



## Overall Assessment

### Planet Tracker:

**Air Liquide is expected to align with a 2°C warming scenario by 2030.**

The assessment of Air Liquide's climate transition strategy highlights significant efforts alongside key challenges. The company is investing heavily in energy transition, allocating 50% of its planned EUR 16 billion investments by 2025 toward decarbonisation projects. However, without clear links between these investments and specific emission reduction outcomes, it is difficult to confirm its alignment with a 1.5°C pathway by 2030. Over the past four years, Air Liquide's total greenhouse gas (GHG) emissions have decreased slightly by 0.5%, but upstream Scope 3 emissions have risen significantly by 53.1%. The company does not have a material Scope 3 target. Positive steps include engaging with suppliers and customers, exiting the American Fuel & Petrochemical Manufacturers (AFPM) Association and incorporating climate targets into executive compensation, reflecting a strong commitment to sustainability. Nonetheless, to progress toward a 1.5°C alignment, the company would need to address key gaps in its transition plan. This includes setting specific targets for upstream Scope 3 emissions, enhancing transparency in climate-risk impact and management practices, and ensuring that capital investments are directly linked to measurable emission reductions. Otherwise, the company is likely to lean towards a 2°C alignment scenario, rather than the more ambitious 1.5°C by 2030 or even the targeted well below 2°C pathway by 2035.



## Climate Alignment

- According to Planet Tracker's analysis, from 2020 to 2023, Air Liquide's total GHG emissions slightly decreased by 0.5%, but upstream Scope 3 emissions increased significantly by 53.1%.
- Without further mitigation efforts, Air Liquide's emissions are projected to rise by 24% by 2030, potentially failing to align with a 1.5°C pathway by 2030 or a well-below 2°C warming scenario by 2035.



## Policy and Governance

- Air Liquide engages suppliers and customers in key emissions reduction initiatives, but the lack of specific mitigation targets limits the ability to assess their impact. Still, the company is strengthening its alignment with climate action, highlighted by its exit from the AFPM Association.
- In addition, the company's executive compensation includes sensible links to climate targets, integrating sustainability objectives into management incentives.



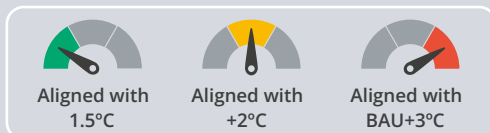
## Risk Analysis

- Air Liquide recognises significant regulatory and physical climate risks but does not provide detailed financial disclosures on their potential impact.
- The lack of transparency in the company's risk management strategies limits stakeholders' ability to assess its full preparedness for climate-related risks.



## Strategy Assessment

- Air Liquide has committed substantial investments toward energy transition initiatives, earmarking 50% of its planned EUR 16 billion investments by 2025 for decarbonisation projects.
- However, despite the company's sensible plan and high investments, without clear links between these investments and quantified emission reduction outcomes, it is challenging to conclude the company's alignment with a 1.5°C pathway by 2030.



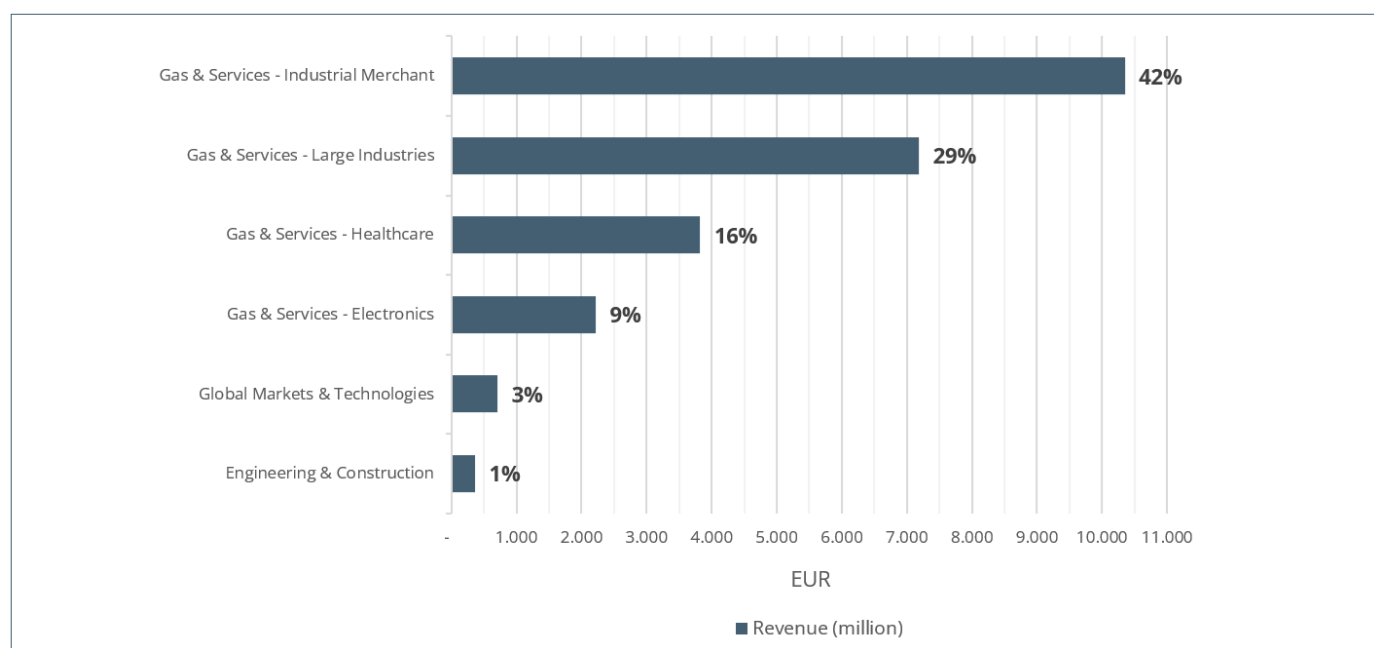
This report is one of a series examining the climate transition plans of companies in the Climate Action 100+ list. This project is separate to and not affiliated with Climate Action 100+.

Download the Shareholder [Engagement Sheet](#).

## Company Overview

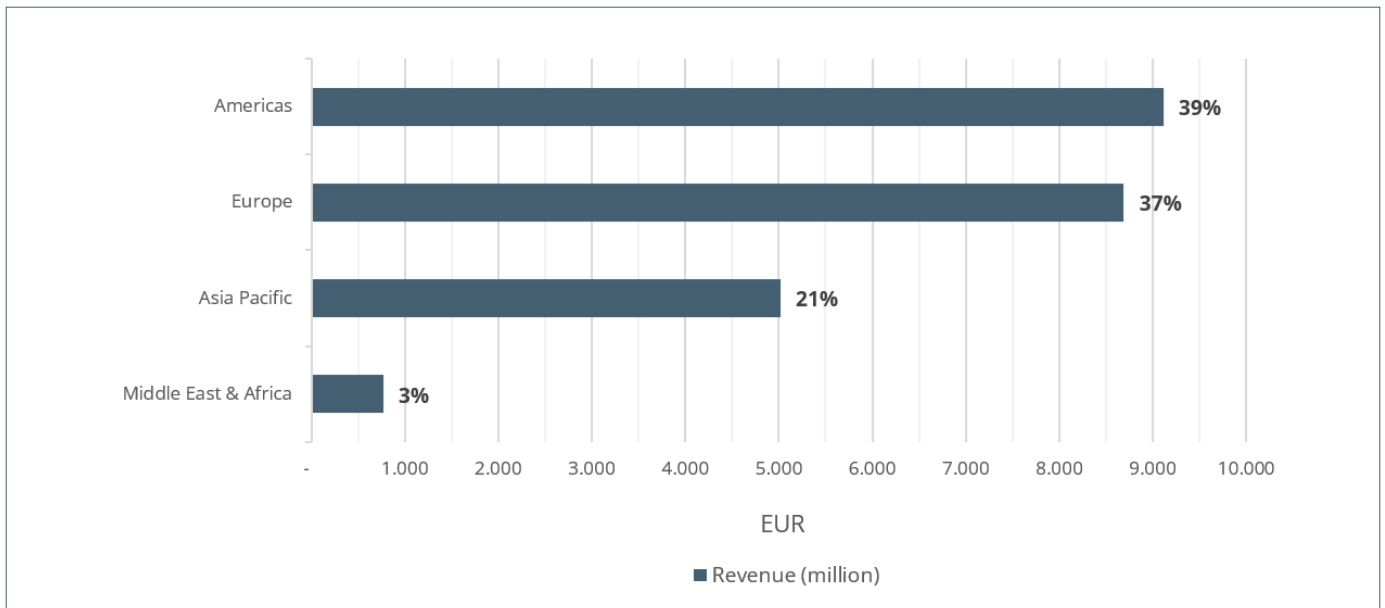
Founded over a century ago and headquartered in Paris, France, **Air Liquide SA (AI)**, is a global leader in industrial gases and related technologies, serving a wide range of markets including healthcare and heavy industries. Between 2019 and 2023, the company achieved an average annual revenue of EUR 24.7 billion and an operating profit of approximately EUR 4.3 billion. During this period, Air Liquide maintained an average gross margin of 17.6%.

Its three main business segments are Gas and Services (G&S), Global Markets and Technologies (GM&T), and Engineering and Construction (E&C). The G&S division, which is Air Liquide's primary business unit, contributed about 96% of total sales during these years, offering industrial gases and related services across various sectors, as shown in Figure 1. The GM&T segment, focusing on emerging markets in energy transition, maritime logistics, and advanced technology, accounted for around 3% of total revenue, while E&C, focused on designing and building industrial gas facilities, contributed to the remaining 1%<sup>1</sup>.



**Figure 1: Revenue (%) - Breakdown by Business Segments (5Y Avg.).**  
Source: Air Liquide Annual Reports 2019-2023.

<sup>1</sup> To be more precise E&C represented between 1 and 2% of the revenue, but a large part of the activity concerns internal projects which is not reflected in consolidated sales.



**Figure 2: G&S Revenue (%) - Breakdown by Geography (5Y Avg.).**  
Source: Air Liquide Annual Reports 2019-2023.

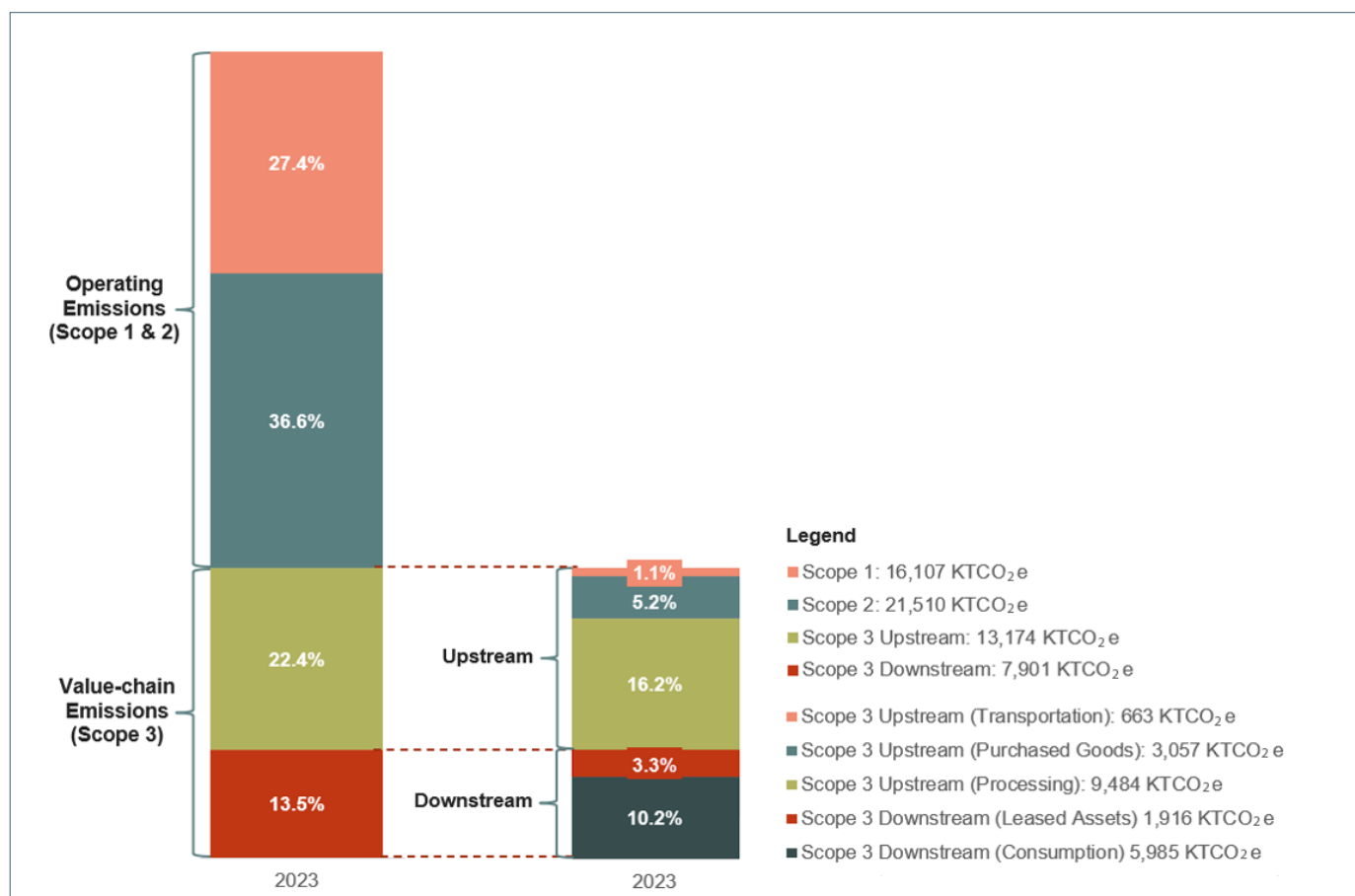
In summary, Air Liquide's extensive operations in developed markets like the Americas (averaging 39% of total revenue) and Europe (averaging 37% of total revenue) indicate that its climate transition risks and opportunities, along with regulatory impacts in these regions are likely to significantly affect the company's financials<sup>2</sup>. Moreover, with G&S Industrial Merchant and G&S Large Industries making up 71% of its annual sales on average, the company is highly dependent on climate transition opportunities developments and risks affecting the industrial market.

<sup>2</sup> Note that Air Liquide has also a large production footprint in Africa and Asia, particularly in China and South Africa, with 52% of its greenhouse gas emissions linked to the energy it purchases and uses in Africa/ME/India and the APAC region. Hence, the development of climate policy in these regions could also lead to significant transition risks.

## Climate Alignment

### EMISSIONS INVENTORY

From 2020 to 2023<sup>3</sup>, Air Liquide reported an average annual greenhouse gas (GHG) emissions figure of 60,409 kilotons of CO<sub>2</sub> equivalent (KTCO<sub>2</sub>e), peaking at 62,332 KTCO<sub>2</sub>e in 2021 and reaching a low of 58,692 KTCO<sub>2</sub>e in 2023. Moreover, in 2023, the majority of emissions came from operational activities where Scope 1 emissions accounted for 27.4% and Scope 2 (market-based) contributed to 36.6% of the total emissions. Within the value chain, upstream Scope 3 activities<sup>4</sup> were responsible for 22.4% of total GHG emissions, while downstream Scope 3 activities<sup>5</sup> made up the remaining 13.5%. Key contributors in the Scope 3 category included upstream “Processing” emissions at 16.2% of total emissions and downstream “Consumption” accounting for 10.2% of the overall footprint, as presented in Figure 3.



**Figure 3: Full Value Chain GHG Emissions (2023) - Percentage Breakdown by Scope.**

Source: Air Liquide – 2023 Universal Registration Document.

3 While Planet Tracker aimed to analyse Air Liquide’s emissions trajectory for the last five years due to the company’s changes in emissions accounting methodology, and related restatements, we had to consider the like-for-like comparison of the last four years.

4 Scope 3 upstream emissions include: (1) Purchased Goods - emissions estimated from the spend of purchased products (€) multiplied by emission factors provided by the ADEME and CEDA databases; (2) Processing - including the emissions from “Capital Goods”, “Fuel and Energy Activities” not covered in Scope 1 and 2, and emissions from “Waste from Operations”; (3) Transportation - covering emissions from “Transport & Distribution”, “Employee commuting”, and “Business Travel”.

5 Scope 3 downstream emissions include: (1) Consumption - covering emissions from the “Use of sold products” which stands for emissions related to the use of products sold, including sales of products also recognised as GHG, for which the volumes, adjusted according to the use made of the products, are multiplied by the global warming potential of each gas (GWP), as well as downstream emissions related to sales of acetylene and residual sales of natural gas at refill stations not yet fully converted to biomethane; (2) Leased Assets - covering energy consumption emissions data for the unit if available in the same way as for Scope 2 reporting; If not, an estimate of the annual energy consumption is made according to the unit’s production capacities and load factor.

## EMISSIONS HISTORIC EVOLUTION

Over the last four years (2020-2023), since Air Liquide set its climate transition targets, the company experienced a slight decrease of 0.5% in total GHG emissions. This reduction was primarily driven by a 10% annual average decrease in downstream Scope 3 emissions and a 4.9% reduction in Scope 1 and 2 emissions, equivalent to a 1.7% average annual reduction rate. However, upstream Scope 3 emissions grew at an average yearly rate of 15.3%, cumulatively increasing by 53.1% over the period, as outlined in Table 1.

**Table 1:** Restated Scope 1, 2, and 3 CO<sub>2</sub>e evolution (2020-2023).

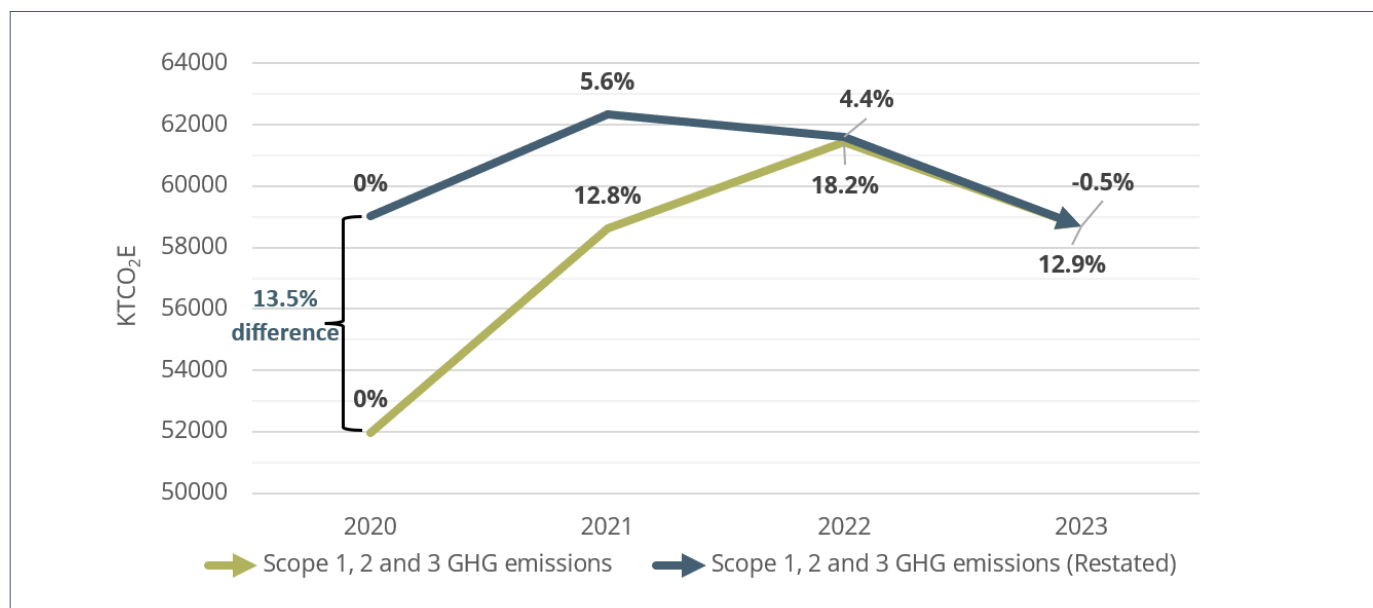
Source: Air Liquide – 2021 to 2023 Universal Registration Documents and Planet Tracker Calculations

Scope	Restated 2020 (KTCO <sub>2</sub> e)	2023 (KTCO <sub>2</sub> e)	Compounded annual change % (2020-2023)	Absolute Change % (2020-2023)
Scope 1 GHG Emissions	39,564	16,107	-1.7%	-4.9%
Scope 2 GHG Emissions (location-based)		21,510		
Scope 3 Upstream GHG Emissions	8,603*	13,174	15.3%	53.1%
Scope 3 Downstream GHG Emissions	10,846*	7,901	-10.0%	-27.2%
Scope 1, 2 and 3 GHG emissions	59,013	58,692	-0.2%	-0.5%

\*Please note that although there are slight differences between the Scope 3 numbers disclosed in the company's 2021 CDP response (reflecting its 2020 footprint) and those in the company's 2021 Universal Registration Document, Air Liquide representatives assert that its **Scope 3 emissions have not been restated**.

In 2022, Air Liquide restated its 2020 and subsequent years' emissions, particularly affecting Scope 1 and 2 figures. This adjustment led to a 13.5% increase in the revised 2020 GHG emissions baseline, resulting in an overall emissions decrease of 0.5% from 2020 to 2023, compared to a 12.9% increase based on the original data<sup>6</sup>. These differences are shown in Figure 4.

<sup>6</sup> A similar dynamic was found in Dow's CTA



**Figure 4:** Original and restated CO<sub>2</sub>e evolution in the last four years. Source: Air Liquide’s Universal Registration Document 2021-2023 and Planet Tracker Calculations.

To explain the restatement, the company provides a limited note indicating that “2020 and following years’ emissions [were] restated to include emissions for the full year for all assets, taking into account significant changes in scope that impact CO<sub>2</sub> emissions.” After Planet Tracker engaged with the company’s representatives, it was clarified to us that Air Liquide restated its emissions mainly to take into account the energy used on the Air Separation Units acquired at the end of H1 2021 in South Africa, Segunda<sup>7</sup> – previously owned and operated by Sasol. Accordingly, company representatives also pointed out that these emissions had previously been reported by Sasol. However, it remains unclear whether a company (Sasol in this case) adjusts its baseline emissions when selling its assets. For example, BASF’s divestments do not include a corresponding revision of its baseline, indicating a potential gap in the GHG Protocol usage.

Furthermore, given that CA100+ chemical companies targeting net-zero alignment by 2030 typically aim for reductions between 12% and 34%<sup>8</sup>, this restatement represents a significant shift in Air Liquide’s baseline. Hence, the company would benefit from offering a comprehensive explanation, as they did via our engagement, to enhance clarity and transparency for investors.

Lastly, regarding the significant increase in its upstream Scope 3 emissions, the company argues that this is mainly due to two factors. First, the rise in Scope 3 fuel and energy emissions resulting from the acquisition of the world’s largest oxygen production site in South Africa, where coal is widely used for electricity generation and second, carbon accounting changes that have led to more accurate data in recent years. Still, while the Scope 1 and 2 baselines were updated to include the impact of the acquisitions, the same rationale was not applied to upstream Scope 3 emissions for a like-for-like comparison<sup>9</sup>.

<sup>7</sup> Secunda is regarded as the world’s most highly emitting industrial site as highlighted in articles such as the FT’s “[Inside the battle to decarbonise the world’s dirtiest refinery](#)” - though there’s no mention of Air Liquide’s involvement.

<sup>8</sup> For more details see [Tomorrow’s Chemistry](#) – Table 10.

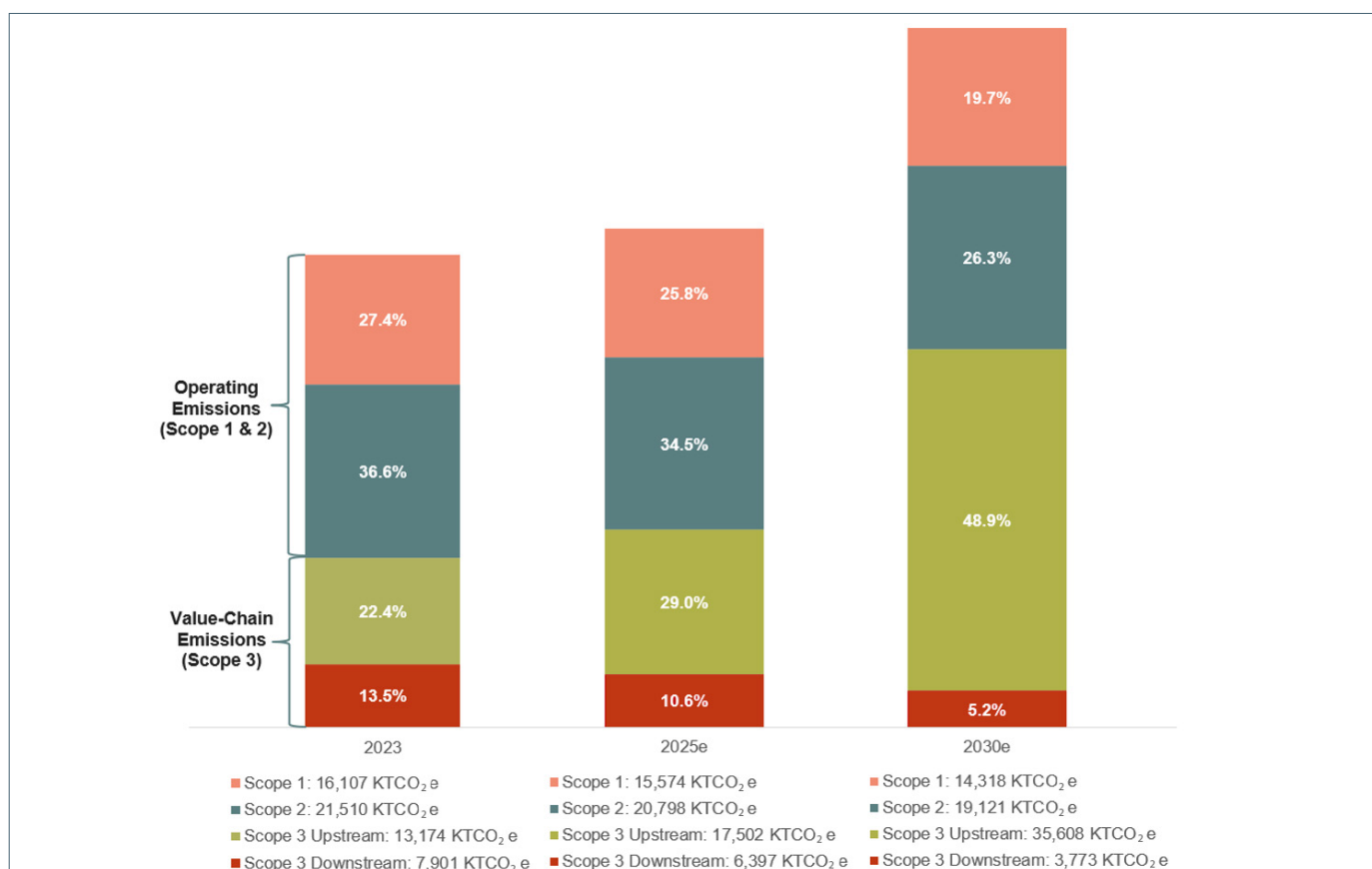
<sup>9</sup> Company representatives argue that Scope 1 and 2 were updated because they have an intermediate target, whereas Scope 3 has not, and its carbon neutrality target does not benefit from the restatement.

## EXTERNALITIES TRENDS AND TARGETS

To forecast Air Liquide’s emissions up to 2030, we used a high-level extrapolation model that compounds the annual emissions change rate from the past four years forward. This projection assumes historical mitigation efforts by the company and an intrinsic annual growth rate in revenue of 5.9%<sup>10</sup>. Therefore, examining the company’s engagement and investments in the following sections becomes crucial to determine whether Air Liquide will deviate from its historical pattern.

Our current projection anticipates that by 2025, Scope 1 and 2 emissions will decrease by 3%, upstream Scope 3 emissions will rise by 33%, and downstream Scope 3 emissions will reduce by 19%. By 2030, these trends are expected to intensify as Scope 1 and 2 emissions are projected to decrease by 11%, upstream Scope 3 emissions are expected to nearly triple with a 170% increase, and downstream Scope 3 emissions are projected to halve with a 52% reduction.

Without further mitigation efforts, the company’s projected emissions are expected to reach 72,819 KTCO<sub>2</sub>e by 2030, representing a 24% increase from 2023 levels. In this scenario (illustrated in Figure 5), operational emissions would account for 45.9% of the total footprint, while the majority, 48.9%, would come from Scope 3 upstream activities. The remaining 5.2% would be derived from Scope 3 downstream activities.



**Figure 5: Value Chain GHG Emissions (2025e & 2030e) – Percentage Breakdown by Scope.**  
Source: Air Liquide’s Universal Registration Document 2021-2023 & Planet Tracker Calculations.

<sup>10</sup> This is the 2019-2023 revenue growth rate which also accounts for the COVID-19 pandemic’s transient economic impact, reflecting both the downturn and subsequent recovery.

However, Air Liquide's [2024 Climate Transition Plan](#) highlights its commitment to achieving carbon neutrality across its value chain by 2050<sup>11</sup>. The plan initially focuses on reducing the main sources of GHG emissions within its value chain, followed by offsetting any remaining residual emissions through carbon removals once significant reductions have been made. Consequently, its path to carbon neutrality relies on several mid-term milestones. According to Air Liquide's estimates, the company is expected to reach an inflexion point for Scope 1 and 2 emissions around 2025, after which it aims for a 33% reduction in operational emissions by 2035, relative to a 2020 baseline, or a 35% reduction in absolute Scope 1 and 2 GHG emissions by 2035 from a 2021 baseline<sup>12</sup>.

It is important to note that our extrapolation to 2030 was done for comparative purposes, aligning with the mid-term targets of the other CA100+ listed chemical companies<sup>13</sup>. Given the timeline difference, the 2035 targets submitted to the Science Based Target initiative (SBTi) were validated in 2022 as aligned with the "well below 2°C" warming scenario. However, the company argues that its two-slope trajectory – with an inflexion point around 2025<sup>14</sup>, followed by an ambitious target by 2035 and carbon neutrality by 2050 – aligns with the IEA's 1.5°C pathway for the chemicals industry, a sector that is expected to decarbonise at a slower rate than the global average. Air Liquide further notes that the pace of decarbonisation in the "hard-to-abate" chemical sector is contingent on both the maturity of decarbonisation technologies and the broader transition of the power sector<sup>15</sup>. Moreover, the company anticipates growth in its operations to support energy transition demands, highlighting that this, combined with its objective of absolute emissions reductions, underscores its commitment to ambitious climate targets.

In summary, despite the extended timeline, Air Liquide maintains that its comprehensive carbon neutrality goals align with a 1.5°C scenario when measured against the IEA Net Zero Roadmap for the chemicals industry<sup>16</sup>, especially considering the expansion of its energy transition solutions.

Moreover, while its [2024 Climate Transition Plan](#) reaffirms Air Liquide's commitment to reducing Scope 3 emissions as part of its 2050 neutrality ambition, it has yet to set a specific mid-term target for its Scope 3 emissions. More precisely, we would recommend a target for upstream emissions from "fuel-and-energy activities" – a major GHG source expected to contribute significantly to the growth in Scope 3 emissions as the company expands. However, company representatives argue that, so far, Air Liquide cannot make such commitments, as most material categories of Scope 3 lack global methodologies and specific data. In other words, they rely on statistics, such as spent base for procurement or grid average data for energy, and thus, according to the company, changes in emissions will depend on the global average evolution rather than Air Liquide's profile. Nevertheless, the company stated its intention to engage with stakeholders to improve Scope 3 emissions accounting methodologies and gain access to specific data for a more tailored approach.

Meanwhile, historical trends suggest that, even with the 2035 operational targets, Air Liquide may fall short of its SBTi-approved targets by approximately 16%, as illustrated in Figure 6.

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11 Which according to company representatives includes its Scope 3.

12 Validated as "well-below 2°C" by SBTi using a 2021 baseline, so as to integrate changes in Scope following the Sasol units acquisition.

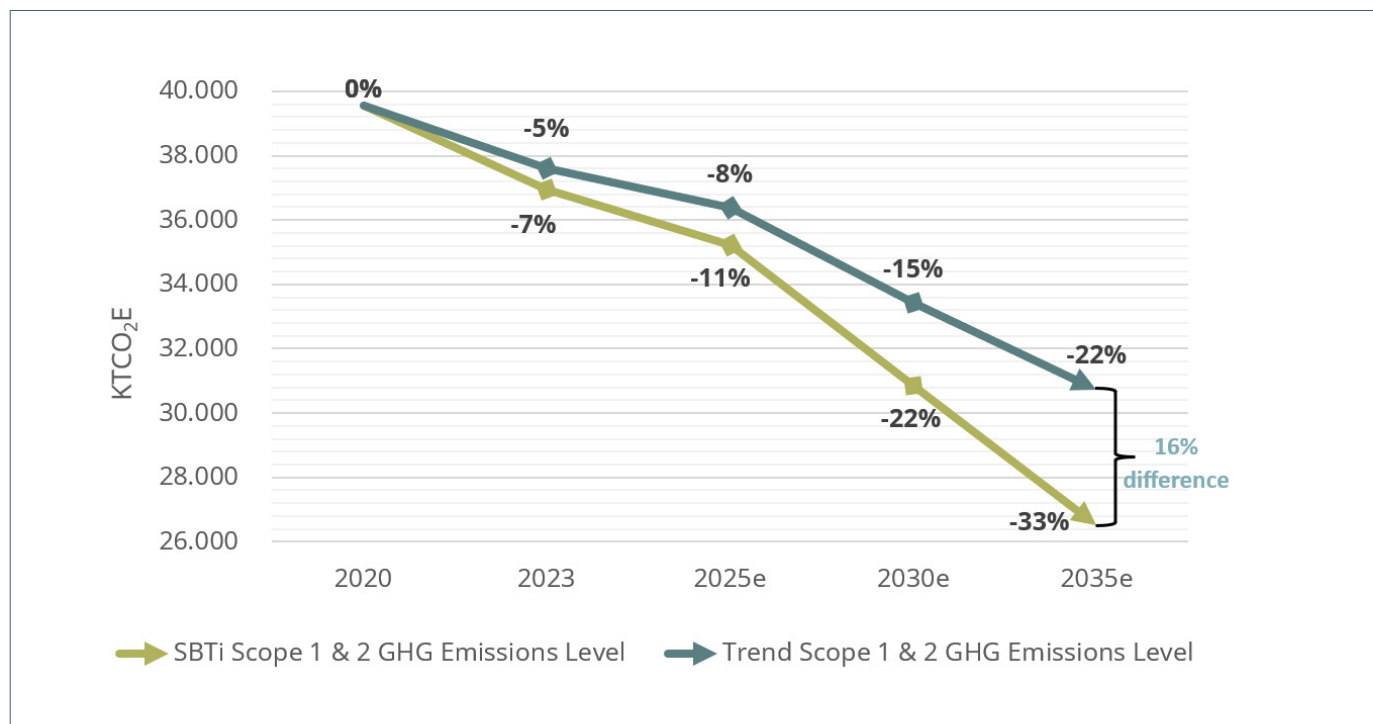
13 The other CA100+ listed chemicals have mid-term targets up until 2030, with the exception of Toray which aims for 2031. For more details see [Tomorrow's Chemistry](#).

14 According to Air Liquide representatives in its industries the mitigation actions take time to provide an effect. As an example, an Air Liquide industrial project takes on average two to three years to be completed, and new renewable sources provide electricity a few years after the agreement signature. Thus, the company expects based on its current projects that its decarbonisation will accelerate after 2025.

15 For example, receiving Zero Carbon electricity from a power purchase agreement that enables the development of a large renewable electricity production asset can take 4 to 10 years (e.g., identification, development and construction of a solar or wind farm project). Similar delays can be expected in securing the sourcing of substantial volumes of biogenic fuel or feedstock or in establishing a Carbon Capture and Storage supply chain.

16 A similar case was made by Dow representatives as their low operating emissions abatement ambitions by 2030 are not set to align with the SBTi recommendation but rather IEA's slower pace.





**Figure 6:** Future GHG Emissions – SBTi Recommended vs Extrapolated Trends. Source: Air Liquide’s Universal Registration Document 2021-2023, SBTi approve targets and Planet Tracker Calculations.

Consequently, the company’s historical trajectory does not, on its own, indicate alignment with a 1.5°C pathway by 2030 or a “well-below 2°C” warming scenario by 2035. While company representatives argue that the validated science-based targets provide solid evidence of alignment with these temperature pathways, Planet Tracker maintains that a temperature alignment comes from a comprehensive plan or strategy, not merely from the presence of targets – although these are highly encouraged.

Therefore, given the target gaps and the historical data presented, Air Liquide’s trajectory may lean towards a 2°C alignment scenario rather than a well-below 2°C pathway. Still, to fully assess Air Liquide’s likelihood of reaching Paris-aligned climate objectives, further analysis of the company’s policy, governance, risk management, and strategic alignment is needed. We discuss this below.

## Policy and Governance

### ENGAGEMENT AND INFLUENCE

#### Suppliers' Engagement

Air Liquide aims to reduce greenhouse gas (GHG) emissions within its supply chain through three main strategies.

##### **First Strategy: Emissions from Procurement (Scope 3, Category 3)**

This strategy focuses on emissions from electricity, fuel, and feedstock procurement, which account for around 40% of the company's Scope 3 emissions. Actions in this area are twofold:

- 1. Transition to Zero-Carbon Electricity:** The company plans to shift its electricity supply from fossil-based sources – which make up 70% of its Category 3 emissions – to zero-carbon alternatives. More precisely, Air Liquide has committed to sourcing an additional 10 TWh of zero-carbon energy by 2035 expected to reduce operating emissions by approximately 5,000 KTCO<sub>2</sub>e by 2035. The company's commitment to reducing Scope 2 emissions, and potential cost reductions in this market, are anticipated to have an indirect positive impact on its Scope 3 emissions.
- 2. Natural Gas Emissions Management:** The remaining 30% of Category 3 emissions involve natural gas usage. Air Liquide aims to target upstream emissions by improving data accuracy and implementing actions to reduce methane leaks. This approach starts with precise emission measurements and involves engaging suppliers to promote fuels and feedstocks with lower CO<sub>2</sub> intensity.

Nevertheless, the [2024 Climate Transition Plan](#) provides limited insight into Air Liquide's strategy beyond 2035, particularly regarding the replacement of fossil fuel feedstocks within Steam Methane Reformers (SMRs) and other high-emission processes. Moving forward, stakeholders would benefit from further disclosures on plans for achieving 100% feedstock replacement with low-carbon or renewable alternatives. This longer-term strategy will be critical to Air Liquide's alignment with net-zero targets, particularly given the company's ongoing reliance on fossil fuel-based SMRs for hydrogen production.

##### **Second Strategy: "Procure to Neutrality" Programme<sup>17</sup>**

Accounting for 15% of Scope 3 emissions, this programme was launched in 2021 to reduce procurement-related emissions. It consists of four key pillars:

- 1. Measurement:** Developing methodologies to refine Scope 3 emissions calculations by obtaining precise, product-specific carbon footprints, and reducing reliance on generalised statistics.
- 2. Supplier Engagement:** Training the procurement team and engaging major suppliers to assist in emissions measurement and encourage science-based climate commitments.

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<sup>17</sup> For more details read about Air Liquide's Sustainable Procurement [here](#).

- 3. Leveraging Procurement:** Incorporating carbon footprint criteria into procurement assessments. This is facilitated by the Total Cost of Ownership (TCO<sub>2</sub>) tool<sup>18</sup>, which integrates sustainability into supplier evaluations.
- 4. Setting Reduction Objectives:** Defining targets that align with Air Liquide's carbon neutrality goals.

### Third Strategy: Emissions from Transportation and Distribution

This strategy addresses emissions from product transportation and distribution, which account for 2% of Scope 3 emissions. Two-thirds of these emissions result from the outsourced distribution of bulk and packaged gases. Through its "Clean Fleet" initiative, Air Liquide aims to reduce Scope 1 transport emissions and the associated Scope 3 emissions by adopting cleaner transportation solutions.

Overall, these three strategies aim to cover approximately 47% of Air Liquide's Scope 3 emissions<sup>19</sup>, equivalent to 17% of its total emissions in 2023. However, specific mitigation targets for these strategies are lacking. While Air Liquide has outlined sensible supplier engagement initiatives, the absence of explicit mitigation targets limits the ability to assess the potential impact of these efforts.

## Customers' Engagement

### Reducing Downstream Emissions

Air Liquide identifies that products with high global warming potential, particularly Carbon Dioxide (CO<sub>2</sub>) and Nitrous Oxide (N<sub>2</sub>O), account for approximately 30% of its Scope 3 emissions. To address these emissions, the company has initiated several actions:

- CO<sub>2</sub> Sales:** Air Liquide intends to transition its CO<sub>2</sub> production towards biogenic sources. At the time of this report, the company is developing a roadmap for its European operations to facilitate this shift. However, the potential mitigation impact linked to using biogenic CO<sub>2</sub> sources has not been disclosed. Company representatives argue this is for business confidentiality reasons.
- N<sub>2</sub>O Sales:** Many applications of N<sub>2</sub>O, such as those in healthcare, are essential and challenging to replace. Air Liquide is exploring end-market opportunities to identify where emissions abatement is feasible or where alternative products can be developed. Yet, concrete targets and the relative impact on the company's emissions footprint are not specified.

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<sup>18</sup> The Group's TCO<sub>2</sub> tool, awarded in 2022, makes Air Liquide's CO<sub>2</sub> reduction goals tangible by integrating them into three supplier selection criteria: the TCO (total cost of ownership), risk assessment and the TCO<sub>2</sub> (total CO<sub>2</sub> emissions). The tool: (i) gauges the maturity of a supplier's Net Zero activity; (ii) measures the carbon content in a supplier's offer; (iii) applies weighting appropriate to the category being procured; (iv) sets a minimum required TCO<sub>2</sub> score to be eligible to tender, from 2024 (v) will progressively raise the bar, setting the pace for ever-higher standards.

<sup>19</sup> Representing approximately 9,905 KTCO<sub>2</sub>e in 2023.

## Supporting Industry Transitions

Beyond making direct changes to its products, Air Liquide aims to assist its customers in their decarbonisation efforts by providing critical products, expertise, and technology. Examples include:

- **Chemicals Manufacturing**

- **Auto-Thermal Reformers (ATR):** Using its proprietary ATR technology, Air Liquide supports chemical manufacturers in replacing high-emission offgas processes with low-carbon hydrogen production. Still, other organisations, like our sister company Carbon Tracker, do not see this as a true decarbonisation solution, since it is a fossil gas-based production technology<sup>20</sup>. Specifically, it is called a 'low carbon' because the assets are equipped with carbon capture technology. However, since carbon capture and storage (CCS) has not yet been deployed at scale, it is unclear whether it will achieve the claimed capture rate of 95% (excluding emissions from operating the CCS equipment)<sup>21</sup>.

- **Steel Manufacturing**

- **Industrial Gases for Steel Production:** The company supplies low-carbon hydrogen for Direct Reduced Iron (DRI) steelmaking processes. As DRI becomes a viable alternative to traditional blast furnaces, the potential for "green steel" production could lead to significant emission reductions. However, specific figures are not provided.

- **Cement and Lime Production**

- **Carbon Capture as a Service:** Air Liquide's Cryocap technology facilitates CO<sub>2</sub> capture, transport, and storage, helping cement, refining, chemicals and steel producers mitigate emissions inherent in their production processes<sup>22</sup>. Still, the extent of these reductions remains unclear.

- **Mobility Sector**

- **Hydrogen Mobility:** Air Liquide is actively involved in producing, transporting, and liquefying low-carbon hydrogen for use in fuel cells and sustainable fuels, which are essential for decarbonising road freight transport. However, measurable emission reductions from these initiatives have not been disclosed.
- **Battery/Electric Vehicle Mobility:** To support the growth of battery manufacturing, the company supplies significant volumes of industrial gases required for cathode active material production. The Bécancour platform in Quebec, scheduled to be operational by 2025, exemplifies this commitment.

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<sup>20</sup> For more details, see: [Kind of Blue](#).

<sup>21</sup> For more details, see: [Blue Hydrogen: Not Clean, Not Low-Carbon, and Not a Solution](#).

<sup>22</sup> For more details see: [Decarbonization of the Industry: Focus on Carbon Capture and Storage \(CCS\)](#).

### **Customer Commitment to Carbon Neutrality**

Air Liquide has set a goal for 75% of its top 50 customers to commit to carbon neutrality by 2025 and 100% by 2035. As of 2023, 74% of these customers have made this commitment. The company is also exploring ways to more actively monitor and influence customer sourcing, particularly for Category 13 emissions, which represent 5% of its Scope 3 footprint. These emissions are expected to decrease as energy mixes evolve. Nevertheless, as this category refers to energy purchased by its customers, Air Liquide stated that it has no control over the final output.

While Air Liquide has implemented various initiatives to engage customers in their emissions reduction efforts, specific mitigation targets and quantified impacts are largely missing. Greater transparency regarding the expected emissions reductions of these initiatives would enable a clearer evaluation of their effectiveness and alignment with global climate objectives.

## Influence on Policymakers

Air Liquide actively participates in climate policy discussions through professional associations, think tanks, and non-governmental organisations, leveraging its expertise as an industry leader.

Publicly, the company presents itself as broadly supportive of climate action, as evidenced by its [2024 Climate Transition Plan](#) and its endorsement of the EU's Fit for 55 package<sup>23</sup>. However, in early 2024, Air Liquide's CEO signed the [Antwerp Declaration](#), which advocates for less prescriptive regulations under the EU Green Deal. This suggests a preference for a more flexible, industry-driven approach.

In the United States (US), Air Liquide supported clean energy tax credits under the [Inflation Reduction Act](#) but later advocated for relaxed sustainability criteria for clean hydrogen production, indicating somewhat conditional support for these initiatives. The company argues that to deliver the economic and environmental benefits of hydrogen, the tax credit's implementation must allow for near-term flexibility as the industry matures.

Air Liquide's industry involvement is extensive, including membership in several trade associations that have positions potentially at odds with climate action. In its [2023 Trade Associations Climate Review](#), the company disclosed five misalignments with its climate-related positions. However, according to Influence Map, it omitted four other associations that are actively and negatively engaged in climate policy. Recently, Air Liquide decided to exit the [American Fuel & Petrochemical Manufacturers \(AFPM\)](#) Association, indicating a possible shift toward stronger alignment with climate action. Nonetheless, the company remains involved with several misaligned associations, including [MEDEF](#) (where it chairs the climate change committee), the [National Association of Manufacturers](#) (having a senior executive on the board), and the [US Chamber of Commerce](#), raising questions about its policy alignment.

Overall, Air Liquide's influence on climate policy reveals mixed support, especially regarding policies that affect its operational flexibility, mainly related to transportation and hydrogen. While the company publicly commits to climate action, its policy engagements and affiliations with conservative trade associations suggest a nuanced stance<sup>24</sup>. Greater transparency about its lobbying positions and the quantifiable impacts of its policy engagements would facilitate a clearer assessment of Air Liquide's overall influence on climate-related policy.

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<sup>23</sup> Source: [Charter Engagement with Public Stakeholders – Feb 2023](#).

<sup>24</sup> The company argues asking all its associations, globally, to explicitly align with the Paris Agreement's goals or contribute to net zero pathways as outlined by the International Energy Agency.

## MANAGEMENT ALIGNMENT

### Sustainability Targets Oversight

#### A. The Board

Air Liquide’s sustainability oversight is led by the Environment and Society Committee (ESC), a board-level body responsible for examining the Group’s sustainability strategy, climate-related actions, and commitments. The ESC is currently chaired by Dr Annette Winkler, who also leads Renault’s Strategy and Sustainability Committee. Other notable members include Monica de Virgiliis, Chair of Chapter Zero France, and Philippe Dubrulle, Director of Transformation and Sustainable Development at Air Liquide Advanced Technologies, highlighting a strong emphasis on climate expertise within the company’s governance.

The ESC meets three times a year, reporting directly to the Board of Directors (see Figure 7) on key findings and recommendations. Additionally, the committee holds an annual joint session with the Audit & Accounts Committee to conduct a comprehensive risk review, particularly concerning environmental and societal risks, which according to Air Liquide disclosures, both committees examine in depth. This collaborative approach aims to integrate financial and non-financial insights into Air Liquide’s Integrated Management Report.



**Figure 7:** Air Liquide Board of Directors Composition. Source: *Air Liquide 2023 Sustainability Report*.

According to the company, ESC sessions regularly include briefings from the Executive Committee's sustainable development lead, who updates the board on strategy, implementation, and progress. To maintain the board expertise up to date, Air Liquide provides ongoing training; in 2022 and 2023, board members completed targeted Corporate Social Responsibility (CSR) courses, with 86% now equipped with functional CSR skills and 57% possessing sector-specific energy skills. The company also disclosed that the ESC reviewed the current climate transition plan before its public release, demonstrating the board's active role in the company's climate governance.

In summary, Air Liquide's Board of Directors and the ESC aim to shape the company's sustainable development strategy and ensure its alignment with environmental and societal objectives. This oversight extends to risk management, compliance, and performance evaluation related to sustainable development.

## **B. The Management**

Air Liquide's CEO plays a key role in directing the company's climate and sustainable development strategy, working closely with the Board of Directors and other main governance bodies. The CEO is responsible for shaping and implementing sustainability initiatives, with a focus on climate objectives and advancing the hydrogen ecosystem as part of the company's broader energy transition efforts.

The Chief Sustainability Officer (CSO), who reports to the CEO, also holds a critical role by overseeing the environmental and climate departments and actively contributing to the design and realization of the company's sustainability goals. According to the company, the CSO provides regular assessments and monitoring reports on climate-related issues to the ESC, facilitating informed oversight at the board level.

Key responsibilities of the CSO include:

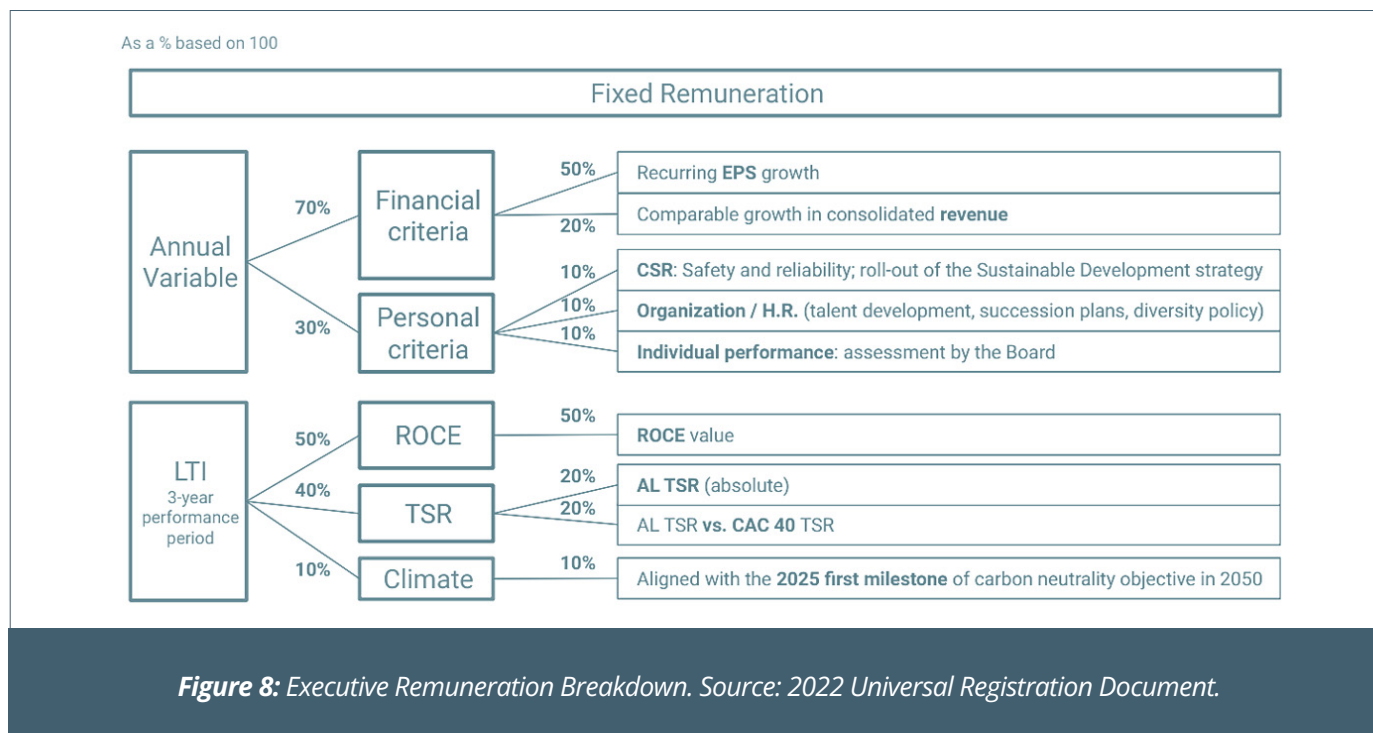
- **Strategy Development:** Establishing sustainable development strategies and climate objectives across all business units, incorporating market dynamics and the company's climate ambitions.
- **Recommendations and Monitoring:** Advising the CEO and the ESC on sustainability commitments and strategy, with a focus on climate-related issues.
- **Deployment Oversight:** Ensuring the effective implementation of environmental and social initiatives, including those addressing climate, air quality, energy use, and GHG emissions.
- **Risk Assessment:** Evaluating environmental and societal risks, emphasising their potential impact on investments, financial performance, and the company's reputation.
- **Engagement with Ratings:** Managing Air Liquide's approach to extra-financial ratings, validating engagement strategies, and ensuring alignment with sustainability benchmarks.

Through this structured approach, Air Liquide's executive team seeks to maintain accountability and alignment with the company's sustainability objectives, embedding climate considerations within strategic decision-making.



## Management Compensation

According to the company, Air Liquide’s 2023 remuneration policy for executive officers follows its established practices. The CEO’s remuneration is structured as approximately 25% fixed salary, 35% target variable remuneration, and 40% long-term incentives (LTI). The maximum variable component is capped at 150% of the fixed remuneration. A detailed remuneration breakdown is shown in Figure 8<sup>25</sup>.



Short-term remuneration tied to the Sustainable Development strategy accounts for about 3.5% (35% multiplied by the 10% allocated to CSR-related personal criteria). Meanwhile, long-term performance remuneration linked to climate objectives represents roughly 4% (40% multiplied by the 10% allocated for climate targets). Consequently, Planet Tracker’s assessment finds the sustainability Key Performance Indicators (KPIs) in executive compensation packages as marginal<sup>26</sup>.

However, company representatives pointed out that, in the long term, all results depend on the company’s climate transition. Carbon emissions reduction is one of the three top strategic KPIs, with >40% of investment opportunities classified as Energy Transition projects. In other words, Air Liquide’s main growth opportunities are in the energy transition and the development of new related technologies, which indirectly affects sales growth (i.e., comparable growth) and Return on Capital Employed (ROCE).

Therefore, Planet Tracker assumes a high alignment of management incentives with the well-below 2°C transition goal, even though the direct link between transition targets and executive remuneration is currently only noticeable<sup>27</sup>.

<sup>25</sup> For more details check the Air Liquide Governance 2024 slides [here](#).

<sup>26</sup> According to Planet Tracker’s recently published paper on management remuneration linked to sustainability KPIs, above 10% of total compensation is considered ‘material’ while between 10% and 5% is only ‘noticeable’. For more details please see our [Plastic Compensation](#) paper and [Best Practice Guide Compensation](#).

<sup>27</sup> Idem previous footnote.

## Risk Analysis

### FINANCIAL IMPACT

#### External Policy Drivers<sup>28</sup>

Air Liquide's climate-related risks are closely tied to regulatory developments, particularly policies enforcing GHG emission reductions, carbon pricing, or stricter emissions regulations. These policies could impact the company in several ways:

- **Group Operations:** Regulations directly affecting Air Liquide's facilities might lead to increased production costs and the need for new investments. According to the company, these costs would be passed on to customers under long-term contracts<sup>29</sup>.
- **Supply Chain:** Regulatory impacts on suppliers could lead to price increases, affecting input costs.
- **Customer Operations:** Clients facing regulatory pressures might alter their markets, processes, or demand for industrial gases.

Operating in multiple regions with established or developing emissions trading schemes, Air Liquide is increasingly exposed to carbon costs as free allowances diminish. To assess this exposure beyond GHG emission quotas<sup>30</sup>, Planet Tracker calculated the potential impact of anticipated Carbon Pricing Mechanisms (CPMs) on all of Air Liquide's forthcoming operational GHG emissions. Using the Inevitable Policy Response (IPR) carbon pricing for 2030<sup>31</sup>, and the geographic origin weighting over the last three years<sup>32</sup>, the projected financial effect of Scope 1 and 2 emissions by 2030 could reach EUR 1.6 billion per year<sup>33</sup>. Under a 90% cost pass-through provision, this impact would be reduced to EUR 161 million annually, equivalent to 3.9% of the company's current five-year average annual operating profit.

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<sup>28</sup> Source: 2023 Universal Registration Document.

<sup>29</sup> The company emphasises having provisions in most contracts to pass on the increased costs due to carbon taxes to its customers. Consequently, Air Liquide estimates exposure to only 10% of the extra cost, minimising its financial risk. Yet, these contract dynamics allowing carbon pricing costs to be passed on could change in the future based on the length of these contracts, and the company's ability to pass them on in perpetuity.

<sup>30</sup> As these will become irrelevant under a Net Zero economy.

<sup>31</sup> [The Inevitable Policy Response to Climate Change \(2021\)](#)

<sup>32</sup> Which gives us an average price of USD 52.26/tCO<sub>2e</sub> or EUR 48.29/tCO<sub>2e</sub> at an average exchange rate of USD 1 = EUR 0.9241.

<sup>33</sup> Average exchange rate in 2023: USD 1 = EUR 0.9241 -> Source: [link](#)

## Physical Impact Drivers<sup>34</sup>

Air Liquide operates in regions vulnerable to the intensifying effects of climate change, particularly regarding extreme weather events and gradual shifts in climate patterns. Such physical impacts could disrupt operations or increase the operational costs of the company's facilities and affect its broader supply chain. These risks are categorised as:

- **Acute Risks:** Sudden events, such as storms, hurricanes, and floods, pose immediate threats. The frequency and severity of these events are increasing, especially affecting Air Liquide sites located in coastal regions or areas exposed to hurricanes, such as the US Gulf Coast and South Asia.
- **Chronic Risks:** Long-term climate changes, including rising sea levels, persistent heatwaves, shifting rainfall patterns, and resource depletion, represent ongoing challenges. These gradual shifts may impact operational continuity and increase maintenance costs over time.

However, the company does not disclose the quantified potential financial impact of these risks, leaving investors and other stakeholders uninformed.

## RISK MANAGEMENT

### External Policy Risk Management<sup>35</sup>

Air Liquide's 2022 Blue Book Climate Policy<sup>36</sup> outlines its principles for managing climate policy risk across the entire value chain. Key components include:

- **GHG Emissions Monitoring:** An internal monitoring procedure tracks compliance with regulatory obligations, calculating Scope 1 and 2 emissions, and defining reporting scope and frequency.
- **CO<sub>2</sub> Budgeting and Performance:** Carbon budgets are now part of the company's annual budgeting process, with performance against CO<sub>2</sub> trajectories reviewed quarterly by the Executive Committee across geographies and business lines.
- **Investment Decision Reviews:** Climate considerations, including CO<sub>2</sub> pricing, are incorporated into investment decisions. All projects include a CO<sub>2</sub> price sensitivity analysis, using values of EUR 50/tCO<sub>2</sub>e and a high value of EUR 100/tCO<sub>2</sub>e, or more in certain regions.

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<sup>34</sup> Source: 2023 Universal Registration Document.

<sup>35</sup> Source: 2023 Universal Registration Document.

<sup>36</sup> Referenced in the company's 2023 Universal Registration Document and [Air Liquide's 2024 Vigilance Plan](#).

- **Climate Champions Network:** A network of “Climate Champions” is responsible for overseeing decarbonisation plans within specific country clusters.
- **Alignment with Public Policy:** The company anticipates regulatory policies aimed at accelerating a low-carbon transition, consistent with a “well-below 2°C” pathway, a commitment validated by the SBTi in 2022.

Ultimately, Air Liquide emphasises that access to renewable energy remains essential for its climate risk strategy, as it enables the reduction of Scope 2 emissions, which is fundamental to the company’s alignment with global decarbonisation targets.

## Physical Impact Management<sup>37</sup>

Air Liquide states that it uses tailored risk management systems for operations regularly exposed to acute risks, implementing preventive measures and crisis management protocols focused on safeguarding personnel and protecting production facilities. However, specific initiatives and their costs or potential financial impact mitigation are not disclosed.

Chronic risks are similarly addressed in the design of production units, with considerations extending to energy efficiency and carbon footprint to support both resilience and sustainability.

In 2023, Air Liquide reported that it conducted a risk assessment to identify physical climate impacts under two high-emission scenarios: SSP2-4.5 (leading to a +2.7°C increase by 2100) and SSP5-8.5 (worst-case scenario, leading to a +4.4°C increase by 2100). The study aimed to enhance Air Liquide’s physical risk management approach, and further analysis is planned for 2024 to refine this assessment and improve mitigation strategies. Still, related financial disclosures are missing.

Overall, while Air Liquide recognises the significant risks from both regulatory and physical impacts of climate change, its risk identification and management approach lacks key details. Its [2024 Climate Transition Plan](#) offers little detail about the potential cost of these risks and their mitigation initiatives, providing only a broad qualitative assessment.

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<sup>37</sup> Source: 2023 Universal Registration Document.

## Strategic Assessment

### CAPITAL ALIGNMENT

Based on the company's disclosures, Air Liquide's approach to decarbonising its existing assets is primarily aligned with contract renewal schedules, allowing each investment to generate its own cash flow and profitability. Operating expenses (OPEX) related to decarbonisation, such as energy or CO<sub>2</sub> management costs, are contractually passed through to customers under the company's business model<sup>38</sup>.

The Group states that its primary production assets can be decarbonised competitively within 1.5°C transition pathways, largely due to the implicit CO<sub>2</sub> pricing included in these scenarios and the competitiveness of its decarbonisation solutions. Notably, over 80% of Air Liquide's production assets are fully electrified. According to the IPCC's SR-15 report (Chapter 2), the average CO<sub>2</sub> price necessary to achieve a 1.5°C scenario would make all Air Liquide's CO<sub>2</sub> abatement measures financially viable before 2035, even in a low-overshoot scenario.

Under its **ADVANCE** strategic plan, Air Liquide has committed to a substantial capital allocation toward energy transition initiatives, earmarking 50% of its planned EUR 16 billion investments by 2025 for industrial projects exceeding EUR 5 million. After 2025, the company plans to continue exploring additional energy transition investments, with a particular emphasis on low-carbon hydrogen, low-carbon oxygen and carbon capture. Air Liquide is currently involved in six of the seven US clean hydrogen hubs and anticipates investing EUR 8 billion in low-carbon and renewable hydrogen projects by 2035.

To support these commitments, Air Liquide has implemented a **Sustainable Financing Framework**. The company also issued two green bonds, each valued at EUR 500 million in 2021 and 2024, aimed at financing or refinancing projects in hydrogen, carbon capture and utilisation storage (CCUS), and oxygen solutions. Additionally, Air Liquide is now prioritising sustainable investment instruments for its cash surpluses, such as SRI-certified funds or those promoting environmental and social objectives. While these investments are not yet dominant in the company's overall portfolio, Air Liquide intends to support the growth of funds eligible under Articles 8 and 9 of the EU Sustainable Finance Disclosure Regulation.

Furthermore, through its venture capital fund **ALIAD**, Air Liquide has invested over EUR 25 million, with EUR 15 million dedicated to energy transition start-ups, aligning with the company's ADVANCE programme, which seeks to combine growth with sustainable practices.

In summary, Air Liquide's capital alignment strategy underscores its commitment to supporting the energy transition through targeted investments in decarbonisation, renewable hydrogen, and sustainable financing. However, the company does not consistently link these investments to concrete emission reduction outcomes<sup>39</sup>, making it challenging to evaluate their alignment with the latest SBTs. A plausible explanation could be that the €8 billion commitment will primarily be allocated to decarbonisation-related growth projects, rather than to the decarbonisation of its existing assets; therefore, no absolute reduction in emissions would result from these projects.

<sup>38</sup> While the company emphasises having provisions in most contracts to pass on the increased costs due to carbon taxes to its customers, these contract dynamics could change in the future based on the length of these contracts, and the company's ability to pass them on in perpetuity.

<sup>39</sup> Company representatives argue that AI has many projects under development but we cannot communicate on them without the agreement of the other parties involved. Also, cannot communicate on them before these projects reach a 'solid' phase as they have to consider business confidentiality before concrete/quantified disclosures.

## TRANSITION APPRAISAL

Throughout this paper, we examined Air Liquide's climate transition plan across several key areas, including emissions trends, policy engagement, governance structures, risk management, and capital allocation. While the company demonstrates a commitment to sustainability and has implemented various initiatives to reduce its carbon footprint, several gaps remain that suggest to investors that the company may fail to align with the most ambitious climate goals.

Air Liquide operates extensively in developed markets and is deeply integrated into the industrial sector, making its role in global decarbonisation efforts particularly significant. The company's primary business unit, G&S, accounts for most of its revenue and emissions, underscoring the importance of focusing decarbonisation efforts in this area.

In terms of **emissions trends**, Air Liquide has reported a slight decrease in total GHG emissions over the past four years (2020-2023). Company representatives highlighted that its decarbonisation will accelerate after 2025, closing the time lag between decisions and impact. However, between 2020 and 2023, the company's upstream Scope 3 emissions have grown significantly, increasing by 53.1%. Notably, while the magnitude of the rise in emissions is justified by the company's acquisition in South Africa and some changes in methodology, there is no evidence that such a trend cannot be repeated in the future – i.e., the company might decide to acquire another similar business by 2030. Moreover, the company has set long-term targets to achieve carbon neutrality by 2050, but the lack of mitigation targets for upstream Scope 3 emissions raises concerns about its ability to align with the Paris Agreement's latest ambitions by 2030.

Regarding **policy and governance**, Air Liquide has established oversight structures such as the ESC to guide its sustainability strategy. The involvement of board members with expertise in sustainability suggests a strong commitment at the highest levels. However, the company's engagement with suppliers and customers lacks explicit mitigation expectations, limiting the ability to assess the potential impact of these initiatives. Additionally, Air Liquide's mixed influence on climate policy – highlighted by its affiliations with trade associations that may not fully support climate action – indicates a need for greater alignment and transparency.

In the area of **risk analysis**, Air Liquide recognises both the regulatory and physical risks associated with climate change but does not provide detailed disclosures on the potential financial impacts or the effectiveness of its mitigation strategies. The company's risk management approaches are described in broad terms without quantifying the potential costs or savings, leaving stakeholders without a clear understanding of how these risks are being managed.

Lastly, for **capital alignment**, Air Liquide has committed significant investments toward energy transition initiatives, setting around 50% of its planned EUR 16 billion investments by 2025 for industrial projects related to decarbonisation. While this demonstrates a serious financial commitment to sustainability, the investments are not consistently linked to quantified emission reduction outcomes. Without clear connections between capital allocation and measurable reductions in emissions, it is difficult to evaluate the effectiveness of these investments in aligning with a 1.5°C or well below 2°C pathway by 2030.

In conclusion, while Air Liquide is taking meaningful steps toward sustainability through investments and strategic initiatives<sup>40</sup>, the current gaps in its transition plan indicate that it may not fully align with the most ambitious climate scenarios. The lack of specific targets for Scope 3 emissions, limited transparency in risk management, and insufficient connections between capital investments and emission reductions are areas that require attention.

**Planet Tracker expects Air Liquide to align with a 2°C pathway by 2030<sup>41</sup>.**

<sup>40</sup> Some of these investments involved developing solutions to decarbonise its customers, even though this slightly increased its own operating emissions. According to company representatives, this approach was undertaken for the benefit of the customers and, ultimately, the planet.

<sup>41</sup> Based on the data accessed by Planet Tracker until October 2024.

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Planet Tracker is a non-profit financial think tank producing analytics and reports to align capital markets with planetary boundaries. We aim to create a significant and irreversible transformation of global financial activities by 2030. By informing, enabling and mobilising the transformative power of capital markets we aim to deliver a financial system that is fully aligned with a net-zero, nature-positive economy. Planet Tracker proactively engages with financial institutions to drive change in their investment strategies. We ensure they know exactly what risk is built into their investments and identify opportunities from funding the systems transformations we advocate.

## PLANET TRACKER'S CLIMATE TRANSITION ANALYSIS

As part of its Petchems programme, Planet Tracker is examining the transition plans of chemical companies covered by the Climate Action 100+ list (<https://www.climateaction100.org/whos-involved/companies>). Our goal is to provide investors with the key information and analysis they need to be able to hold leading chemical companies to account for the quality of their climate transition plans and their execution against those plans. We also encourage investors to use this information to engage effectively with these companies with the ultimate aim of driving the sustainable transformation of the chemical industry.

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