Air Liquide Medicinal S.A.	PRT		99.85%
Sociedade Portuguesa do Ar Liquido Lda	PRT		99.93%
Air Liquide Romania S.r.l	ROM		100.00%
Air Liquide Gas A.B.	SWE		100.00%
NordicInfu Care A.B	SWE		100.00%
Air Liquide Gaz San. Ve Tic. A.S.	TUR		100.00%

Main consolidated companies	Country	Integration	% interest
AMERICAS			
Air Liquide Argentina S.A.	ARG		100.00%
Air Liquide Brasil Ltda	BRA		100.00%
Air Liquide Canada, Inc.	CAN		100.00%
Barry Hamel Equipment Ltd.	CAN		100.00%
Vitalaire Canada, Inc.	CAN		100.00%
Respiratory Homecare Solutions Canada Inc.	CAN		100.00%
Air Liquide Chile S.A.	CHL		100.00%
Air Liquide Colombia S.A.S	COL		100.00%
Air Liquide Dominicana S.A.S	DOM		100.00%
Air Liquide Mexico, S. de RL de CV	MEX		100.00%
La Oxigena Paraguaya S.A.	PRY		87.96%
Air Liquide Uruguay S.A.	URY		96.68%
Airgas USA, LLC	USA		100.00%
Airgas Specialty Products	USA		100.00%
Red-D-Arc, Inc.	USA		100.00%
Airgas Safety, Inc.	USA		100.00%
Air Liquide Electronics U.S. LP	USA		100.00%
Air Liquide Large Industries U.S. LP	USA		100.00%
Air Liquide Advanced Materials, Inc.	USA		100.00%
MIDDLE-EAST AND AFRICA			
Air Liquide Afrique S.A.	FRA		100.00%
Air Liquide Middle East & North Africa FZCO	ARE		100.00%
Air Liquide Gulf FZE	ARE		100.00%
Air Liquide Bénin S.A.	BEN	E	99.99%
Air Liquide Burkina Faso S.A.	BFA		64.87%
Air Liquide Botswana Proprietary Ltd	BWA		99.93%
Air Liquide Côte d'Ivoire S.A.	CIV		72.08%
Air Liquide Cameroun S.A.	CMR		100.00%
Air Liquide Congo S.A.	COG		100.00%
Air Liquide Alexandria for Medical & Industrial Gases S.A.E.	EGY		99.99%
Air Liquide El Soukhna for Industrial Gases S.A.E.	EGY		99.93%
Air Liquide Misr S.A.E.	EGY		100.00%

Main consolidated companies	Country	Integration	% interest
Air Liquide Middle East S.A.	FRA		100.00%
Air Liquide Gabon S.A.	GAB		99.04%
Air Liquide Ghana Ltd	GHA		100.00%
Air Liquide India Holding Pvt. Ltd	IND		100.00%
Air Liquide India Speciality Gases Pvt. Ltd.	IND		100.00%
Shuaiba Oxygen Company K.S.C.C. [(a)]	KWT		49.81%
Air Liquide Maroc S.A.	MAR		98.66%
Air Liquide Madagascar S.A.	MDG		73.74%
Air Liquide Mali S.A.	MLI		99.97%
Air Liquide Namibia Proprietary Ltd	NAM		100.00%
Air Liquide Nigeria Plc	NGA		87.31%
Air Liquide Sohar Industrial Gases LLC	OMN		50.10%
Gasal Q.S.C.	QAT	E	40.00%
Vitalaire Arabia LLC.	SAU		60.00%
Air Liquide Arabia LLC	SAU		100.00%
Air Liquide Sénégal S.A.	SEN		83.60%
Air Liquide Togo S.A.	TGO	E	70.57%
Air Liquide Tunisie S.A.	TUN		59.17%
Air Liquide Large Industries (Pty) Ltd	ZAF		100.00%
Air Liquide Large Industries South Africa (Pty) Ltd	ZAF		75.00%
Air Liquide Proprietary Ltd	ZAF		99.93%
ASIA PACIFIC			
Air Liquide Australia Ltd	AUS		100.00%
Air Liquide Healthcare P/L	AUS		100.00%
Air Liquide W.A. Pty Ltd	AUS		100.00%
Brunei Oxygen SDN	BHD		50.00%
Air Liquide Cangzhou Co., Ltd	CHN		100.00%
Air Liquide China Holding Co., Ltd	CHN		100.00%
Air Liquide Shanghai Co., Ltd	CHN		100.00%
Air Liquide Shanghai International Trading Co. Ltd	CHN		100.00%
Air Liquide Tianjin Co., Ltd	CHN		100.00%
Air Liquide Yongli Tianjin Co., Ltd	CHN		55.00%
Air Liquide Zhangjiagang Industrial Gases Co., Ltd	CHN		100.00%
Shanghai Chemical Industry Park Industrial Gases Co., Ltd	CHN		51.00%

(a) Consolidation method differs from percentage of shares due to a contractual agreement.

Main consolidated companies	Country	Integration	% interest
Celki International Ltd	HKG		100.00%
P.T. Air Liquide Indonesia	IDN		100.00%
Air Liquide Japan G.K.	JPN		100.00%
Toshiba Nano Analysis K.K.	JPN		51.00%
VitalAire Japan K.K.	JPN		94.13%
Air Liquide Korea Co., Ltd	KOR		100.00%
VitalAire Korea Inc.	KOR		100.00%
Southern Industrial Gas Sdn Bhd	MYS		100.00%
Air Liquide Malaysia Sdn Bhd	MYS		100.00%
Air Liquide New Zealand Ltd	NZL		100.00%
Air Liquide Phils Inc.	PHL		100.00%
Air Liquide Singapore Pte Ltd	SGP		100.00%
Air Liquide Thailand Ltd	THA		100.00%
Air Liquide Electronics Systems Asia Ltd	TWN		100.00%
Air Liquide Far Eastern Ltd	TWN		65.00%
Air Liquide Vietnam Co., Ltd	VNM		100.00%
ENGINEERING & CONSTRUCTION			
Air Liquide Global E&C Solutions Canada LP	CAN		100.00%
Air Liquide Hangzhou Co., Ltd	CHN		100.00%
Air Liquide Global E&C Solutions (Yantai) Co., Ltd.	CHN		100.00%
Air Liquide Global E&C Solutions Germany GmbH	DEU		100.00%
Air Liquide Global E&C Solutions France S.A.	FRA		100.00%
Air Liquide Global E&C Solutions Japan K.K	JPN		100.00%
JJ-Lurgi Engineering Sdn. Bhd.	MYS	E	50.00%
Air Liquide Global E&C Solutions Singapore Pte. Ltd	SGP		100.00%
Air Liquide Global E&C Solutions US, Inc.	USA		100.00%

Main consolidated companies	Country	Integration	% interest
GLOBAL MARKETS & TECHNOLOGIES			
Air Liquide Advanced Technologies US LLC	USA		100.00%
Alizent France S.A.	FRA		100.00%
Air Liquide Advanced Technologies S.A.	FRA		100.00%
Cryolor S.A.	FRA		100.00%
Air Liquide Electronics Systems S.A.	FRA		100.00%
FerdinandsGas Sverige AB	FRA		100.00%
Air Liquide Maritime SAS	FRA		100.00%
The Hydrogen Company	FRA		100.00%
Offshore Hire and Services	GBR		100.00%
HOLDING COMPANIES AND R&D ACTIVITIES			
Air Liquide Finance S.A.	FRA		100.00%
Air Liquide International S.A.	FRA		100.00%
L'Air Liquide S.A.	FRA		100.00%
Orsay-Re S.A.	LUX		100.00%
Air Liquide International Corp.	USA		100.00%
American Air Liquide, Inc.	USA		100.00%
American Air Liquide Holdings, Inc	USA		100.00%

The extended list of consolidated companies is available on:

https://www.airliquide.com/consolidation-scope-2023

Statutory auditors' offices and fees

STATUTORY AUDITORS' OFFICES

KPMG S.A.

Principal Statutory Auditor

KPMG S.A. is represented by

Valérie Besson and Laurent Genin
Tour Eqho – 2, avenue Gambetta – CS60055
92066 Paris-La Défense

PricewaterhouseCoopers Audit

Principal Statutory Auditor

PricewaterhouseCoopers Audit is represented by

Olivier Lotz and Cédric Le Gal
63, rue de Villiers
92200 Neuilly-sur-Seine

STATUTORY AUDITORS' FEES

	2023							
(in thousands of euros)	KPMG S.A.		PricewaterhouseCoopers Audit		Others		Total	
Audit, certification, review of individual and consolidated financial statements	5,486	85.5%	7,207	92.6%	532	77.3%	13,225	88.8%
■ Issuer	651		906		—		1,557	
■ Fully consolidated subsidiaries	4,931		6,301		532		11,764	
of which Airgas	—		*1,658*		*16*		*1,674*	
Services required by law	42	0.7%	39	0.5%	—	0.0%	81	0.5%
Total of certification missions and services required by law	**5,528**	**86.1%**	**7,246**	**93.1%**	**532**	**77.3%**	**13,306**	**89.4%**
Services related to Corporate Social Responsibility (CSR)	—	—	135	1.7%	—	—	135	0.9%
Due-diligence services (sell-side and buy-side)	—	—%	—	—%	—	0.0%	0.00	0.0%
Other services [(a)]	892	13.9%	399	5.1%	156	22.7%	1,447	9.7%
Total of non-audit services	**892**	**13.9%**	**534**	**6.9%**	**156**	**22.7%**	**1,582**	**10.6%**
TOTAL	**6,420**	**100%**	**7,780**	**100%**	**688**	**100%**	**14,888**	**100%**

(a) *The other services cover services provided at the request of Air Liquide and its subsidiaries including in particular non-mandatory financial statement audits, tax compliance reviews, agreed-upon procedures and various attestations.*

	2022							
(in thousands of euros)	KPMG S.A.		PricewaterhouseCoopers Audit		Others		Total	
Audit, certification, review of individual and consolidated financial statements	5,260	80.7%	7,017	87.5%	566	61.8%	12,843	83.1%
■ Issuer	627		764		—		1,391	
■ Fully consolidated subsidiaries	4,633		6,253		566		11,452	
of which Airgas	—		*1,767*		*10*		*1,777*	
Services required by law	30	0.5%	67	0.8%	11	1.2%	108	0.7%
Total of certification missions and services required by law	**5,290**	**81.2%**	**7,084**	**88.3%**	**577**	**63.0%**	**12,951**	**83.8%**
Services related to Corporate Social Responsibility (CSR)	—	—	142	1.8%	—	—	142	0.9%
Due-diligence services (sell-side and buy-side)	38	0.6	247	3.1	2	0.2%	287	1.9%
Other services	1,189	18.2%	551	6.9%	337	36.8%	2,077	13.4%
Total of non-audit services	**1,227**	**18.8%**	**940**	**11.7%**	**339**	**37.0%**	**2,506**	**16.2%**
TOTAL	**6,517**	**100%**	**8,024**	**100%**	**916**	**100%**	**15,457**	**100%**

Statutory Auditors' Report on the Consolidated Financial Statements

This is a translation into English of the Statutory Auditors' report on the consolidated financial statements of the Company issued in French and it is provided solely for the convenience of English speaking users. This Statutory Auditors' report includes information required by European regulation and French law, such as information about the appointment of the Statutory Auditors or verification of the information concerning the Group presented in the Management Report and other documents provided to shareholders.

This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

To the Annual General Meeting,

OPINION

In compliance with the engagement entrusted to us by your Annual General Meeting, we have audited the accompanying consolidated financial statements of L'Air Liquide ("the Group") for the year ended December 31, 2023.

In our opinion, the consolidated financial statements give a true and fair view of the assets and liabilities and of the financial position of the Group as at December 31, 2023 and of the results of its operations for the year then ended in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union.

The audit opinion expressed above is consistent with our report to the Audit and Accounts Committee.

BASIS FOR OPINION

Audit Framework

We conducted our audit in accordance with professional standards applicable in France. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under those standards are further described in the Statutory Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report.

Independence

We conducted our audit engagement in compliance with independence requirements of the French Commercial Code (Code de commerce) and the French Code of Ethics (Code de déontologie) for statutory auditors, for the period from January 1, 2023 to the date of our report and specifically we did not provide any prohibited non-audit services referred to in Article 5(1) of Regulation (EU) No 537/2014.

JUSTIFICATION OF ASSESSMENTS – KEY AUDIT MATTERS

In accordance with the requirements of Articles L.821-53 and R.821-180 of the French Commercial Code (Code de commerce) relating to the justification of our assessments, we inform you of the key audit matters relating to risks of material misstatement that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period, as well as how we addressed those risks.

These matters were addressed in the context of our audit of the consolidated financial statements as a whole and in forming our opinion thereon, and we do not provide a separate opinion on specific items of the consolidated financial statements.

Large Industries activity: qualification of the contracts and related revenue recognition method

Risk identified

The gas supply of the Large Industries activity is based on long term contracts with a limited number of customers and requires significant industrial investments.

As described in note "3.a. Revenue recognition – Gas & Services" of the accounting principles section of the consolidated financial statements, these investments are usually made to share production capacity with the other business lines of the Group, particularly the Industrial Merchant business or to serve customers connected to pipelines in an industrial region. In such cases, Group management considers that those assets are not identified as defined in the standard IFRS 16 "Leases".

When assets used for the long term supply agreements are dedicated to a customer, the Group considers that it retains the right to direct the use of these assets as defined in the standard IFRS 16. Accordingly, gas supply agreements linked to those assets are not considered as leases. These industrial investments continue to be controlled by the Group and are recorded as property, plant and equipment, the full amounts received for the contracts being, otherwise, recognized as revenue.

Customers of the Large Industries business simultaneously receive and consume the benefits granted by the gas supply service or its availability. As a result, the revenue recognition related to these contracts occurs when the gas is supplied or when the reserved capacity is made available.

As described in note 31 "Climate risk consideration" to the consolidated financial statements, long term gas supply contracts include guaranteed minimum volumes through take-or-pay clauses, as well as the indexation to variable costs (mainly electricity and natural gas), including any CO_2 cost, and inflation.

Due to the complexity of those contracts and the impact on the Group's consolidated financial statements of the judgments made when the contract is signed or in case of subsequent significant modifications, and of the execution of contractual clauses such as indexation clauses to variable costs, we have considered the qualification of Large Industries long term contracts and related revenue recognition criteria as a key audit matter.

Our response

Our procedures consisted notably in:

- understanding the criteria to qualify the Large Industries long term contracts applied by the Group, considering in particular the specific nature of the underlying assets;
- understanding internal control procedures implemented by the Group to confirm the compliance of the accounting treatment applied to these contracts with IFRS 15 “Revenue from Contracts with Customers” and IFRS 16 “Leases”;
- verifying the compliance of the accounting treatment applied to Large Industries long term contracts with IFRS 15 and IFRS 16;
- assessing the application of existing contractual indexation clauses, through an understanding of the Revenue process, including relevant controls, and performing substantive testing on a sample of revenue transactions;
- assessing the appropriateness of the disclosure included in note “3.a. Revenue recognition – Gas Services” of the accounting principles section of the notes to the consolidated financial statements.

Large Industries activity: useful lives of production units and measurement of their recoverable amount

Risk identified

As at December 31, 2023, the net book value of property, plant and equipment amounts to 23,652 million euros, or 48,9% of the Group total assets, that include the significant industrial investments to execute the customer agreements of the Large Industries activity. As disclosed in note “5.e. Property, plant and equipment” of the accounting principles section of the consolidated financial statements, Large Industries production units are depreciated on a straight-line basis over their estimated useful life, usually 15 to 20 years. The estimated useful lives are reassessed on a regular basis and the resulting change in estimates, if any, are recorded on a prospective basis.

In addition, the Group can be exposed to certain risks specific to industrial investments. Expected returns on investment and their recoverable value can, for example, be adversely impacted by events such as the economic context, overruns and construction delays, start-up conditions, technology changes, geographical location, counterparty risk or the need for new investments in order to meet an increasing demand for low-carbon industrial gases. New investments may also be required to meet the Group objectives and commitments to achieve carbon neutrality.

As disclosed in note “5.f. Impairment of assets” of the accounting principles section of the consolidated financial statements, Group management determines on a regular basis whether asset impairment indicators exist. If a triggering event is identified, an impairment test is performed to confirm whether the net book value of the asset exceeds its recoverable value. These principles lead the Group to test production assets (either individually or within the cash generating unit to which they are attached), in particular in case of significant start-up delays, project termination, significant decrease in expected business volumes, early termination or non-renewal of related customer contracts, obsolescence of assets in the context of the energy transition.

The measurement of the recoverable value of the equipment relies on significant estimates relating to the Group’s capacity to generate future cash-flows, re-use certain equipment for other internal or external customers, to sell the assets, or to obtain indemnification, notably from customers, or subsidies.

The Group has carried out a review of its portfolio of assets, identified certain triggering events and thus performed impairment tests, which resulted in an impairment charge of LI assets recognized as part of the total amount of assets impairment (344,9 million euros) disclosed in note 5 to the consolidated financial statements as at December 31, 2023.

Due to the significant value of each production asset and the cumulative value of these assets, the key assumptions used to assess their useful life, their re-use or the compensation to be received, we have considered the useful life and measurement of the recoverable value of Large Industries production assets as a key audit matter.

Our response

Our procedures consisted notably in:

- understanding the procedures performed by the Group to assess and update the depreciation period of the equipment;
- assessing the consistency of their useful lives with contractual terms and available internal technical studies;
- analyzing the Group’s process to identify impairment indicators;
- understanding the work carried out by the Group to determine the recoverable values of the plants, including key assumptions and estimates used to determine the future cash flows;
- assessing the accounting translation of impairment losses resulting from the determination of recoverable values;
- assessing, with the assistance of our experts in climate change and energy transition, the impact of climate change and energy transition on the financial statements, in order to corroborate the Group's assessment that its climate strategy has not resulted in any material impact, neither on the useful life nor on the recoverable value of Large Industries production assets;
- assessing the absence of obvious inconsistencies between the consolidated financial statements and the Group’s other publications addressing the issues related to climate change;
- verifying the appropriateness of the disclosure included in note “5.e. Property, plant and equipment” and note “5.f. Impairment of assets” of the accounting principles section of the consolidated financial statements and note 31 “Climate risk consideration" to the consolidated financial statements.

Impairment test of goodwill

Risk identified

In connection with its external growth strategy, the Group monitors the related goodwill at the level of group of cash generating units. For the Gas & Services activity, goodwill are mostly allocated on a geographical basis. For the world business units Engineering & Construction and Global Markets & Technologies, goodwill is monitored at the business unit level. As at December 31, 2023, goodwill amounts to a net book value of 14,194 million euros (29,4% of the Group total assets).

The Group performs annually, an impairment test, by reference to market values. Insofar as the fair value is not significantly greater than the net carrying amount of the cash-generating unit or group of cash-generating units, the Group confirms the recoverable amount of the cash-generating unit or group of cash-generating units using the estimated cash flow approach (value in use) as described in note "5.f. Impairment of assets" of the accounting principles section of the consolidated financial statements.

The determination of fair value and recoverable value, and the sensitivity to the fluctuation of market multiples and key data and assumptions used, require significant judgement and management estimates, in particular in the context of climate change and energy transition.

We have therefore considered the impairment test of goodwill as a key audit matter.

Our response

Our procedures consisted notably in:

- understanding and assessing the principles used to determine the groups of cash generating units;
- analyzing, with the assistance of our valuation experts, principles and methods used to determine the market value and their measurement based on multiples of market capitalization;
- corroborate, on the basis of external data:
  - the results of the Group's impairment tests as of December 31, 2023, and
  - the consideration of both climate risk and challenges and opportunities relating to the energy transition;
- assessing the sensitivity of the result of the impairment tests performed by the Group as at December 31, 2023;
- assessing the appropriateness of the information included in note "10. Goodwill" to the consolidated financial statements.

Specific verifications

We have also performed, in accordance with professional standards applicable in France, the specific verification required by laws and regulations of the Group's information given in the Group's Management Report.

We have no matters to report as to their fair presentation and their consistency with the consolidated financial statements.

We attest that the consolidated non-financial statement required by Article L.225-102-1 of the French Commercial Code (Code de commerce) is included in the Group's information given in the Management Report, being specified that, in accordance with Article L.823-10 of this Code, we have verified neither the fair presentation nor the consistency with the consolidated financial statements of the information contained therein and the information has to be subject to a report by an independent third party.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

Format of the presentation of the Consolidated Financial Statements included in the Annual Financial Report

We have also verified, in accordance with the professional standard applicable in France relating to the procedures performed by the statutory auditor relating to the annual and consolidated financial statements presented in the European single electronic format, that the presentation of the consolidated financial statements included in the Annual Financial Report mentioned in Article L. 451-1-2, I of the French Monetary and Financial Code (Code monétaire et financier), prepared under the responsibility of the Chief Executive Officer (Directeur Général), complies with the single electronic format defined in the European Delegated Regulation No 2019/815 of 17 December 2018. As it relates to consolidated financial statements, our work includes verifying that the tagging of these consolidated financial statements complies with the format defined in the above delegated regulation.

Based on the work we have performed, we conclude that the presentation of the consolidated financial statements included in the Annual Financial Report complies, in all material respects, with the European single electronic format.

Due to the technical limitations inherent to the block-tagging of the consolidated financial statements according to the European single electronic format, the content of certain tags of the notes may not be rendered identically to the accompanying consolidated financial statements.

Appointment of the Statutory Auditors

We were appointed as statutory auditors of L'Air Liquide by the Annual General Meeting held on May 12, 2016 for PricewaterhouseCoopers Audit and on May 4, 2023 for KPMG S.A.

As at December 31, 2023, PricewaterhouseCoopers Audit was in its eighth year of uninterrupted engagement and KPMG S.A. in its second year.

RESPONSIBILITIES OF MANAGEMENT AND THOSE CHARGED WITH GOVERNANCE FOR THE CONSOLIDATED FINANCIAL STATEMENTS

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for 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 it is expected to liquidate the Company or to cease operations.

The Audit and Accounts Committee is responsible for monitoring the financial reporting process and the effectiveness of internal control and risks management systems and where applicable, its internal audit, regarding the accounting and financial reporting procedures.

The consolidated financial statements were approved by the Board of Directors.

STATUTORY AUDITORS' RESPONSIBILITIES FOR THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS

Objectives and audit approach

Our role is to issue a report on the consolidated financial statements. Our objective is to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As specified in Article L.821-55 of the French Commercial Code (Code de commerce), our statutory audit does not include assurance on the viability of the Company or the quality of management of the affairs of the Company.

As part of an audit conducted in accordance with professional standards applicable in France, the statutory auditor exercises professional judgment throughout the audit and furthermore:

- identifies and assesses the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence considered to be sufficient and appropriate to provide a basis for his opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control;
- evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management in the consolidated financial statements;
- assesses the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. This assessment is based on the audit evidence obtained up to the date of his audit report. However, future events or conditions may cause the Company to cease to continue as a going concern. If the statutory auditor concludes that a material uncertainty exists, there is a requirement to draw attention in the audit report to the related disclosures in the consolidated financial statements or, if such disclosures are not provided or inadequate, to modify the opinion expressed therein;
- evaluates the overall presentation of the consolidated financial statements and assesses whether these statements represent the underlying transactions and events in a manner that achieves fair presentation;
- obtains sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. The statutory auditor is responsible for the direction, supervision and performance of the audit of the consolidated financial statements and for the opinion expressed on these consolidated financial statements.

Report to the Audit and Accounts Committee

We submit a report to the Audit and Accounts Committee which includes in particular a description of the scope of the audit and the audit program implemented, as well as the results of our audit. We also report, if any, significant deficiencies in internal control regarding the accounting and financial reporting procedures that we have identified.

Our report to the Audit and Accounts Committee includes the risks of material misstatement that, in our professional judgment, were of most significance in the audit of the consolidated financial statements of the current period and which are therefore the key audit matters that we are required to describe in this report.

We also provide the Audit and Accounts Committee with the declaration provided for in Article 6 of Regulation (EU) N° 537/2014, confirming our independence within the meaning of the rules applicable in France such as they are set in particular by Articles L.821-27 to L.821-34 of the French Commercial Code (Code de commerce) and in the French Code of Ethics (Code de déontologie) for statutory auditors. Where appropriate, we discuss with the Audit and Accounts Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Neuilly-sur-Seine and Paris-La Défense, March 4, 2024
The Statutory Auditors
French original signed by

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STATUTORY ACCOUNTS ON THE PARENT COMPANY

Income statement

For the year ended December 31

(in millions of euros)	Notes	2022	2023
Revenue	(2)	97.5	105.4
Royalties and other operating income	(3)	892.1	838.3
Total operating income (I)		**989.6**	**943.7**
Purchases		(37.4)	(46.9)
Duties and taxes other than corporate income tax		(19.5)	(21.5)
Personnel expenses		(253.7)	(270.4)
Depreciation, amortization and provision expenses	(5)	(37.9)	(59.6)
Other operating expenses	(4)	(319.5)	(334.7)
Total operating expenses (II)		**(668.0)**	**(733.1)**
Net operating profit (loss) (I + II)		**321.6**	**210.6**
Financial income from equity affiliates	(6)	414.1	804.9
Interests, similar income and expenses	(6)	47.2	(76.4)
Other financial income and expenses	(6)	24.6	(17.2)
Financial income and expenses (III)		**485.9**	**711.3**
Net profit / (loss) from ordinary activities before tax (I + II + III)		**807.5**	**921.9**
Exceptional income and expenses	**(7)**	**151.0**	**79.5**
Statutory employee profit-sharing		(3.9)	(4.3)
Corporate income tax	(8)	(29.9)	(19.9)
NET PROFIT FOR THE YEAR		**924.7**	**977.2**

Balance sheet

For the year ended December 31

		December 31, 2022	December 31, 2023		
(in millions of euros)	Notes	Net	Gross carrying amounts	Amortization, depreciation and provisions	Net
ASSETS					
Intangible assets	(9) & (11)	31.3	309.9	(282.7)	27.2
Tangible assets	(9) & (11)	80.7	170.5	(84.3)	86.2
Financial assets	(10) & (11)	13,067.6	13,058.8	(8.4)	13,050.4
TOTAL NON-CURRENT ASSETS		**13,179.6**	**13,539.2**	**(375.4)**	**13,163.8**
Inventories and work-in-progress	(11)	1.0	0.7	—	0.7
Operating receivables	(11) & (14)	714.2	775.8	(46.3)	729.5
Current account loans with subsidiaries	(11) & (14)	268.2	267.6	—	267.6
Short-term financial investments	(12)	115.2	150.6	—	150.6
Cash and financial instruments		12.0	12.1	—	12.1
Prepaid expenses		4.7	3.9	—	3.9
TOTAL CURRENT ASSETS		**1,115.3**	**1,210.7**	**(46.3)**	**1,164.4**
Bond redemption premiums		—	—	—	—
Unrealized foreign exchange losses		1.9	8.3	—	8.3
TOTAL ASSETS		**14,296.8**	**14,758.2**	**(421.7)**	**14,336.5**
EQUITY AND LIABILITIES					
Share capital		2,879.0			2,884.8
Additional paid-in capital		2,349.0			2,447.7
Revaluation reserve		23.9			23.9
Legal reserve		261.3			287.8
Other reserves		388.5			388.5
Retained earnings		4,356.8			3,671.8
Net profit for the year		924.7			977.2
Tax-driven provisions		3.0			3.1
TOTAL SHAREHOLDERS' EQUITY	**(13)**	**11,186.2**			**10,684.8**
PROVISIONS	**(11)**	**55.0**			**88.2**
Other bonds	(14)	302.3			—
Bank borrowings	(14)	2.0			—
Other borrowings	(14)	251.9			251.9
Operating payables	(14)	630.8			687.1
Current account borrowings with subsidiaries	(14)	1,865.2			2,619.6
Deferred income		1.1			0.7
TOTAL LIABILITIES		**3,053.3**			**3,559.3**
Unrealized foreign exchange gains		2.3			4.2
TOTAL EQUITY AND LIABILITIES		**14,296.8**			**14,336.5**

Notes to the statutory accounts

ACCOUNTING POLICIES

1. General principles

The statutory accounts of the Company L'Air Liquide S.A. have been prepared in accordance with the accounting rules and principles generally accepted in France according to the provisions of the French Chart of Accounts *(Plan Comptable Général)*.

The accounting policies for the establishment and presentation of the statutory accounts have been applied in accordance with the principle of prudence and with the following basic assumptions:

- Going concern;
- Consistency of accounting methods from one accounting period to another;
- Separation of each accounting periods.

The method used for the valuation of recorded items is the historical cost method.

Only material information is disclosed.

2. Non-current assets

A. Intangible assets

Internally generated intangible assets primarily include the development costs of information management systems. They are capitalized only if they generate probable future economic benefits and whether there is available appropriate resources (technical, financial and others) to complete the development and use or sell the intangible asset. Internal and external costs corresponding to detailed application design, programming, the performance of tests and the drafting of technical documentation intended for internal or external use are capitalized.

Significant upgrade and improvement costs are added to the initial cost of assets if they specifically meet the capitalization criteria.

Other intangible assets include separately acquired intangible assets such as software, licenses and intellectual property rights and are measured at acquisition cost.

Intangible assets are amortized according to the straight-line method over their estimated useful lives.

B. Tangible assets

Land, buildings and equipment are recognized at historical cost. Interim interest expense is not included in the cost.

Where components of a tangible asset have different useful lives, they are accounted separately and depreciated over their own useful lives.

Depreciation is computed according to the straight-line method over their estimated useful lives as follows:

- buildings: 10 to 30 years;
- equipment: 5 to 20 years.

Land is not depreciated.

C. Impairment of intangible and tangible assets

The Company assesses at each closing date whether there is any indication of impairment loss of intangible and tangible assets. If such indications exist, an impairment test is performed to assess whether the carrying amount of the asset exceeds its present value, which is defined as the greater of its market value and value in use.

In assessing value in use, the estimated future cash flows are discounted to their present value as this would be done for an investment decision.

When the present amount of an asset is lower than its net carrying amount, an impairment loss is recognized in the income statement. When the present value exceeds the carrying amount, the previously recognized impairment is reversed to the income statement.

D. Equity investments

Equity investments are recognized at their initial amount on the entry date, with the exception of those subject to a revaluation as provided by Law 76-1232 of December 29, 1976. Acquisition costs that are not representative of market value are expensed.

When the carrying amount, determined using the criteria normally adopted for the measurement of equity investments (market multiples method based on the Air Liquide Group market valuation, estimated cash flow approach, and net asset value remeasured at fair value), is lower than the book value, an impairment loss is recognized for the difference.

E. Treasury shares

When the Company purchases its own shares, they are recognized at cost as treasury shares in other long-term investment securities. The gains or losses on disposals of treasury shares contribute to the net profit for the year.

However, shares allocated for the purpose of implementing plans for free grants of shares are reclassified to a “Short-term financial investments – Company treasury shares” caption at the balance sheet value on the date of allotment.

A provision is recorded over the rights vesting period to cover the future charge of employees and members of Executive Management of the Company relating to the remittance of current shares when the performance criteria can be determined with reliability.

When the purchase cost of shares is higher than their valuation based on the average share price during the last month of the fiscal year, treasury shares earmarked for cancellation or allocated for the purpose of implementing plans for free grants of shares are not impaired.

3. Inventories and work-in-progress

Raw materials, supplies and goods are primarily measured at weighted average cost.

An impairment loss is recognized for inventories and work-in-progress when the estimated realizable amount is lower than cost.

4. Trade receivables and other operating assets

Trade receivables and other operating assets are measured at historical cost.

An impairment loss for receivables is recognized when it becomes probable that the amount due will not be collected and the loss can be reasonably estimated.

5. Foreign currency transactions

Foreign currency transactions are translated at the exchange rate prevailing on the transaction date.

At year-end, the difference arising from the translation of receivables and payables denominated in a foreign currency, are recognized in suspense accounts in assets and liabilities ("Unrealized foreign currency gains or losses").

Where applicable, unrealized foreign exchange losses associated with non-hedged transactions are subject to a contingency provision.

6. Provisions

Provisions are recognized when:

- the Company has a present obligation towards a third party as a result of a past event or an ongoing one;
- it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation;
- a reliable estimate can be made of the amount of the obligation.

7. Financial instruments

L'Air Liquide S.A. applies the ANC regulation no. 2015-05 of July 2, 2015 related to financial forward and hedging instruments.

In accordance with its risk management policy, L'Air Liquide S.A. enters into forward currency purchases or sales in order to hedge the exposure to foreign exchange risk associated with transactions carried out in foreign currencies.

By symmetry, the foreign exchange gains or losses on forward currency purchases or sales is presented at the same time and in the same income statement caption as the hedged item.

Likewise, the unrealized gain from the hedging is presented within the unrealized foreign currency gains or losses statement caption, to offset the exchange differentials related to the revaluation of underlying receivables and debts. When the forward currency purchases or sales, hedge future transactions not yet recorded on the balance sheet, the fair value of these instruments represents an off balance sheet commitment.

Where applicable, when the financial instruments used do not constitute hedging transactions ("isolated open position"), the losses resulting from their year-end market value are provided for in the income statement. In accordance with the principle of prudence, unrealized gains are not recognized in the income statement.

8. Post-employment benefits

The Company applies the ANC recommendation no. 2013-02 of November 7, 2013 amended on November 5, 2021 (2^{nd} method) related to the recognition and measurement of retirement benefits and similar obligations

The Company provides its employees with various pension plans, termination benefits, jubilees (awards based on years of service) and other post-employment benefits for both active employees and retirees. These benefits are covered in two ways:

- by so-called defined contribution plans;
- by so-called defined benefit plans.

The Company grants both defined benefit and defined contribution plans.

Defined contribution plans are plans under which the employer's sole obligation is to pay regular contributions. The employer does not grant any guarantee on the future level of benefits paid to the employee or retiree ("means-based obligation"). The annual pension expense is equal to the contribution paid during the fiscal year which relieves the employer from any further obligation.

Defined benefit plans are those by which the employer guarantees the future level of benefits defined in the agreement, most often depending on the employee's salary and seniority ("result-based obligation"). Defined benefit plans can be:

- either financed by contributions to a fund specialized in managing the contributions paid;
- or managed internally.

In the case of defined benefit plans, retirement and similar obligations are measured by independent actuaries, according to the projected unit credit method. The actuarial calculations mainly take into account the following assumptions: salary increases, employee turnover, retirement date, mortality, inflation and appropriate discount rates.

Actuarial gains and losses exceeding the greater of 10% of the obligations or the fair value of plan assets at the beginning of the reporting period are amortized over the expected average working lives of the plan participants.

In accordance with article L. 123-13 of the French Commercial Code (Code de Commerce), the Company maintained its previous practices: obligations related to retirement termination payments and jubilees are provided whereas other retirement obligations related to defined benefit plans are not provided but are disclosed in the notes.

9. Revenue recognition

Revenue from the sale of goods is recognized when the risks and rewards of ownership have been transferred to the buyer.

Revenue associated with delivery of services is booked when delivery is completed.

10. Tax consolidation

L'Air Liquide S.A. has set up a tax consolidation group with the French subsidiaries in which it holds a direct or indirect interest exceeding 95%, as defined by article 223-A of the French Tax Code.

Each company calculates its tax provision as if it was taxed separately. L'Air Liquide S.A., as head of the tax consolidation group, recognizes as an expense the tax corresponding to its own profits. L'Air Liquide S.A. booked in exceptional income and expenses according to the Opinion 2005-G of the Emergency Committee of the C.N.C the impact of restatements and eliminations when determining taxable profit as a whole. Tax deferrals of companies with losses are recognized in tax liabilities.

11. Research and Development expenditures

Development costs shall be recognized as assets if and only if the Company can demonstrate all of the following:

- the project is clearly identified and the related costs are individualized and reliably monitored;
- the technical and industrial feasibility of the project is demonstrated;
- there is a clear intention to complete the project and use or sell the products arising from it;
- it is probable that the project will generate future economic benefits for the Company.

When these conditions are not satisfied, the work carried out does not systematically result in the completion of an intangible asset that will be available for use or sale, development costs generated are recognized as an expense when incurred.

ADDITIONAL NOTES ON THE BALANCE SHEET AND INCOME STATEMENTS

1. Significant events

In 2023,

- Following the decision of the Council of State ("Conseil d'état") in March 2023 which partially questioned the favorable judgment of May 12, 2022 of the European Court of Justice (CJEU) by referring the case to an Administrative Court of Appeal, the Company paid 36 million euros related to the equalization charge (see note 6 and 7).
- At the same time, the Company cancelled the receivable linked to the refund claim on the equalization charge paid for the years 2000 to 2004 (see note 10). This operation have no impact on the income statement, as the receivable was totally depreciated.

2. Revenue breakdown by geographical area

(in millions of euros)	2022	2023
France	57.4	62.0
Abroad	40.1	43.4
REVENUE	**97.5**	**105.4**

By the nature of its activities, the revenue of L'Air Liquide S.A. mainly corresponds to services and pension expenses recharged to its subsidiaries (see note 16.A).

3. Royalties and other operating income

In 2023, royalties and other operating income decreased mainly coming from royalties received from subsidiaries, due to the decrease of their sales.

Other operating income mainly includes change in inventories of goods and services, production of assets capitalized, operating subsidies, operating expense reclassifications, as well as operating provisions and impairment reversals.

4. Other operating expenses

Other operating expenses primarily consist of research and development costs and other external expenses such as subcontracting and maintenance costs, fees, travel expenses, telecommunication costs and rental expenses.

5. Depreciation, amortization and provision expenses

Depreciation, amortization and provision expenses break down as follows:

(in millions of euros)	2022	2023
Depreciation and amortization expenses	(14.4)	(15.0)
Provision expenses	(23.5)	(44.6)
DEPRECIATION, AMORTIZATION AND PROVISION EXPENSES	**(37.9)**	**(59.6)**

6. Financial income and expenses

- Financial income from equity affiliates amounts to 804.9 million euros in 2023 (414.1 million euros in 2022) including 399.1 million received from Air Liquide International.
- Interests, similar income and expenses break down as follows:

(in millions of euros)	2022	2023
Revenues from long-term loans and other financial revenues [a]	69.5	22.6
Other interest and similar income and expenses	(22.3)	(99.0)
INTERESTS, SIMILAR INCOME AND EXPENSES	**47.2**	**(76.4)**

(a) In 2022, revenues from long-term loans and other financial revenues include a 52.7 million euros net income resulting from the dissolution without liquidation of Chemoxal in L'Air Liquide S.A.

Increase of other interest and similar income and expenses is explained by higher level of indebtedness and increase of interest rates.

- Other financial income and expenses amount to -17.2 million euros in 2023 versus 24.6 million euros in 2022. It includes:
  - in 2022, the reversal of 24.9 million euros related to the 2021 provision booked for interests on arrears regarding the risk of equalization charge refund;
  - in 2023, a payment of the interest on arrears calculated on the equalization charge (-15 million euros) following the decision of the Council of State ("Conseil d'état") in March 2023 (see note 1).

7. Exceptional income and expenses

As part of the tax consolidation of L'Air Liquide S.A. and its tax consolidated French subsidiaries, an exceptional income of 87.4 million euros was booked in 2023 (108.1 million euros in 2022).

Exceptional income and expenses also include the impact of eliminations related to the tax consolidation regime in the amount of 15.3 million euros in 2023 (13.4 million euros in 2022).

In 2023, an amount of -21 million euros has been paid on the equalization charge following the decision of the Council of State ("Conseil d'état") in March 2023 which partially questioned the favorable judgment of May 12, 2022 of the European Court of Justicepean Union (CJEU) by referring the case to an Administrative Court of Appeal (see note 1).

The 2022 exceptional income and expenses included the reversal of a provision of 31.9 million euros related to the risk of equalization charge refund (excluding interest on arrears).

8. Corporate income tax

The total tax expense amounts to 19.9 million euros, compared to 29.9 million euros in 2022.

After allocation of add-backs, deductions and tax credits, it breaks down as follows:

(in millions of euros)	2022	2023
Net profit from ordinary activities before tax	(27.8)	(18.1)
Additional contributions on earnings [(a)]	(2.1)	(1.8)
TOTAL	**(29.9)**	**(19.9)**

(a) Social security contribution on earnings of 3.3%.

9. Intangible and tangible assets

Changes in gross value break down as follows:

(in millions of euros)	Gross value as of January 1, 2023	Additions	Disposals	Gross value as of December 31, 2023
Concessions, patents, licenses	120.1	6.0	(0.6)	125.5
Other intangible assets	186.7	2.6	(4.9)	184.4
INTANGIBLE ASSETS	**306.8**	**8.6**	**(5.5)**	**309.9**
Land and buildings	102.2	9.9	(0.6)	111.5
Plant, machinery and equipment	43.1	2.0	(11.5)	33.6
Other tangible assets	17.6	0.7	(0.3)	18.0
Tangible assets under construction and payments on account – tangible assets	8.3	5.9	(6.8)	7.4
TANGIBLE ASSETS	**171.2**	**18.5**	**(19.2)**	**170.5**
TOTAL	**478.0**	**27.1**	**(24.7)**	**480.4**

Changes in amortization, depreciation and impairment losses break down as follows:

(in millions of euros)	Amortization, depreciation, and impairment losses as of January 1, 2023	Amortization and depreciation	Decreases, disposals, scrappings	Amortization, depreciation and impairment losses as of December 31, 2023
Intangible assets	(275.5)	(9.0)	1.8	(282.7)
Tangible assets	(90.5)	(6.2)	12.4	(84.3)
Tangible assets	**(366.0)**	**(15.2)**	**14.2**	**(367.0)**

10. Financial assets

Changes in gross value break down as follows:

(in millions of euros)	Gross value as of January 1, 2023	Increases	Decreases	Gross value as of December 31, 2023
Equity investments	12,419.3	—	—	12,419.3
Other long-term investment securities [(a)]	9.8	122.2	(123.3)	8.7 [(b)]
Long-term loans	629.5	0.6	(0.4)	629.7
Other long-term financial assets	17.2	—	(16.1)	1.1 [(c)]
FINANCIAL ASSETS	**13,075.8**	**122.8**	**(139.8)**	**13,058.8**

(a) The change in other long-term investment securities mainly corresponds to:
- *the acquisition and sale of Company treasury shares under the liquidity contract for 104.0 million euros and -105.1 million euros respectively;*
- *the acquisition of 120,000 of the Company treasury shares (for the purpose of cancellation) for 18.2 million euros and their cancellation on September 28, 2023.*

At the 2023 year-end:

(b) "Other long-term investment securities" include 2,100 shares held under the liquidity contract for an amount of 0.4 million euros;

(c) "Other long-term financial assets": the receivable linked to the refund claim on the equalization charge paid for the years 2000 to 2004 for 9.5 million euros and the interest on arrears for 6.6 million euros has been written off. This operation has no impact in the income statement because the receivable was totally depreciated.

11. Impairment, allowances and provisions

A. Impairment and allowances

Impairment are recognized when the asset's carrying amount is lower than its book value.

They break down as follows:

(in millions of euros)		2022	Charges / Increase	Reversals	2023
Intangible and tangible assets		(6.2)	—	—	(6.2)
Equity investments		—	—	—	—
Other long-term investment securities		(8.2)	(0.2)	—	(8.4)
Inventories and work-in-progress		—	—	—	—
Operating receivables		(13.0)	(36.1)	2.8	(46.3)
IMPAIRMENT		**(27.4)**	**(36.3)**	**2.8**	**(60.9)**
Whose charges and reversals:		*operating items*	*(0.6)*	2.8	
		financial items	*(15.0)*	—	
		exceptional items	*(20.7)*	—	

B. Provisions

Provisions mainly include:

- foreign exchange provisions;
- third party or employee contingency and litigation provisions;
- provisions to cover the future charge of the delivery of performance shares (21.6 million in 2023 and 14.5 million euros in 2022);
- jubilee awards and vested rights with regard to retirement benefits (49.1 million euros in 2023 and 30.0 million euros in 2022).

(in millions of euros)		2022	Charges	Reversals	2023
Provisions for contingencies		10.1	9.8	(2.8)	17.1
Provisions for losses		44.9	35.6	(9.4)	71.1
PROVISIONS		**55.0**	**45.4**	**(12.2)**	**88.2**
Whose charges and reversals:		*operating items*	*44.0*	*(11.4)*	
		financial items			
		exceptional items	*1.4*	*(0.8)*	

Charges mainly relate to provisions for exchange risks for 8.3 million euros, provisions for jubilee awards and vested rights with regard to retirement termination payments for 20.4 million euros and provisions to cover the future charge of the delivery of performance shares for 15.2 million euros.

Reversals cover utilization of -8.1 million euros of provisions to cover the future charge of the delivery of performance shares.

12. Short-term financial investments

The item breaks down as follows:

(in millions of euros)	Gross value as of December 31, 2022	Gross value as of December 31, 2023
Company treasury shares	115.2	150.6
Other short-term financial investments	—	—
SHORT-TERM FINANCIAL INVESTMENTS	**115.2**	**150.6**

At the end of 2023, “Company treasury shares” consisted in 1,100,477 shares (951,833 shares in 2022) allocated to the objective of the implementation of performance shares plans to employees.

During the year 2023, the Company bought 430,000 shares (for an amount of 64.9 million euros) allocated to the implementation of performance shares plans to employees and distributed to employees 281,356 performance shares, allocated to this objective, for -29.5 million euros.

13. Shareholders' equity

As of December 31, 2023, the share capital is made of 524,516,778 shares with a par value of 5.50 euros.

The portion of share capital arising from the special revaluation reserve amounts to 71.4 million euros.

(in millions of euros)	As of December 31, 2022 (before appropriation of earnings)	Appropriation of 2022 net profit	Capital increases	Capital decrease	Other changes	As of December 31, 2023 (before appropriation of earnings)
Share capital [(b)]	2,879.0	—	6.5	(0.7)	—	2,884.8
Additional paid-in capital [(b)]	2,349.0	—	116.2	(17.5)	—	2,447.7
Revaluation reserve	23.9	—	—	—	—	23.9
Reserves:						
■ Legal reserve	261.3	26.5	—	—	—	287.8
■ Tax-driven reserves	307.8	—	—	—	—	307.8
■ Translation reserve	7.7	—	—	—	—	7.7
■ Other reserves	73.0	—	—	—	—	73.0
Retained earnings [(c)]	4,356.8	(689.2)	—	—	4.2	3,671.8
Net profit for the year	924.7	(924.7)	—	—	977.2	977.2
Investment grants	0.2	—	—	—	—	0.2
Accelerated depreciation [(d)]	2.8	—	—	—	0.1	2.9
SHAREHOLDERS' EQUITY	**11,186.2**	**(1,587.4)** [(a)]	**122.7**	**(18.2)**	**981.5**	**10,684.8**

(a) Following the decision of the Combined Annual Shareholders' Meeting of May 3, 2023.
(b) The change in Share capital and Additional paid-in capital results from the following transactions:
- *capital decrease in the amount of -0.7 million euros by cancelling 120,000 treasury shares, as decided by the Board of Directors on September 28, 2023. The Additional paid-in capital was reduced by the amount of premiums related to these shares, i.e. -17.5 million euros;*
- *capital increase of 4.1 million euros resulting from the subscription of 746,401 shares by employees of the Group ascertained on December 7, 2023 by the Chief Executive Officer, under powers granted by the Board of Director's on July 26, 2023. The additional paid-in capital was increased by 90.9 million euros and has been reduced by the costs related to share capital increase for -2.8 million euros;*
- *capital increases of 2.4 million euros resulting from the exercise of 440,106 subscription options. The Additional paid-in capital was increased by the premiums related to these share capital increases, i.e. 28.1 million euros.*

(c) The change in Retained earnings also includes the difference between the estimated loyalty dividend and the loyalty dividend actually paid and the cancellation of the dividend pertaining to treasury shares.
(d) The change in the Accelerated depreciation results from the new accelerated depreciation in accordance with asset depreciation and amortization policies.

14. Debt maturity analysis

	December 31, 2023		
(in millions of euros)	Gross	<= 1 year	> 1 year
Long-term loans	629.7	0.6	629.1
Other long-term investments	1.1	—	1.1
Operating receivables	775.8	664.0	111.8
Current account loans with subsidiaries [(a)]	267.6	267.6	—
ASSETS	**1,674.2**	**932.2**	**742.0**

(a) Current account loans agreements with subsidiaries are concluded for an indefinite period.

	December 31, 2023			
(in millions of euros)	Gross	<= 1 year	> 1 to <= 5 years	> 5 years
Other bonds [(a)]	—	—	—	—
Bank borrowings	—	—	—	—
Other borrowings	251.9	1.9	250.0	—
Operating payables	687.1	612.4	74.7	—
Current account borrowings with subsidiaries [(b)]	2,619.6	2,619.6	—	—
DEBTS	**3,558.6**	**3,233.9**	**324.7**	**—**

(a) The 300 million euros bond at the end of December 31, 2022 has been reimbursed in September 2023.
(b) Current account borrowings agreements with subsidiaries are concluded for an indefinite period.

15. Financial instruments

Unsettled derivatives as of December 31, 2023 break down as follows:

(in millions of euros)	December 31, 2023	
	Carrying value	Fair value
Currency forwards		
■ Buy	69.6	(1.8)
■ Sell	285.9	3.1
TOTAL		**1.3**

The fair value of derivative instruments is based on the value of the contract on the market at the closing date.

All of these instruments are allocated to hedged operations. There is therefore no isolated open position whose change in fair value would have a direct impact on the income statement.

16. Retirement and similar plans

A. Group retirement benefit guarantee agreement

In France, Air Liquide grants additional benefits to retirees (3,059 retirees as of December 31, 2023). These benefits provide a supplemental retirement income based on final pay, which is paid in addition to other normal retirement benefits. This plan is closed to employees under the age 45, or with less than 20 years of service as of January 1, 1996. These plans are unfunded. The annual amount paid with regards to additional benefits cannot exceed originally 12% of total payroll or, in some case, 12% of pre-tax profits of companies involved. This 12% threshold will be proportionately reduced by comparing the number of plan beneficiaries for the year to the number of plan beneficiaries for the previous year. The additional benefit granted by Air Liquide is indexed to the pension revaluation rates of normal and supplemental retirement benefits up to a certain annuity threshold without any indexation beyond. This additional benefit was funded subsequently to the article 50 of the law of January 20, 2014 securing the future and fairness of pensions plans.

The contributions amounted to 18.9 million euros after reinvoicing subsidiaries (19.2 million euros in 2022). Excluding the impact of timelines, and until the plan ends, the actuarial value of obligations vis-à-vis retirees and those eligible as of December 31, 2023 amounts to 390.9 million euros.

Based on the assumptions used for the valuation of the retirement obligations, an estimated 206.4 million euros will be recharged to the subsidiaries of L'Air Liquide S.A. as and when benefits are paid to the retirees.

B. Externally funded plan

L'Air Liquide S.A. grants to employees not covered by the preceding plan (1,117 employees as of December 31, 2023) and with at least six months of service, the benefit from an externally funded defined contribution plan. Contributions to this plan are jointly paid by the employer and employee. For 2023, employer contributions amounted to 7.2 million euros (8.4 million euros in 2022).

C. Retirement termination payments and jubilees

The corresponding obligations are provided for an amount of 48.1 million euros and 1.0 million euros, respectively.

D. Calculation of actuarial assumptions and methods

The calculations with respect to the Group's retirement benefit guarantee agreement, retirement termination payments and jubilees are performed by independent actuaries using the projected unit credit method.

Actuarial gains and losses exceeding the greater of 10% of the obligations related to retirement termination payments and unrecognized past service costs are amortized over the expected average working lives of the plan participants. As of December 31, 2023, the amounts stand at -0.5 million euros (-5.7 million euros in 2022).

The actuarial assumptions (turnover, mortality, retirement age, salary increase) vary according to demographic and economic conditions.

The discount rates used to determine the present value of obligations are based on Government bonds or High-quality Corporate bonds, with the same duration as the obligations at the valuation date (3.20% as of December 31, 2023).

E. Change in retirement obligations and similar benefits

Company obligations with respect to pension plans and similar benefits break down as follows:

(in millions of euros)	Defined benefit plan	Retirement indemnities	Jubilees	Total
OBLIGATIONS AS OF JANUARY 1, 2023	**393.8**	**40.4**	**1.0**	**435.2**
Service cost		2.0	—	2.0
Interest cost	13.1	1.4		14.5
Plan amendments				—
Benefit payments	(40.7)	(1.0)		(41.7)
Actuarial (gains) / losses	24.7	5.3		30.0
OBLIGATIONS AS OF DECEMBER 31, 2023	**390.9**	**48.1**	**1.0**	**440.0**

17. Accrued income and accrued expenses

(in millions of euros)	December 31, 2023
Accrued income	
Other long-term financial assets	0.6
Operating receivables	220.5
ACCRUED INCOME	**221.1**
Accrued expenses	
Other bonds	—
Other borrowings	1.9
Operating payables	364.7
ACCRUED EXPENSES	**366.6**

18. Deferred taxes

Deferred taxes arise from timing differences between the tax regime and the accounting treatment of income and expenses. Depending on the nature of the timing differences, these deferred taxes will increase or decrease the future tax expense and are not recorded as per the French Chart of Accounts.

Deferred taxes are estimated as follows:

(in millions of euros)	December 31, 2022	December 31, 2023
Deferred tax assets (decrease in future tax expense)	5.3	17.8
Deferred tax liabilities (increase in future tax expense)	—	—

The deferred taxes were calculated taking into account the 3.3% social security contribution on earnings i.e. a general rate of 25.83%.

OTHER INFORMATIONS

19. Items concerning related companies

The Company conducted related party transactions with its wholly owned subsidiaries or subsidiaries that were directly or indirectly controlled.

	December 31, 2023	
(in millions of euros)	Gross	Including related companies
Balance sheet		
Long-term loans	629.7	625.6
Other long-term financial assets	1.1	—
Operating receivables	775.8	708.0
Current account loans with subsidiaries	267.6	267.6
Other borrowings	251.9	251.9
Operating payables	687.1	262.7
Current account borrowings with subsidiaries	2,619.6	2,619.6
Income statement		
Financial income from equity affiliates	804.9	804.9
Interests, similar income and expenses	(76.4)	(70.8)
Other financial income and expenses	(17.2)	(0.2)

20. Off-balance sheet commitments

Off-balance sheet commitments break down as follows:

(in millions of euros)	December 31, 2022	December 31, 2023
Commitments given		
Endorsements, securities and guarantees given [(a)]	1,109.1	1,455.8
To Air Liquide Finance and Air Liquide US LLC on transactions performed [(b)]	10,635.6	9,546.9
Firm purchase orders for fixed assets	5.1	27.1
COMMITMENTS GIVEN	**11,749.8**	**11,029.8**

(a) Endorsements, securities and guarantees given mainly include the joint and several liability guarantee granted for affiliates linked to the European program of non-recourse assignments of trade receivable in an amount of 517 million euros (608 million euros as of December 31, 2022) and the joint and several liability guarantee of the subsidiaries Société Européenne de Gestion de l'Énergie and Air Liquide France Industrie in connection with the energy purchases.

(b) L'Air Liquide S.A. holds 100% of the French subsidiary Air Liquide Finance, which manages the Group's cash position and interest rate risk, as well as financing. In addition, Air Liquide Finance holds 100% of Air Liquide US LLC, which borrows on the US market.
The only activity of Air Liquide Finance and Air Liquide US LLC is to finance the Group. As a consequence, L'Air Liquide S.A. is required to guarantee any issuances performed by these companies.

21. Remuneration paid to members of Executive Management and the Board of Directors

The remuneration (short-term benefits: fixed and variable portions, benefits in kind, retirement termination payments, Directors' attendance fees) paid by the Company to members of Executive Management and the Board of Directors respectively, amounts to:

(in millions of euros)	2023
Remuneration of the Board of Directors	0.8
Remuneration of the Chairman of the Board	0.8
Remuneration of Executive Management	3.6
TOTAL	**5.2**

In 2023, the Company also paid contributions to external organizations for the benefit of Mr Benoît Potier:

- for the year 2022, under the collective life insurance policy (91,897 euros) and the collective pension insurance contract (141,667 euros, divided between a payment to the insurer and a payment to Mr Benoît Potier to cover social security contributions and taxes due on payments made to the insurer),
- for the year 2023, under the collective death and disability benefits plan (12,634 euros),
  i.e. a total amount of 246,198 euros.

In 2023, the Company also paid contributions to external organizations for the benefit of Mr François Jackow for the year 2023 in respect of defined contribution pension plans (19,939 euros), the collective death and disability benefits plan (12,634 euros) and the collective healthcare plan (414 euros), i.e. a total of 32,987 euros.

In 2024, the Company will also pay contributions related to the year 2023, under the collective pension insurance contract, for an amount of 341,231 euros (split between a payment to the insurer and a payment to Mr François Jackow to cover social security contributions and taxes due on payments made to the insurer).

22. Average number of employees

The average number of employees is:

	2022	2023
Engineers and executives	916	929
Supervisory staff	191	177
Employees	26	37
Laborers	1	1
TOTAL	**1,134**	**1,144**

23. Subsidiaries and affiliates information

(in thousands of euros)	Share capital as of December 31, 2023	Other equity as of December 31, 2023	% share holding	Carrying amount of shares held after the revaluations of 1976, 1978 and 1979			Loans and advances granted by the Company and not repaid	Guarantees and endorsements given by the Company	2022 net revenue [(a)]	Net profit (or loss) for 2022 [(a)]	Dividends collected by the Company during 2023
				Gross	Net	Including revaluation difference					
A. Detailed information on affiliates whose carrying amounts exceed 1% of the capital of the Company required to publish its financial statements											
a) Companies operating in France											
Air Liquide International [(b)] – 75, quai d'Orsay – 75007 Paris	3,151,080	5,935,633	100.00%	9,122,262	9,122,262	20,706	109,815		1,624	812,465	399,137
Air Liquide France Industrie – 6, rue Cognacq-Jay – 75007 Paris	72,453	537,243	100.00%	292,872	292,872		—		1,589,544	137,339	94,914
Air Liquide Finance – 6, rue Cognacq-Jay – 75007 Paris	359,722	460,041	100.00%	284,562	284,562	480	681,583	9,365,871	—	413,291	50,149
Air Liquide Santé (International) – 75, quai d'Orsay – 75007 Paris	38,477	368,776	100.00%	331,728	331,728	6,301	16,220		—	121,159	115,000
Air Liquide Investissements d'Avenir et de Démonstration – 6, rue Cognacq-Jay – 75007 Paris	85,050	5,181	100.00%	85,050	85,050		—		—	6,107	
Air Liquide Biogas International (ex Air Liquide International Participations) – 6, rue Cognacq-Jay – 75007 Paris	59,390	33,159	100.00%	116,011	116,011		—		27,428	1,790	
b) Companies operating outside of France											
Air Liquide Industriegase GmbH & Co. KG – Hans-Günther-Sohl-Strasse 5 – 40235 Düsseldorf - Allemagne	10	2,713,912	100.00%	2,106,474	2,106,474		—		168,029	4,517	70,000
B. General information on other subsidiaries and affiliates											
a) French companies (together)				75,917	75,917	16,068	9,400	—	—	—	66,597
b) Foreign companies (together)				3,211	3,200		—	—	—	—	9,078

(a) *Most recent year-end accounts approved by the competent decision-making bodies.*
(b) *Holding company.*

Statutory auditors' report on the annual Financial Statements

This is a translation into English of the Statutory Auditors' report on the financial statements of the Company issued in French and it is provided solely for the convenience of English-speaking users. This Statutory Auditors' report includes information required by European regulations and French law, such as information about the appointment of the Statutory Auditors or verification of the Management Report and other documents provided to the shareholders.This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

To the Annual General Meeting,

OPINION

In compliance with the engagement entrusted to us by your Annual General Meeting, we have audited the accompanying financial statements of L'Air Liquide for the year ended December 31, 2023.

In our opinion, the financial statements give a true and fair view of the assets and liabilities and of the financial position of the Company as at December 31, 2023 and of the results of its operations for the year then ended in accordance with French accounting principles.

The audit opinion expressed above is consistent with our report to the Audit and Accounts Committee.

BASIS FOR OPINION

Audit Framework

We conducted our audit in accordance with professional standards applicable in France. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under those standards are further described in the Statutory Auditors' Responsibilities for the Audit of the Financial Statements section of our report.

Independence

We conducted our audit engagement in compliance with the independence requirements of the French Commercial Code (Code de commerce) and the French Code of Ethics for Statutory Auditors (Code de déontologie de la profession de commissaire aux comptes) for the period from January 1, 2023 to the date of our report, and specifically we did not provide any prohibited non-audit services referred to in Article 5(1) of Regulation (EU) No. 537/2014.

JUSTIFICATION OF ASSESSMENTS – KEY AUDIT MATTERS

In accordance with the requirements of Articles L. 821-53 and R. 821-180 of the French Commercial Code (Code de commerce) relating to the justification of our assessments, we inform you of the key audit matters relating to risks of material misstatement that, in our professional judgment, were of most significance in our audit of the financial statements of the current period, as well as how we addressed those risks.

These matters were addressed in the context of our audit of the financial statements as a whole and in forming our opinion thereon, and we do not provide a separate opinion on specific items of the financial statements.

Equity investments measurement

Risk identified

As at December 31, 2023, the net book value of the equity investments amounts to 12 419,3 million euros and represents 86,6% of the total balance sheet. Equity investments are recognized at their initial consideration, excluding acquisition costs and after considering legal reevaluation if any (as provided by Law 76-1232 of December 29, 1976).

As disclosed in note "2.D. Accounting policies – Equity investments" to the statutory financial statements, when the carrying amount (determined applying the market multiples method based on the Group market capitalization or the estimated cash flows method or the method of net asset value re-measured at fair value) is lower than the net book value of the equity investment, an impairment loss is recognized for the difference.

The selection of the method used to determine the carrying amount requires significant judgement of the Company.

Due to the significant equity investments balance and the impact of the method retained to determine the carrying amount, we have considered that the measurement of the equity investments as a key audit matter.

Our response

Our procedures mainly consisted in considering, based on information provided by the Company, the valuation methods applied by the Company, and assessing :

- the assumptions used to determine the re-measured net asset;
- the methodology and the results of the tests performed based on the Group market capitalization;
- the appropriateness of information included in notes "2.D. Accounting policies – Equity investments", "10. Financial assets" and "11. Impairment, allowances and provisions" to the statutory financial statements.

SPECIFIC VERIFICATIONS

We have also performed, in accordance with professional standards applicable in France, the specific verifications required by laws and regulations.

Information given in the Management Report and in the other documents with respect to the financial position and the Financial Statements provided to the Shareholders

We have no matters to report as to the fair presentation and the consistency with the financial statements of the information given in the Board of Directors Management Report and in the other documents with respect to the financial position and the financial statements provided to the Shareholders.

We attest the fair presentation and the consistency with the financial statements of the information relating to payment deadlines mentioned in Article D. 441-6 of the French Commercial Code (Code de commerce).

Report on corporate governance

We attest that the Board of Directors' Report on Corporate Governance sets out the information required by Articles L. 225-37-4, L. 22-10-10 and L. 22-10-9 of the French Commercial Code (Code de commerce).

Concerning the information given in accordance with the requirements of Article L. 22-10-9 of the French Commercial Code (Code de commerce) relating to the remuneration and benefits received by the directors and any other commitments made in their favor, we have verified its consistency with the financial statements, or with the underlying information used to prepare these financial statements and, where applicable, with the information obtained by your Company from companies controlled thereby, included in the consolidation scope. Based on these procedures, we attest the accuracy and fair presentation of this information.

With respect to the information relating to items that your Company considered likely to have an impact in the event of a takeover bid or exchange offer, provided pursuant to Article L. 22-10-11 of the French Commercial Code (Code de commerce), we have agreed this information to the source documents communicated to us. Based on these procedures, we have no observations to make on this information.

Other information

In accordance with French law, we have verified that the required information concerning the purchase of investments and controlling interests and the identity of the shareholders and holders of voting rights has been properly disclosed in the Management Report.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

Format of the presentation of the Financial Statements included in the Annual Financial Report

We have also verified, in accordance with the professional standard applicable in France relating to the procedures performed by statutory auditors regarding the annual and consolidated financial statements prepared in the European single electronic format, that the preparation of the financial statements included in the annual financial report mentioned in Article L. 451-1-2, I of the French Monetary and Financial Code (Code monétaire et financier), prepared under the Chief Executive Officer's responsibility, complies with the single electronic format defined in Commission Delegated Regulation (EU) No. 2019/815 of 17 December 2018.

On the basis of our work, we conclude that the preparation of the financial statements included in the annual financial report complies, in all material respects, with the European single electronic format.

Appointment of the Statutory Auditors

We were appointed as Statutory Auditors of the Annual General Meeting held on May 12, 2016 for PricewaterhouseCoopers Audit and on May 4, 2022 for KPMG S.A.

As at December 31, 2023, PricewaterhouseCoopers Audit was in its eighth year of uninterrupted engagement and KPMG S.A. in its second year.

RESPONSIBILITIES OF MANAGEMENT AND THOSE CHARGED WITH GOVERNANCE FOR THE FINANCIAL STATEMENTS

Management is responsible for the preparation and fair presentation of the financial statements in accordance with French accounting principles and for such internal control as Management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, Management is responsible for 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 it is expected to liquidate the Company or to cease operations.

The Audit and Accounts Committee is responsible for monitoring the financial reporting process and the effectiveness of internal control and risk management systems and where applicable, its internal audit, regarding the accounting and financial reporting procedures.

The financial statements were approved by the Board of Directors.

STATUTORY AUDITORS' RESPONSIBILITIES FOR THE AUDIT OF THE FINANCIAL STATEMENTS

Objectives and audit approach

Our role is to issue a report on the financial statements. Our objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users made on the basis of these financial statements.

As specified in Article L. 821-55 of the French Commercial Code (Code de commerce), our statutory audit does not include assurance on the viability of the Company or the quality of management of the affairs of the Company.

As part of an audit conducted in accordance with professional standards applicable in France, the statutory auditor exercises professional judgment throughout the audit and furthermore:

- identifies and assesses the risks of material misstatement of the financial statements, whether due to fraud or error, designs and performs audit procedures responsive to those risks, and obtains audit evidence considered to be sufficient and appropriate to provide a basis for his opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtains an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control;
- evaluates the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by Management in the financial statements;
- assesses the appropriateness of Management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. This assessment is based on the audit evidence obtained up to the date of his audit report. However, future events or conditions may cause the Company to cease to continue as a going concern. If the statutory auditor concludes that a material uncertainty exists, there is a requirement to draw attention in the audit report to the related disclosures in the financial statements or, if such disclosures are not provided or inadequate, to modify the opinion expressed therein;
- evaluates the overall presentation of the financial statements and assesses whether these statements represent the underlying transactions and events in a manner that achieves fair presentation.

REPORT TO THE AUDIT AND ACCOUNTS COMMITTEE

We submit to the Audit and Accounts Committee a report which includes in particular a description of the scope of the audit and the audit program implemented, as well as the results of our audit. We also report significant deficiencies, if any, in internal control regarding the accounting and financial reporting procedures that we have identified.

Our report to the Audit and Accounts Committee includes the risks of material misstatement that, in our professional judgment, were of most significance in the audit of the financial statements of the current period and which are therefore the key audit matters that we are required to describe in this report.

We also provide the Audit and Accounts Committee with the declaration provided for in Article 6 of Regulation (EU) No. 537/2014, confirming our independence within the meaning of the rules applicable in France as set out in particular in Articles L. 821-27 to L. 821-34 of the French Commercial Code (Code de commerce) and in the French Code of Ethics for Statutory Auditors (Code de déontologie de la profession de commissaire aux comptes). Where appropriate, we discuss with the Audit and Accounts Committee the risks that may reasonably be thought to bear on our independence, and the related safeguards.

Neuilly-sur-Seine et Paris-La Défense, March 4, 2024

The Statutory Auditors

French original signed by

PricewaterhouseCoopers Audit		KPMG S.A.	
Olivier Lotz	Cédric Le Gal	Valérie Besson	Laurent Genin

Five-year summary of Company results

(Articles R. 225-83 and R. 225-102 of the French Commercial Code)

	2019	2020	2021	2022	2023
I - Share capital at the end of the year					
a) Share capital *(in euros)* [(a) (b) (c)]	2,602,080,327	2,605,133,982	2,614,100,704	2,878,976,491	2,884,842,279
b) Number of outstanding ordinary shares	473,105,514	473,660,724	475,291,037	523,450,271	524,516,778
c) Number of shares with loyalty dividend entitlement [(d)]	134,154,877	131,753,261	134,993,503	149,161,232	145,320,778
d) Convertible bonds					
II - Operations and results of the year (in millions of euros)					
a) Revenue	117.4	86.8	96.7	97.5	105.4
b) Net profit before tax, employee profit-sharing, depreciation, amortization and provisions	622.4	1,378.9	1,072.1	998.9	1,100.2
c) Corporate income tax	12.5	8.8	16.0	29.9	19.9
d) Employee profit-sharing for the year	2.7	2.8	3.2	3.9	4.3
e) Net profit after tax, employee profit-sharing, depreciation, amortization and provisions	567.7	1,333.8	950.9	924.7	977.2
f) Distributed profit	1,316.6	1,338.1	1,417.5	1,587.4	1,725.0
III - Per share data (in euros)					
a) Net profit after tax, employee profit-sharing, but before depreciation, amortization and provisions					
■ over the number of ordinary shares outstanding	1.28	2.89	2.22	1.84	2.05
■ over the adjusted number of shares [(e)]	1.17	2.63	2.02	1.85	2.06
b) Net profit after tax, employee profit-sharing, depreciation, amortization and provisions					
■ over the number of ordinary shares outstanding	1.20	2.82	2.00	1.77	1.86
■ over the adjusted number of shares [(e)]	1.09	2.56	1.82	1.77	1.87
c) Dividend allocated to each share					
■ over the number of ordinary shares outstanding	2.70	2.75	2.90	2.95	3.20
■ over the adjusted number of shares [(f)]	2.45	2.49	2.63	3.03	3.20
d) Loyalty dividend					
■ over the number of ordinary shares outstanding	0.27	0.27	0.29	0.29	0.32
■ over the adjusted number of shares [(f)]	0.24	0.24	0.26	0.30	0.32
IV - Employees working in France					
a) Average number of employees during the year	1,032	1,066	1,121	1,134	1,144
b) Total payroll for the year *(in millions of euros)*	156.6	155.3	162.9	171.0	186.1
c) Amounts paid with respect to employee benefits during the year (social security, staff benefits, etc.) *(in millions of euros)*	82.5	80.1	83.4	76.9	78.5

(a) *Using the authorization granted by the 15th resolution of the Combined Annual Shareholders' Meeting of May 16, 2018, the 14th resolution of the Combined Annual Shareholders' Meeting of May 4, 2021, the 18th resolution of the Combined Annual Shareholders' Meeting of May 4, 2022 and the 18th resolution of the Combined Annual Shareholders' Meeting of May 3, 2023, the Board of Directors made the following decisions:*
- *in its meeting of May 7, 2019, capital decrease by cancellation of 953,000 treasury shares;*
- *in its meeting of July 28, 2021, capital decrease by cancellation of 165,000 treasury shares;*
- *in its meeting of July 27, 2022, capital decrease by cancellation of 1,098,900 treasury shares;*
- *in its meeting of September 28, 2023, capital decrease by cancellation of 120,000 treasury shares.*

(b) *Using the authorization granted by the 16th resolution of the Combined Annual Shareholders' Meeting of May 16, 2018, the Board of Directors decided in its meeting of July 29, 2019, the granting of one free share for ten existing shares, and the granting of a 10% bonus for shares held in registered form from December 31, 2016 to October 8, 2019.*
Using the authorization granted by the 19th resolution of the Combined Annual Shareholders' Meeting of May 4, 2022, the Board of Directors decided in its meeting of May 4th, 2022, the granting of one free share for ten existing shares, and the granting of a 10% bonus for shares held in registered form from December 31, 2019 to June 7, 2022.

(c) *Using the authorizations granted by the resolutions of Combined Annual Shareholders' Meetings of May 7, 2013 and May 12, 2016,*
- *the Board of Directors noted in its meeting of September 28, 2023 the issuance of 364,079 shares arising from:*
  - *the exercise of 254,768 options subscribed at the price of 67.15 euros;*
  - *the exercise of 72,350 options subscribed at the price of 70.42 euros;*
  - *the exercise of 20,048 options subscribed at the price of 76.23 euros;*
  - *the exercise of 3,430 options subscribed at the price of 69.33 euros;*
  - *the exercise of 4,326 options subscribed at the price of 77.54 euros;*
  - *the exercise of 9,157 options subscribed at the price of 87.97 euros.*
- the Board of Directors noted in its meeting of February 19, 2024 the issuance of *76,027* shares arising from:
  - *the exercise of 32,298 options subscribed at the price of 67.15 euros;*
  - *the exercise of 14,727 options subscribed at the price of 70.42 euros;*
  - *the exercise of 15,973 options subscribed at the price of 76.23 euros;*
  - *the exercise of 2,914 options subscribed at the price of 69.33 euros;*
  - *the exercise of 2,967 options subscribed at the price of 77.54 euros;*
  - *the exercise of 2,148 options subscribed at the price of 87.97 euros.*

Using the authorization granted by the 17th resolution of the Combined Annual Shareholders' Meeting of May 4, 2021, the Chairman and Chief Executive Officer, pursuant to the delegation granted by the Board of Directors in its meeting of February 9, 2021 with the right to sub-delegate and confirmed on July 28, 2021, has delegated his authority during the Board of Directors meeting hold in July, 28 2021 to the Executive Vice President who noted on December 9, 2021 the employee-reserved issuance of 1 098 738 new shares:
- *984,988 new shares subscribed in cash at a price of 113.23 euros per share, of which 2,760 shares were subscribed as part of the contribution paid by the Company (1 bonus share for 4 shares subscribed with a maximum of 3 bonus shares per employee);*
- *113,750 new shares subscribed in cash at a price of 120.31 euros per share.*

Using the authorization granted by the 21st resolution of the Combined Annual Shareholders' Meeting of May 3, 2023, the Chief Executive Officer, pursuant to the delegation granted by the Board of Directors in its meeting of July 26th, 2023, noted on December 7, 2023 the employee-reserved issuance of 746,401 new shares:
- *675,617 new shares subscribed in cash at a price of 126.49 euros per share, of which 2,865 shares were subscribed as part of the contribution paid by the Company (1 bonus share for 1 shares subscribed, 2 bonus shares for 3 shares subscribed, 3 bonus shares for 6 or more shares subscribed per employee);*
- *70,784 new shares subscribed in cash at a price of 134.40 euros per share.*

(d) *Beginning December 31, 1995, shareholders holding their shares in registered form for at least two years at the period-end, and who will retain these shares in this form until the dividend payment date, will receive a dividend with a 10% bonus compared to the dividend paid to other shares. The difference between the loyalty dividend calculated on the number of shares outstanding as of the period-end and the loyalty dividend actually paid shall be allocated to retaining earnings.*

(e) *Adjusted to take into account, in the weighted average, the capital increases performed via cash subscriptions and treasury shares.*

(f) *Adjusted to account for share capital movements.*

Internet

See our annual publications:
Annual Report, Universal Registration Document,
Sustainability report, Shareholder's Practical Guide and more...
www.airliquide.com

YouTube

Air Liquide Corp Channel

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Air Liquide - Company established for the study and application of processes developed by Georges Claude with issued capital of €2,884,842,279.00