

## C0. Introduction

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### C0.1

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#### **(C0.1) Give a general description and introduction to your organization.**

Albemarle Corporation was incorporated in Virginia in 1993. It is a leading global developer, manufacturer and marketer of highly-engineered specialty chemicals that are designed to meet our customers' needs across a diverse range of end markets. Our corporate purpose is making the world safe and sustainable by powering the potential of people. The end markets we serve include energy storage, petroleum refining, consumer electronics, construction, automotive, lubricants, pharmaceuticals and crop protection. We believe that our commercial and geographic diversity, technical expertise, access to high-quality resources, innovative capability, flexible, low-cost global manufacturing base, experienced management team and strategic focus on our core base technologies will enable us to maintain leading positions in those areas of the specialty chemicals industry in which we operate.

Albemarle and its joint ventures currently operate more than 25 production and research and development ("R&D") facilities, as well as a number of administrative and sales offices, around the world. As of December 31, 2022, we had around 6,600 employees whom served approximately 1,900 customers in approximately 70 countries.

During 2022, we managed and reported our operations under three reportable segments: Lithium, Bromine and Catalysts. Each segment has a dedicated team of sales, research and development, process engineering, manufacturing and sourcing, and business strategy personnel and has full accountability for improving execution through greater asset efficiency, market focus, agility and responsiveness.

In August 2022, we announced plans to realign our Lithium and Bromine global business units into a new corporate structure designed to better meet customer needs and foster talent required to deliver in a competitive global environment. In addition, we announced our decision to retain our Catalysts business under a separate, wholly-owned subsidiary. The realignment was completed in the first quarter of 2023, and resulted in the following three reportable segments: (1) Energy Storage; (2) Specialties; and (3) Ketjen (Catalysts). We began to report our segments in the new structure in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2023, the period in which the new organizational structure became effective. The resegmenting was effective January 1, 2023 and is reflected in forward-looking sections of this report. 2022 data and performance reflect historical segments unless otherwise noted.

Within the questionnaire the CDP asks us to disclose location and facility information. Our responses in the questionnaire are consistent with those in our sustainability report:

- Activity data related to acquired businesses are included in the sustainability metrics on a pro-rata basis. Therefore, activity data related to the Qinzhou business (Guangxi Tianyuan New Energy Materials Co., Ltd.), which was acquired on October 25, 2022, is incorporated based on the portion of 2022 when the business was under Albemarle's ownership.
- New production facilities are included starting in the year and month in which it first produces saleable goods. The Wodgina facility was the only new production facility with saleable goods in 2022 (however, it is excluded from the sustainability metrics; see joint venture discussion below).
- Under the financial control approach, joint ventures are included in the organizational boundary according to the equity share approach. The JBC (Safi, Jordan) joint venture is deemed to be within Albemarle's financial control, and in turn, activity data is included based on Albemarle's respective share of equity in the operation. The facilities under the MARBL joint venture (Kemerton, Wodgina) are excluded from the sustainability metrics because no saleable goods were produced in 2022 (Kemerton) or activity data was not available yet due to ongoing contract negotiations (Wodgina). All remaining joint ventures are not within Albemarle's financial control, and therefore, are excluded from measurement.

### C0.2

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(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.

**Reporting year**

**Start date**

January 1 2022

**End date**

December 31 2022

**Indicate if you are providing emissions data for past reporting years**

Yes

**Select the number of past reporting years you will be providing Scope 1 emissions data for**

3 years

**Select the number of past reporting years you will be providing Scope 2 emissions data for**

3 years

**Select the number of past reporting years you will be providing Scope 3 emissions data for**

1 year

C0.3

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**(C0.3) Select the countries/areas in which you operate.**

Australia  
Chile  
China  
Germany  
Jordan  
Netherlands  
Taiwan, China  
United States of America

C0.4

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**(C0.4) Select the currency used for all financial information disclosed throughout your response.**

USD

C0.5

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**(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.**

Financial control

C-CH0.7

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**(C-CH0.7) Which part of the chemicals value chain does your organization operate in?**

**Row 1**

**Bulk organic chemicals**

**Bulk inorganic chemicals**

**Other chemicals**

Specialty chemicals

C-MM0.7

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**(C-MM0.7) Which part of the metals and mining value chain does your organization operate in?**

**Row 1**

**Mining**

Other non-ferrous metal mining, please specify (Lithium)

**Processing metals**

Other non-ferrous metals, please specify (Lithium)

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	US0126531013

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual or committee	Responsibilities for climate-related issues
Chief Executive Officer (CEO)	The CEO - both in his capacity as CEO and as a chairman of the board - takes ownership of the GHG-reduction goals and progress against targets. The CEO sets company strategy around GHG, plans, results, and issues with the Board and Board committees. He also helps ensure that climate change topics are given appropriate time on meeting agendas and drives decisions around sustainability and climate change to consensus.
Board-level committee	The Health, Safety & Environment (HS&E) Committee of the Board of Directors (Board) is responsible for overseeing (among other items) our climate strategy including energy consumption and our greenhouse gas emissions. The HS&E Committee meets quarterly and our VP, Sustainability and Investor Relations reviews progress on our climate-related work, which includes energy and GHG emissions reduction targets.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – some meetings	<ul style="list-style-type: none"> <li>Reviewing and guiding annual budgets</li> <li>Overseeing major capital expenditures</li> <li>Overseeing acquisitions, mergers, and divestitures</li> <li>Overseeing and guiding employee incentives</li> <li>Reviewing and guiding strategy</li> <li>Overseeing the settling of corporate targets</li> <li>Monitoring progress towards corporate targets</li> <li>Reviewing and guiding the risk management process</li> </ul>	<Not Applicable>	<p>At the executive management level, our CEO and Chairman of the Board of Directors takes ownership of our greenhouse gas (GHG) emission reduction goals and our progress towards those goals. Our Board of Directors (Board) oversees our sustainability programs. Committees of the Board take the lead in discrete areas of oversight within their areas of responsibility.</p> <p>The Health, Safety &amp; Environment (HS&amp;E) Committee is responsible for overseeing (among other items) our climate strategy including energy consumption and our greenhouse gas emissions. The HS&amp;E Committee meets quarterly and our VP, Sustainability and Investor Relations reviews progress on our climate-related work, which includes energy and GHG emissions reduction targets. The Audit &amp; Finance Committee of our Board reviews our enterprise risk management (ERM) at least annually, including climate change risks as appropriate.</p> <p>In 2021, the HS&amp;E Committee discussed and approved initial GHG reduction targets for individual global business units (GBUs). After announcing the resegmentation of our GBUs in 2022, the Committee approved updated GHG reduction targets and a new scope 3-related goal for 2023 and beyond.</p> <p>In February 2023, the HS&amp;E Committee was updated on our TCFD progress, including discussing the hotspot climate scenario analysis. In May 2023, the full Board reviewed and discussed the results of our first TCFD analysis and integration into Albemarle's ERM process.</p> <p>See the committee charters and Corporate Governance Guidelines at <a href="https://www.albemarle.com/investors/corporate-governance">https://www.albemarle.com/investors/corporate-governance</a></p>

C1.1d

**(C1.1d) Does your organization have at least one board member with competence on climate-related issues?**

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	<p>The Health, Safety &amp; Environment Committee plays a critical role in evaluating the company's climate strategy and ensuring its sustainability commitments. To do so, the board members who are part of the committee must possess specific competencies, including expertise in climate science, knowledge of regulatory frameworks and policies, leadership experience in implementing climate strategies, strategic thinking on climate-related issues, and experience in climate advocacy or stakeholder engagement.</p> <p>See more information about skills, experience and background of director nominees in our 2023 proxy statement at <a href="https://investors.albemarle.com/financials/annual-reports/default.aspx">https://investors.albemarle.com/financials/annual-reports/default.aspx</a></p>	<Not Applicable>	<Not Applicable>

**C1.2**

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**(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.**

**Position or committee**

Sustainability committee

**Climate-related responsibilities of this position**

Assessing climate-related risks and opportunities  
Managing climate-related risks and opportunities

**Coverage of responsibilities**

<Not Applicable>

**Reporting line**

Reports to the board directly

**Frequency of reporting to the board on climate-related issues via this reporting line**

Quarterly

**Please explain**

Albemarle's Sustainability Steering Committee (SSC) leverages the expertise and insight of a broad, diverse group of experienced professionals across Albemarle to set and drive achievement of our global corporate sustainability strategy. The SSC strives to create value and recognition by embedding sustainability throughout our business. It promotes sustainability performance with internal and external stakeholders and helps position Albemarle as a sustainability leader in our industry and beyond.

The SSC is chaired by the Vice President of Investor Relations and Sustainability, who reports to the Chief Financial Officer, and ultimately to the board and its committees. The SSC leverage the experiences, expertise, and insight of key individuals across Albemarle. Thus, individually, SSC members are:

- Senior level executives (Executive Leadership Team or direct reports)
- Representatives from each GBU and the most relevant corporate functions
- Familiar with major stakeholders and their interests
- Advocates for advancing sustainability throughout Albemarle
- Able to regularly attend and actively participate in meetings (virtually, in person, or by proxy)

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**Position or committee**

Chief Executive Officer (CEO)

**Climate-related responsibilities of this position**

Integrating climate-related issues into the strategy  
Setting climate-related corporate targets  
Monitoring progress against climate-related corporate targets  
Managing public policy engagement that may impact the climate  
Assessing climate-related risks and opportunities  
Managing climate-related risks and opportunities

**Coverage of responsibilities**

<Not Applicable>

**Reporting line**

Reports to the board directly

**Frequency of reporting to the board on climate-related issues via this reporting line**

As important matters arise

**Please explain**

The CEO - both in his capacity as CEO and as a chairman of the board - takes ownership of the GHG-reduction goals and progress against targets. The CEO sets company strategy around GHG, plans, results, and issues with the Board and Board committees. He also helps ensure that climate change topics are given appropriate time on meeting agendas and drives decisions around sustainability and climate change to consensus.

In 2022, Albemarle introduced the Objectives and Key Results (OKR) framework into the organization as a mechanism to set ambitious internal goals at an executive level that cascade through the organization. Our CEO's OKRs include annual and quarterly climate objectives, which are often tied to broader sustainability and corporate responsibility targets.

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**Position or committee**

Chief Financial Officer (CFO)

**Climate-related responsibilities of this position**

Managing annual budgets for climate mitigation activities  
Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)

**Coverage of responsibilities**

<Not Applicable>

**Reporting line**

CEO reporting line

**Frequency of reporting to the board on climate-related issues via this reporting line**

As important matters arise

**Please explain**

As the top finance executive, the CFO is responsible for managing Albemarle's financial resources, including budgeting and investment decisions. This includes overseeing the annual budgets for climate mitigation activities and managing major capital and operational expenditures related to low-carbon products. The CFO also plays a key role in assessing climate-related risks and opportunities, as well as managing climate-related acquisitions, mergers, and divestitures. Further, the corporate sustainability team reports up to the CFO.

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C1.3

**(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?**

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	<p>Our executive leadership's compensation includes an annual incentive plan (AIP). 15% of that compensation is determined by individual performance. Some ESG objectives have typically been included in the personal goals for the CEO and other NEOs. Starting in 2021, personal goals were expanded to include additional goals such as natural resource management, stakeholder engagement, diversity, and talent management.</p> <p>Our Objectives and Key Results (OKR) system is another way that executive management helps ensure cross-functional alignment on our most critical strategic initiatives, including sustainability. For 2023, one of our CEO's five objectives is to "Be a Leading Steward of our Planet". This objective includes key results that align with our external greenhouse gas (GHG) emission reduction and water reduction targets. OKRs are reviewed by executive leadership at least quarterly.</p>

C1.3a

**(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).**

**Entitled to incentive**

Other, please specify (Employees that have set individual performance goals linked to our climate performance.)

**Type of incentive**

Monetary reward

**Incentive(s)**

Bonus - % of salary

**Performance indicator(s)**

Progress towards a climate-related target

Achievement of a climate-related target

**Incentive plan(s) this incentive is linked to**

Short-Term Incentive Plan

**Further details of incentive(s)**

Albemarle's employees who link their own performance to the company's climate goals are held accountable for meeting the company's climate-related targets through their individual OKRs.

Furthermore, our executive leadership's compensation includes an annual incentive plan (AIP). 15% of that compensation is determined by individual performance. Some ESG objectives have typically been included in the personal goals for the CEO and other leadership. Starting in 2021, personal goals were expanded to include additional goals such as natural resource management, stakeholder engagement, diversity, and talent management.

**Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan**

By linking individual objectives of our leadership to broader sustainability and corporate responsibility targets, we create a culture of accountability and ownership that is essential for achieving its climate-related commitments. This approach not only helps ensure that leadership is actively involved in driving the company's climate-related initiatives but also encourages all employees to take responsibility for meeting the company's broader sustainability goals.

C2. Risks and opportunities

C2.1

**(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?**

Yes

C2.1a

**(C2.1a) How does your organization define short-, medium- and long-term time horizons?**

	From (years)	To (years)	Comment
Short-term	0	1	Relates to our annual operational planning
Medium-term	1	5	Relates to our 5-year plan
Long-term	5	30	Relates to strategic plans with horizon beyond 5 years, including risks

C2.1b

**(C2.1b) How does your organization define substantive financial or strategic impact on your business?**

Albemarle defines impact within a 5-year time frame based on many attributes including health, safety, people, the environment, and more. For example, a significant financial impact could be lost adjusted EBITDA of \$300M or more; a significant non-financial impact could be an environmental incident taking a year or more to remediate.

We define adjusted EBITDA as earnings before interest and financing expenses, income tax expense, depreciation and amortization, as adjusted on a consistent basis for certain non-operating, non-recurring or unusual items in a balanced manner and on a segment basis. These non-operating, non-recurring or unusual items may include acquisition and integration-related costs, gains or losses on sales of businesses, restructuring charges, facility divestiture charges, certain litigation and arbitration costs and charges, non-operating pension and OPEB items and other significant non-recurring items.

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**C2.2**

**(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.**

**Value chain stage(s) covered**

Direct operations  
Upstream  
Downstream

**Risk management process**

Integrated into multi-disciplinary company-wide risk management process

**Frequency of assessment**

Annually

**Time horizon(s) covered**

Short-term  
Medium-term  
Long-term

**Description of process**

In 2022, we prioritized risk management to help ensure the resiliency of our company. We created the role of Chief Risk Officer, who is responsible for our Enterprise Risk Management (ERM) program.

The ERM program identifies and defines risks that could significantly impact company shareholder value on a sustained or permanent basis. The ERM program helps to assess key risks, identify gaps, and develop and implement risk mitigation efforts. This information is integrated into our annual and long-range planning processes. Quantitative and qualitative factors are considered for rating each identified risk regarding severity and likelihood to determine which risks should be prioritized. The ERM program involves extensive engagement with senior company leaders worldwide, and risk mitigation and management activities are tested with a broad group of relevant stakeholders. The Chief Risk Officer regularly reports to the Audit & Finance Committee, generally highlighting those risks identified as the most significant and reviewing the company's methods of risk assessment and risk mitigation strategies. In addition, each GBU addresses its most significant risks in its periodic strategy updates to the Board.

Furthermore, in 2022 we updated our ERM framework, which requires risk owners to specifically consider sustainability factors when assessing the impact, likelihood and severity of a risk. GBUs and functions were required to apply the framework to reaffirm existing risks while identifying emerging ones. These risks, and associated remediation, are explicitly incorporated into their long-term strategy planning, annual operating and business continuity plans. In 2023, we will migrate our risk register to a new ERM platform hosted by Audit Board, which will enhance our ability to track changes in our residual risk profile and progress with mitigating actions.

In addition to the potential risks identified and defined in our ERM program, we have identified and assessed our exposure to material climate-related risks and opportunities in alignment with the TCFD recommendations.

In 2022, we conducted a high-level review of potential risks and opportunities across our company and value chain, focusing on our two core business units: Energy Storage and Specialties. We worked together with climate consultancy South Pole and cross-functional stakeholders at Albemarle via a series of workshops and interviews to develop an initial list of climate-related physical and transition risks and opportunities that could impact the business. Following further stakeholder consultation, we prioritized risks and opportunities based on their potential impact for further assessment via climate scenario analysis.

The scenario analysis highlights the most severe risks to our business, and accordingly the areas where risk mitigation is the most important. We plan to use the results of this scenario analysis to collaborate with function leads across Albemarle to develop specific risk mitigation strategies. Climate risk mitigation is a crucial component of our Climate Strategy, and understanding those risks now allows us to plan and prepare for the future impacts of climate change on our business.

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**C2.2a**

**(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?**

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	As a chemical company with international trading practices, we are bound to comply with carbon taxation and cap-and-trade systems, regulation governing the correct use of certain chemicals, and carbon footprint and circular economy related regulatory requirements, among others. For example, the regulation of lithium-based batteries marketed in the EU has become more stringent, such that battery manufacturers will be required to declare carbon footprints and performance classes, and meet specified lifecycle carbon footprint thresholds in the future. Failure to meet regulatory expectations or outperformance by competitors with lower carbon intensity of production could therefore pose a risk to Albemarle's competitiveness.
Emerging regulation	Relevant, always included	<p>In terms of emerging regulation, there are several potential risks that we need to consider as a chemical company. For instance, we may face further carbon taxation, cap-and-trade systems, and carbon border adjustment management systems. We may also be subject to additional climate-related disclosure requirements. For example, the recent announcement of a proposed SEC rule related to climate risk disclosure requirements would require us to disclose the potential impact of climate change on our business. We need to continue to carefully assess our exposure to climate risks and develop appropriate strategies for managing and disclosing these risks to stakeholders.</p> <p>In the EU, the upcoming introduction of the European Taxonomy (EUT) and Corporate Sustainability Reporting Directive (CSRD) may require us to provide more detailed information on our environmental, social, and governance (ESG) practices, while the EU Battery Regulation will introduce a range of climate- and sustainability-related measures for the EU battery value chain over time. Furthermore, the Carbon Border Adjustment Mechanism (CBAM) is an emerging regulation that aims to address carbon leakage by imposing carbon pricing on imported goods. As a global leader in lithium and advanced materials solutions, Albemarle is likely to be affected by CBAM as it could impact the cost of our imported raw materials and potentially increase the price of our products, depending on how the regulation is implemented. Therefore, we are closely monitoring the development of CBAM and assessing its potential impact on our business operations and supply chain. We need to help ensure that we are well-positioned to comply with these requirements, while maintaining our commitment to sustainability and ESG best practices.</p>
Technology	Relevant, always included	<p>We are proud to design and develop products that contribute to a more sustainable world for all. Our global research and development team of scientists and engineers has made tremendous strides in our sustainability efforts and are eager to take on new challenges. Whether it is enabling electrification, cleaner transportation, or improved fire safety standards, Albemarle is pushing the boundaries of what is possible while expanding our competitive advantage.</p> <p>Our data science team analyzes big data coming into our organization to support faster and more accurate decision-making in the identification of promising product development opportunities for our Energy Storage GBU. Together with our R&amp;D scientists and engineers, we also deploy physics-based performance models to help us anticipate the value of novel lithium materials, often before we have developed them, to prioritize our research projects. These models also help our application engineers and New Business Development (NBD) team position new products where they create greatest market demand and value.</p> <p>We also discovered a new opportunity to accelerate the development of advanced forms of lithium to make next generation batteries more energy dense, safer, and more cost-efficient, and therefore, we opened Albemarle's Battery Materials Innovation Center (BMIC). This state-of-the-art technology lab at our Kings Mountain site in North Carolina includes cell build and test capabilities that allow us to emulate how our customers evaluate &amp; utilize our materials.</p> <p>Furthermore, our innovation team is working on chemistries that seek to enable us to recover lithium from end-of-life batteries and use it as a feedstock in conversion plants to produce battery-grade quality lithium.</p>
Legal	Relevant, always included	<p>There are various legal risks associated with our operations, particularly in relation to compliance with environmental regulations and emerging legislation. Legal risks can arise from various sources, including regulatory compliance, litigation, and contractual obligations. Failure to comply with these requirements can result in legal and reputational risks, fines, or penalties. Some examples:</p> <ul style="list-style-type: none"> <li>● In 2020, the U.S. Environmental Protection Agency (EPA) reached a settlement with a chemical company over alleged violations of hazardous waste management regulations. This could indicate a trend towards increased enforcement of environmental regulations by government agencies in the U.S.</li> <li>● The European Union (EU) has been introducing new chemicals legislation, such as the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) Regulation, which could pose compliance challenges for companies that operate in the EU.</li> <li>● The Chinese government has also been increasing its regulation of the chemical industry, particularly in relation to environmental protection. This includes the introduction of the Chemical Substance Environmental Management (CSEM) Regulation, which requires companies to register and manage chemical substances in a more transparent manner.</li> <li>● In 2021, the U.S. Securities and Exchange Commission (SEC) announced that it would be increasing its focus on climate-related disclosure by publicly traded companies. This could lead to legal risks for Albemarle if we fail to adequately disclose our climate-related risks and opportunities.</li> </ul> <p>In addition, Albemarle is also monitoring emerging regulatory frameworks such as the EU Taxonomy, which aims to provide a classification system for sustainable economic activities. As a company that is committed to sustainability, we are assessing the impact of the EU Taxonomy on our business operations and supply chain, and considering how we can align our practices with the evolving regulatory landscape.</p>
Market	Relevant, always included	Due to government efforts to reduce national emissions and consumer behavior shifting to low-carbon mobility options, lithium battery products pose a revenue opportunity. In 2022, Albemarle was awarded a \$150 million grant from the U.S. Department of Energy (DOE) as part of President Biden's Bipartisan Infrastructure Law to expand domestic manufacturing of batteries for electric vehicles (EVs). As one of the only lithium companies currently producing battery-grade lithium from U.S. resources, we are proud to partner with the federal government to strengthen the domestic supply chain for the growing EV market.
Reputation	Relevant, always included	Insufficient climate performance could result in different perceptions of the company by investors and customers. One reason is that customers are placing greater emphasis on climate performance in their selection of supply chain partners – particularly as regulations mandate lower carbon footprint product lifecycles - such that perceived insufficient climate performance / progress on climate action could pose a risk of customer loss.
Acute physical	Relevant, always included	Albemarle assesses its exposure to material physical climate-related risks across the company and value chain, with our most recent assessment focusing on two core business units: Energy Storage and Specialties. We based our assessment using three different factors: vulnerability, which measures the strength of impacts and ability to recover (based on historical impacts, literature review and/or modeling); exposure, which maps the risks according to our operations and supply chain across specific regions; and hazard, which measures the likelihood, occurrence and severity of these risks.
Chronic physical	Relevant, always included	We also consider chronic physical risks in our climate-related risk assessment. For example, our recent analysis found that risks associated with water availability in Chile and in Jordan could be among the risks with the highest potential material impact to Albemarle's operations. Climate change is projected to increase water stress and reduce the amount of available freshwater in Jordan, which could lead to operational downtime and associated production losses at Albemarle's Jordan Bromine Company Ltd. (JBC) plant, as freshwater is needed in the production process.

**C2.3**

**(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?**

Yes

**C2.3a**

**(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.**

**Identifier**

Risk 2

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**



Chronic physical	Changing precipitation patterns and types (rain, hail, snow/ice)
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**Primary potential financial impact**

Decreased revenues due to reduced production capacity

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

Rising temperatures and declining precipitation associated with climate change are expected to increase water stress and reduce the amount of available water in the Salar de Atacama, Chile. If the water level falls below a critical threshold level, a warning plan is issued and the brine needs to be decreased and in some cases also the water pumping. Not being able to pump brine would lead Albemarle to look for other sources of water (which could be more expensive), and in the worst case the lack of available water could lead to operational downtime in our Energy Storage operations. Both could trigger financial losses for Albemarle, while increased water scarcity could also increase reputational pressure on all actors in the region.

**Time horizon**

Medium-term

**Likelihood**

More likely than not

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

No, we do not have this figure

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

<Not Applicable>

**Potential financial impact figure – maximum (currency)**

<Not Applicable>

**Explanation of financial impact figure**

While the exact financial impact number is still under review, we understand that there could be additional impact to our employees and communities as well as potential for suspension of operations at critical sites.

**Cost of response to risk**

**Description of response and explanation of cost calculation**

In 2022, we successfully introduced a state-of-the-art thermal evaporator at our La Negra facility in Chile, representing a \$100 million investment. This innovative technology revolutionizes our approach to aqueous waste streams, which were previously disposed of in solar evaporation ponds. Instead, the thermal evaporator converts these waste streams into high-purity water, which is then recycled and utilized within our advanced processing plant. With the implementation of the thermal evaporator, we have effectively doubled the production capacity of lithium carbonate at our La Negra site without significantly increasing our freshwater consumption. We have also signed an agreement with a third party, CRAMSA, to provide us with up to 500 l/s desalinated water starting in 2027 and pending permitting and construction.

**Comment**

**Identifier**

Risk 3

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Chronic physical	Changing precipitation patterns and types (rain, hail, snow/ice)
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**Primary potential financial impact**

Decreased revenues due to reduced production capacity

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

Climate change is projected to increase water stress and reduce the amount of available freshwater in Jordan. This could lead to operational downtime and associated production losses at Albemarle's Jordan Bromine Company Ltd. (JBC) plant, as freshwater is needed in the production process.

The period of almost no rain that typically occurs between May and September in the baseline is projected to expand, and precipitation in late winter / early spring is expected to decline. Meanwhile, temperatures during the dry summer months are expected to warm, which could lead to a peak evaporation rate in the early summer, which would exacerbate the shortage of natural water supply.

**Time horizon**

Medium-term

**Likelihood**

Likely

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

No, we do not have this figure

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

<Not Applicable>

**Potential financial impact figure – maximum (currency)**

<Not Applicable>

**Explanation of financial impact figure**

While the exact financial impact number is still under review, we understand that there could be additional impact to our employees and communities as well as potential for suspension of operations at critical sites.

**Cost of response to risk**

**Description of response and explanation of cost calculation**

We have implemented innovative technology to recycle by-product streams derived from our production process of brominated flame retardants (BFRs). This sustainable approach aids in reducing energy consumption, minimizing raw material usage, conserving water, and lowering greenhouse gas emissions. Our progress in the NEBO project is also noteworthy. Through NEBO, we can transform a waste stream into additional finished Wellbrom products, which results in increased revenues, cost reduction, and improved sustainability. Furthermore, NEBO is expected to reduce freshwater usage by 11% in our operations based in Jordan.

**Comment**

**Identifier**

Risk 1

**Where in the value chain does the risk driver occur?**

Direct operations

**Risk type & Primary climate-related risk driver**

Emerging regulation	Carbon pricing mechanisms
---------------------	---------------------------

**Primary potential financial impact**

Increased direct costs

**Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

**Company-specific description**

Carbon pricing mechanisms are expected to be increasingly introduced, expanded, and / or strengthened in future in the transition to a low-carbon economy.

The anticipated rapid increase in carbon prices presents a potential financial risk to Albemarle. This rise in prices can directly impact the company's operating costs, such as through industry carbon pricing, or indirectly through power and energy sector emission pricing. Additionally, there is a possibility of carbon costs being passed down the supply chain by Albemarle's suppliers.

**Time horizon**

Medium-term

**Likelihood**

Unknown

**Magnitude of impact**

Medium-high

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

80000000

**Potential financial impact figure – maximum (currency)**

300000000

**Explanation of financial impact figure**

Estimated financial impacts associated with potential future carbon pricing mechanisms were calculated for scope 1 and 2 emissions in 2030 assuming an emission pathway aligned with Albemarle's climate ambitions.

Potential future financial impacts were assessed under two scenarios: a current policies scenario and a 1.5°C scenario. The current policies scenario reflects the minimum financial impact estimate, and uses carbon prices based on those modeled in the International Energy Agency (IEA) Stated Policies Scenario (STEPS) in addition to independent research by a third-party consultant. The 1.5°C scenario reflects the maximum financial impact estimate, and uses carbon prices based on those modeled in the International Energy Agency (IEA) Net Zero Emissions by 2050 (NZE) scenario.

**Cost of response to risk**

**Description of response and explanation of cost calculation**

**Comment**

**(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?**

Yes

C2.4a

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**(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.**

**Identifier**

Opp1

**Where in the value chain does the opportunity occur?**

Direct operations

**Opportunity type**

Markets

**Primary climate-related opportunity driver**

Access to new markets

**Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

**Company-specific description**

Rapid growth in low-carbon mobility is expected to continue in the mid-and-long term. Albemarle is well positioned to capitalize on significant revenue opportunities available due to this growth.

**Time horizon**

Long-term

**Likelihood**

Very likely

**Magnitude of impact**

High

**Are you able to provide a potential financial impact figure?**

Yes, an estimated range

**Potential financial impact figure (currency)**

<Not Applicable>

**Potential financial impact figure – minimum (currency)**

3500000000

**Potential financial impact figure – maximum (currency)**

3750000000

**Explanation of financial impact figure**

There are many ways to consider this opportunity. We derived the financial impact figure range from the difference in net sales in Lithium from 2021 to 2022. This impact is for 2022 only, as the energy storage market is expected to continue growing in the years to come. Our Energy Storage business serves multiple markets, and its growth is primarily driven by demand for electric vehicles. For detailed financial figures, see the Current Report on Form 8-K filed with the Securities and Exchange Commission (SEC) on February 15, 2023.

**Cost to realize opportunity**

1300000000

**Strategy to realize opportunity and explanation of cost calculation**

Our total CAPEX for 2022 was \$1.3 billion. We focus on using our capital and free cash flow to support our highest growth and highest return opportunities including the electric vehicle market, which is a primary driver for our growth. However, our 2022 CAPEX will serve our overall markets around mobility, energy, connectivity and health. Note that this estimated cost includes only CAPEX allocated in 2022. For detailed financial guidance, please see our investor site at [investors.albemarle.com](https://investors.albemarle.com).

As an example of longer-term investments, we plan to locate our lithium hydroxide Mega-Flex facility in Chester County, South Carolina. Plans for the facility include an initial investment of at least \$1.3 billion to help meet the demand for domestic and international electric vehicles and lithium-ion batteries. This facility is expected to help increase the production of U.S.-based lithium resources to fuel the clean energy revolution while bringing us closer to our customers as the supply chain is built out in North America.

**Comment**

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C3. Business Strategy

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C3.1

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**(C3.1) Does your organization's strategy include a climate transition plan that aligns with a 1.5°C world?**

**Row 1**

**Climate transition plan**

No, but our strategy has been influenced by climate-related risks and opportunities, and we are developing a climate transition plan within two years

**Publicly available climate transition plan**

<Not Applicable>

**Mechanism by which feedback is collected from shareholders on your climate transition plan**

<Not Applicable>

**Description of feedback mechanism**

<Not Applicable>

**Frequency of feedback collection**

<Not Applicable>

**Attach any relevant documents which detail your climate transition plan (optional)**

<Not Applicable>

**Explain why your organization does not have a climate transition plan that aligns with a 1.5°C world and any plans to develop one in the future**

Albemarle is committed to managing the risks and opportunities associated with climate change and the transition to a low-carbon economy. Since 2022, we have been focusing on scenario analyses and risks & opportunities assessment to understand the potential impact of climate change on our business operations and supply chain. This has helped us to identify key areas of risk and opportunity, and to develop strategies to manage these effectively.

As part of our commitment to sustainability, Albemarle has committed to achieving net zero emissions by 2050 in line with the Paris Agreement goals. To achieve this, we have defined intermediate targets for 2030 and have plans in place to meet these goals. In 2023, we plan to begin to create a net-zero roadmap, which will focus on operationalizing emissions reductions from 2030 to 2050 to reach net zero by 2050.

In the coming years, Albemarle plans to continue to structure its climate transition plan, incorporating new data and insights as they become available. We are committed to addressing the risks and opportunities associated with climate change in a proactive and strategic manner, and to ensuring the long-term success and sustainability of our business.

**Explain why climate-related risks and opportunities have not influenced your strategy**

<Not Applicable>

**C3.2**

**(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?**

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative and quantitative	<Not Applicable>	<Not Applicable>

**C3.2a**

**(C3.2a) Provide details of your organization's use of climate-related scenario analysis.**

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Physical climate scenarios	RCP 8.5 Company-wide	<Not Applicable>	Albemarle has undertaken climate scenario analysis in two stages. In the first stage, 29 risks and opportunities were selected for hotspot scenario analysis. Physical risks were evaluated using the IPCC's RCP 8.5 scenario. Risks including freezing events, heatwaves, tropical cyclones, water scarcity, wildfires, thunderstorms, and flooding were evaluated to understand the projected future magnitude of change in these topics compared to the current baseline, covering a range of key countries from Albemarle's value chain (including the USA, Jordan, Chile, China, Australia, and the West Pacific). Based on this analysis, in the second stage an in-depth scenario analysis was undertaken to evaluate four of the risks identified to be potentially most impactful in more detail. These risks – water availability in Jordan; water availability in Chile; thunderstorms in the USA; and heat extremes and impacts on power supplies in China – were assessed under both a 2°C and a 4°C climate scenario (SSP2-4.5 and SSP5-8.5, respectively), taking into account both 2030 and 2050 time horizons.
Transition scenarios	IEA NZE 2050 Company-wide	<Not Applicable>	Albemarle has undertaken climate scenario analysis in two stages. In the first stage, 29 risks and opportunities were selected for hotspot scenario analysis. Transition risks and opportunities were evaluated using a 1.5°C-aligned scenario (based on the reference Net Zero Emissions by 2050 (NZE) scenario provided by the IEA). Risks and opportunities across four main areas – policy and legal, technology, market, and reputation – were evaluated to understand the projected future magnitude of change in these topics compared to the current baseline, covering a range of key countries from Albemarle's value chain (the USA, Chile, China, Australia, and Europe, with some cross-cutting risks and opportunities evaluated at a global level). Based on this analysis, an in-depth scenario analysis was undertaken to evaluate five of the risks and opportunities identified to be potentially most impactful in more detail. These risks – growth of the electric vehicle market, expansion of battery recycling, greater regulation of lithium-ion batteries in Europe, potential loss of customers linked to climate performance, and carbon pricing – were assessed under a 1.5° climate scenario, to 2030 and 2050, taking into account both 2030 and 2050 time horizons.

**C3.2b**

**(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.**

**Row 1**

**Focal questions**

1. What is the impact of climate change on the demand for Lithium (enabling the energy transition)?;
2. How might climate change impact water availability in Jordan and what impacts could this have for bromine production?;
3. How might climate change impact water availability in Chile and what impacts could this have for lithium production?;
4. How might carbon pricing impact operational costs in the future under a low-carbon transition?;
5. What implications might future carbon footprint-related measures under the EU Battery Regulation have for Albemarle's competitiveness in the EU in a low-carbon transition?;
6. What potential risk Albemarle could face of customer loss linked to the perception of our climate performance in a low-carbon transition?

**Results of the climate-related scenario analysis with respect to the focal questions**

1. Lithium demand profiles depend on many (economic) factors. The adoption rate of Electric Vehicles (Evs) is a very important parameter that is driven by legislation, public perception and more. Our customers (such as Automotive OEMs) purchase either Lithium Carbonate or Lithium Hydroxide from Albemarle, which Albemarle produces in Chile, USA, Australia, and China. The climate scenarios by IPCC and their annual updates are important to public perception around climate and impact decision-making in countries where Albemarle sells products. Mandates in China, Europe, and the US have thus positively affected the Lithium demand.;
2. Climate change is projected to increase water stress and reduce the amount of available freshwater in Jordan by 2030 and 2050 under both a 2°C and a 4°C climate scenario, driven by a projected decrease in overall rainfall and an increase in temperatures during the dry summer months.;
3. Rising temperatures and declining precipitation associated with climate change are expected to increase water stress and reduce the amount of available water in the Salar de Atacama in 2030 and 2050.;
4. Carbon pricing mechanisms are likely to be increasingly introduced, expanded, and/or strengthened in future in the transition to a low-carbon economy. Albemarle could be exposed to rising costs in 2030 and 2050 via application of carbon pricing mechanisms to direct emissions in key operating regions, as well as indirect costs due to potential passthrough of carbon costs by suppliers, particularly under a 1.5C-aligned scenario. Achievement of Albemarle's climate ambitions has the potential to reduce estimated carbon cost exposure.;
5. Introduction of carbon footprint declaration requirements, performance classes, and maximum thresholds for batteries under the EU Battery Regulation will increase pressure on battery manufacturers to minimize the lifecycle carbon footprint of their products. In a 1.5C-aligned transition, increasingly stringent expectations on battery manufacturers are expected to increase their incentive to select the least emissions-intensive raw material components to use in production.;
6. Growing stakeholder pressure on companies to reduce the climate impacts of their operations and value chains is leading customers to place greater emphasis on climate performance in their selection of supply chain partners. In a 1.5C scenario, customers' climate expectations and the overall climate-related regulatory landscape are expected to become increasingly stringent as companies and governments strive to meet their climate objectives; however, rapid market growth expectations have potential to lessen customers' emphasis on climate performance as they prioritize ensuring security of supply, particularly over the 2030 time horizon.

**C3.3**

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**(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.**

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>Growing stakeholder and regulatory pressure on companies to reduce the climate impacts of their operations and value chains is leading customers to place greater emphasis on climate performance of their supply chain partners. Albemarle may even be exposed to greater scrutiny of its climate action given our position as an enabler of the transition away from existing carbon-intensive automotive products to less emissions-intensive transportation. According to our climate-related risk analysis, in a 1.5°C scenario we can expect to see customers' climate expectations and the overall regulatory landscape become increasingly stringent by 2050 as companies and governments strive to meet long-term net zero goals, particularly in the post-2030 period. Meanwhile, demand for lithium is expected to grow rapidly, particularly in the period to 2030, due to the high projected growth of EVs and battery storage.</p> <p>To be prepared for this scenario, we have been focusing on maximizing lithium recovery at the wellhead, pond and the conversion stages of our current operations to get the highest yields possible from our resources. In addition, we are exploring accessing non-conventional resources using new technologies, such as direct lithium extraction (DLE). Each new resource that we evaluate has a different profile, meaning that we must evolve in the technologies we explore for lithium extraction. Albemarle is also investing in renewable energy in production and processing sites to reduce operational carbon emissions, which in turn, reduces the life cycle carbon footprint of our products. Additionally, new resources present us with opportunities to improve our natural resource management, including emissions, energy and water management, from the outset of project development.</p>
Supply chain and/or value chain	Yes	<p>As a chemical company with international trading practices, we are exposed to climate-related regulatory risks such as carbon footprint related requirements as well as carbon taxes and emission trading schemes, which could increase operating costs via a price on direct emissions in key operating regions, as well as indirect costs due to potential passthrough of carbon costs by suppliers.</p> <p>As part of our GHG emissions reduction strategy, we are continuously looking at ways to reduce the emissions generated through our logistics activities. Our Distribution Safety Department manages Health Safety &amp; Environment for our logistics suppliers and uses a transportation management tool to measure and monitor their carbon footprint. We introduced this tool for our marine transportation in 2021 and rolled it out globally throughout 2022 for all transportation modes. We apply data analytics to help us determine where we can take trucks off the road and switch to means of transport, such as intermodal, that reduce our carbon footprint. We try to shorten route distances where possible, as well as the number of delivery visits per vendor to our sites. In addition, we introduced a fuel surcharge program to encourage our suppliers to reduce their environmental impact.</p> <p>In 2023, we are introducing a new scope 3, category 1 target to engage with suppliers to collect 75% (by 2023) and 90% (by 2024) of our raw material carbon footprint. This initial scope 3 goal will help set the foundation for a future scope 3 reduction target. Our procurement team is incorporating collecting environmental data from suppliers into our procurement process, prioritizing the products we estimate to contribute the most to our scope 3 footprint. We are performing a scope 3 data readiness assessment this year with the intent to conduct limited assurance on our scope 3 data in 2024.</p>
Investment in R&D	Yes	<p>At Albemarle, we are in the business of developing industry-leading innovations from mine to market that support the low-carbon transition while meeting customer and regulatory expectations. Some examples of this innovation in 2022 include:</p> <ul style="list-style-type: none"> <li>● We acquired a site in Charlotte, N.C., that will become the future location of the Albemarle Technology Park (ATP). As part of our mine-to-market innovation strategy, we are investing over \$180 million in the ATP to establish a worldclass facility designed for novel materials research, advances in process development and acceleration of next-generation lithium products in partnership with strategic customers. By co-locating these critical activities and collaborations, we anticipate that enhanced process technologies developed at the ATP will unlock new lithium resources, enhance lithium recovery, improve production methods and introduce new forms of lithium to enable higher levels of battery performance</li> <li>● We introduced MercLok™, designed for the rapid stabilization of mercury found in a range of soils and industrial wastes</li> <li>● We introduced SAYTEX@ALERO®, our next-generation, large-molecule fire safety solution, to the market. This polymeric flame retardant features greater versatility, enabling the highest level of fire safety performance in a wide range of polymers and applications with higher-level environmental performance. In addition, ALERO® provides enhanced stability which supports excellent recyclability of flame-retardant plastics, adding to its sustainability profile.</li> </ul>
Operations	Yes	<p>Albemarle could be exposed to rising costs via application of carbon pricing mechanisms to the company's direct emissions in key operating regions.</p> <p>In 2021, we issued the Albemarle Climate Strategy, which outlines our approach and responsibility to address the impact of our operations on the environment and reduce the risks associated with potential carbon cost exposure. We have committed to achieving science-based climate targets for our GBU. We recognize that reducing our carbon footprint is a multi-decade, continuous improvement journey, which requires investment in technology, infrastructure, and people as well as partnerships with suppliers and customers. We are currently building out our net zero roadmap.</p> <p>Furthermore, we're incorporating additional renewable energy into all aspects of our operations. From developing solar power for Kemerton, to exploring Renewable Natural Gas alternatives in the United States, green energy is a global pursuit within our model of Sustainable Procurement and complements the role Albemarle already plays in the world's clean energy transition.</p>

**C3.4**

**(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.**

	Financial planning elements that have been influenced	Description of influence
Row 1	Capital expenditures Capital allocation Acquisitions and divestments	<p>Our 2030 targets guide our capital investments to reduce our carbon footprint, and we spent significant budget in 2022 that was allocated to operationalizing these reductions.</p> <p>Furthermore, the demand for global fleet electrification is driving the need for rapid deployment of capital.</p> <p>To meet the expansion of low carbon mobility opportunity, we evaluate both developing our own lithium resource and conversion sites as well as acquisitions of existing sites and operations.</p>

**C3.5**

**(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?**

	Identification of spending/revenue that is aligned with your organization's climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	No, but we plan to in the next two years	<Not Applicable>

**C4. Targets and performance**

C4.1

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**(C4.1) Did you have an emissions target that was active in the reporting year?**

Absolute target  
Intensity target

C4.1a

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**(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.**

**Target reference number**

Abs 1

**Is this a science-based target?**

Yes, we consider this a science-based target, but we have not committed to seek validation of this target by the Science Based Targets initiative within the next two years

**Target ambition**

Well-below 2°C aligned

**Year target was set**

2020

**Target coverage**

Business division

**Scope(s)**

Scope 1  
Scope 2

**Scope 2 accounting method**

Market-based

**Scope 3 category(ies)**

<Not Applicable>

**Base year**

2019

**Base year Scope 1 emissions covered by target (metric tons CO2e)**

442089

**Base year Scope 2 emissions covered by target (metric tons CO2e)**

216926

**Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Base year total Scope 3 emissions covered by target (metric tons CO2e)**

<Not Applicable>

**Total base year emissions covered by target in all selected Scopes (metric tons CO2e)**

659015

**Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1**

100

**Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2**

100

**Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1:**

**Purchased goods and services (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)**

<Not Applicable>

**Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)**

<Not Applicable>

**Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)**

<Not Applicable>



**Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes**

100

**Target year**

2030

**Targeted reduction from base year (%)**

27.5

**Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]**

477785.875

**Scope 1 emissions in reporting year covered by target (metric tons CO2e)**

435863

**Scope 2 emissions in reporting year covered by target (metric tons CO2e)**

150649

**Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)**

<Not Applicable>

**Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)**

586512

**Does this target cover any land-related emissions?**

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

**% of target achieved relative to base year [auto-calculated]**

40.0062627902662

**Target status in reporting year**

Underway

**Please explain target coverage and identify any exclusions**

This target includes all Bromine and Catalysts operations (together). We have set an absolute reduction target of 27.5% reduction in 2030 vs 2019 in line with the WB2C scenario. Even though the target is based on climate scenarios, it does not meet SBTi requirements. For example, it is not company wide and it does not include scope 3 emissions. For these reasons, we will not seek validation.

**Plan for achieving target, and progress made to the end of the reporting year**

Both GBU's have mitigation plans to achieve the 2030, comprising amongst others, investments in new equipment (modern steam boiler), heat integration, and procurement of green electricity.

By 2022, we signed contracts for renewable energy supply and certificates in North America, Chile and China, with supply beginning in 2023. We also reduced electricity consumption as a result of new wells in Magnolia and energy reduction projects in Amsterdam and we are working in the implementation of AI in the Amsterdam and Magnolia sites to increase energy efficiency.

**List the emissions reduction initiatives which contributed most to achieving this target**

<Not Applicable>

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C4.1b

**(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).**

**Target reference number**

Int 1

**Is this a science-based target?**

No, but we are reporting another target that is science-based

**Target ambition**

<Not Applicable>

**Year target was set**

2020

**Target coverage**

Business division

**Scope(s)**

Scope 1

Scope 2

**Scope 2 accounting method**

Market-based

**Scope 3 category(ies)**

<Not Applicable>

**Intensity metric**

Metric tons CO2e per metric ton of product

**Base year**

2019

**Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)**

1.6

**Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)**

1.3

**Intensity figure in base year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for total Scope 3 (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)**

3

**% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure**

100

**% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure**

100

**% of total base year emissions in Scope 3, Category 1: Purchased goods and services covered by this Scope 3, Category 1: Purchased goods and services intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 2: Capital goods covered by this Scope 3, Category 2: Capital goods intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) covered by this Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution covered by this Scope 3, Category 4: Upstream transportation and distribution intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 5: Waste generated in operations covered by this Scope 3, Category 5: Waste generated in operations intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 6: Business travel covered by this Scope 3, Category 6: Business travel intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 7: Employee commuting covered by this Scope 3, Category 7: Employee commuting intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 8: Upstream leased assets covered by this Scope 3, Category 8: Upstream leased assets intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution covered by this Scope 3, Category 9: Downstream transportation and distribution intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 10: Processing of sold products covered by this Scope 3, Category 10: Processing of sold products intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 11: Use of sold products covered by this Scope 3, Category 11: Use of sold products intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products covered by this Scope 3, Category 12: End-of-life treatment of sold products intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 13: Downstream leased assets covered by this Scope 3, Category 13: Downstream leased assets intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 14: Franchises covered by this Scope 3, Category 14: Franchises intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Category 15: Investments covered by this Scope 3, Category 15: Investments intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Other (upstream) covered by this Scope 3, Other (upstream) intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3, Other (downstream) covered by this Scope 3, Other (downstream) intensity figure**

<Not Applicable>

**% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this total Scope 3 intensity figure**

<Not Applicable>

**% of total base year emissions in all selected Scopes covered by this intensity figure**

100

**Target year**

2030

**Targeted reduction from base year (%)**

0

**Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]**

3

**% change anticipated in absolute Scope 1+2 emissions**

0

**% change anticipated in absolute Scope 3 emissions**

0

**Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)**

1.5

**Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)**

1.2

**Intensity figure in reporting year for Scope 3, Category 1: Purchased goods and services (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 2: Capital goods (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 5: Waste generated in operations (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 6: Business travel (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 7: Employee commuting (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 8: Upstream leased assets (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 10: Processing of sold products (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 11: Use of sold products (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 13: Downstream leased assets (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 14: Franchises (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Category 15: Investments (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Other (upstream) (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for Scope 3, Other (downstream) (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for total Scope 3 (metric tons CO2e per unit of activity)**

<Not Applicable>

**Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)**

2.7

**Does this target cover any land-related emissions?**

No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

**% of target achieved relative to base year [auto-calculated]**

<Not Applicable>

**Target status in reporting year**

Underway

**Please explain target coverage and identify any exclusions**

An absolute target is not feasible for our Lithium GBU given its rapid growth rate to meet increasing industry demand for low-carbon mobility. The intensity target for 2030 is defined as metric ton CO2e emitted per metric ton lithium products produced. We strive to build additional Lithium capacity in a GHG-intensity neutral manner (scope-1 and 2). This is a challenge because new plants are based on (more energy-intensive) rock-based Lithium. The entire Lithium GBU is covered.

**Plan for achieving target, and progress made to the end of the reporting year**

We are on track to meet our target to grow our Lithium business in a carbon-intensity neutral manner through 2030, based on scope 1 and 2 Lithium GHG emissions. In

2022, Albemarle's Lithium GHG-intensity was 2.7 mt CO2 e/mt product, down year-on-year primarily due to additional lower carbon-intensity brine-based production in Chile, as well as increased use of renewable energy globally. In the future, Lithium carbon-intensity is expected to remain below our 3.0 mt CO2 e/mt product intensity target as we anticipate reduction measures to offset higher rock-based production volumes.

The GBU has an extensive list of GHG-mitigation measures ranging from better design of new plants, investment in innovative equipment and greening of the purchasing electricity mix. In 2022, we began to transition to e-mobility at La Negra plant, we started operating a photovoltaic plant at eh Baquedano Logistics Center (SALMAG), which delivers clean energy to all sites facilities, we signed contract for renewable energy supply and certificates with supply beginning in 2023 and started implementing AI at La Negra Site to improve energy efficiency.

**List the emissions reduction initiatives which contributed most to achieving this target**

<Not Applicable>

**C4.2**

**(C4.2) Did you have any other climate-related targets that were active in the reporting year?**

Net-zero target(s)

**C4.2c**

**(C4.2c) Provide details of your net-zero target(s).**

**Target reference number**

NZ1

**Target coverage**

Company-wide

**Absolute/intensity emission target(s) linked to this net-zero target**

Abs1

**Target year for achieving net zero**

2050

**Is this a science-based target?**

No, and we do not anticipate setting one in the next two years

**Please explain target coverage and identify any exclusions**

Albemarle has committed to the long-term target of net zero in 2050 and interim targets as defined under 4.1. There is a pathway to realize the goals under C4.1 (for 2030). For net-zero 2050 we depend on the development of alternative green energy sources which are currently not available yet. To drive a reduction in our greenhouse gas emissions, our plan involves prioritizing optimal energy efficiency in our operations and ramping up the utilization of renewable energy sources. We are currently in the process of developing a comprehensive roadmap outlining our path to achieving net-zero emissions.

**Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?**

Unsure

**Planned milestones and/or near-term investments for neutralization at target year**

<Not Applicable>

**Planned actions to mitigate emissions beyond your value chain (optional)**

**C4.3**

**(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.**

Yes

**C4.3a**

**(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.**

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	33	
To be implemented*	5	2700
Implementation commenced*	11	52968
Implemented*	13	74488
Not to be implemented		

**C4.3b**

**(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.**

**Initiative category & Initiative type**

Energy efficiency in production processes	Process optimization
---	----------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

180

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

75000

**Investment required (unit currency – as specified in C0.4)**

50000

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

16-20 years

**Comment**

REFCAT: Reduction wash water temperature

**Initiative category & Initiative type**

Energy efficiency in production processes	Machine/equipment replacement
---	-------------------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

2000

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

900000

**Investment required (unit currency – as specified in C0.4)**

8000000

**Payback period**

Please select

**Estimated lifetime of the initiative**

16-20 years

**Comment**

REFCAT: Installation of new boiler house with higher efficiency and better location to minimize transport heat losses.

**Initiative category & Initiative type**

Energy efficiency in production processes	Waste heat recovery
---	---------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

800

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

400000

**Investment required (unit currency – as specified in C0.4)**

300000

**Payback period**

&lt;1 year

**Estimated lifetime of the initiative**

16-20 years

**Comment**

REFCAT: Improved heat recovery in existing water scrubbers

**Initiative category & Initiative type**

Energy efficiency in production processes	Process optimization
---	----------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

700

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

300000

**Investment required (unit currency – as specified in C0.4)**

0

**Payback period**

<1 year

**Estimated lifetime of the initiative**

16-20 years

**Comment**

Reduction on energy consumption in dryers when running idle

**Initiative category & Initiative type**

Energy efficiency in production processes	Process optimization
---	----------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

100

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

70000

**Investment required (unit currency – as specified in C0.4)**

0

**Payback period**

<1 year

**Estimated lifetime of the initiative**

16-20 years

**Comment**

Reduction of dryer outlet temperature

**Initiative category & Initiative type**

Low-carbon energy consumption	Solar PV
-------------------------------	----------

**Estimated annual CO2e savings (metric tonnes CO2e)**

68705

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

526000

**Investment required (unit currency – as specified in C0.4)**

500000

**Payback period**

No payback

**Estimated lifetime of the initiative**

16-20 years

**Comment**

In 2021, we entered a partnership with Schneider Electric to help us manage our global energy procurement and negotiate power purchase agreements (PPAs). Schneider Electric provides companies such as Albemarle with energy and automation digital solutions for the efficient and sustainable day-to-day management of energy supply.

**Initiative category & Initiative type**

Energy efficiency in production processes	Process optimization
---	----------------------

**Estimated annual CO2e savings (metric tonnes CO2e)**

2003

**Scope(s) or Scope 3 category(ies) where emissions savings occur**

Scope 1

**Voluntary/Mandatory**

Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**

**Investment required (unit currency – as specified in C0.4)**

**Payback period**

Please select

**Estimated lifetime of the initiative**

Please select

**Comment**

Various energy efficiency projects in our lithium operations

C4.3c

**(C4.3c) What methods do you use to drive investment in emissions reduction activities?**

Method	Comment
Compliance with regulatory requirements/standards	Albemarle monitors current and emerging regulations in the areas where we operate to understand what emissions reductions are and will be required to maintain our license to operate.
Internal incentives/recognition programs	Our Objectives and Key Results (OKR) system is a way that executive management helps ensure cross-functional alignment on our most critical strategic initiatives, including sustainability. For 2023, one of our CEO's five objectives is to "Be a Leading Steward of our Planet". This objective includes key results that align with our external greenhouse gas (GHG) emission reduction and water reduction targets. OKRs are reviewed by executive leadership at least quarterly.

C4.5

**(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?**

No

C5. Emissions methodology

C5.1

**(C5.1) Is this your first year of reporting emissions data to CDP?**

No

C5.1a

**(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?**

**Row 1**

**Has there been a structural change?**

No

**Name of organization(s) acquired, divested from, or merged with**

<Not Applicable>

**Details of structural change(s), including completion dates**

<Not Applicable>

C5.1b



**(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?**

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	No	<Not Applicable>

**C5.2**

---

**(C5.2) Provide your base year and base year emissions.**

**Scope 1**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

606708

**Comment**

**Scope 2 (location-based)**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

348261

**Comment**

**Scope 2 (market-based)**

**Base year start**

January 1 2019

**Base year end**

December 31 2019

**Base year emissions (metric tons CO2e)**

358175

**Comment**

**Scope 3 category 1: Purchased goods and services**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

1037376

**Comment**

**Scope 3 category 2: Capital goods**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

35421

**Comment**

**Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

126602

**Comment**

**Scope 3 category 4: Upstream transportation and distribution**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

213244

**Comment**

**Scope 3 category 5: Waste generated in operations**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

15385

**Comment**

**Scope 3 category 6: Business travel**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

1796

**Comment**

**Scope 3 category 7: Employee commuting**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

3955

**Comment**

**Scope 3 category 8: Upstream leased assets**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 9: Downstream transportation and distribution**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

20721

**Comment**

**Scope 3 category 10: Processing of sold products**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

28306

**Comment**

**Scope 3 category 11: Use of sold products**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 12: End of life treatment of sold products**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

69588

**Comment**

**Scope 3 category 13: Downstream leased assets**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 14: Franchises**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3 category 15: Investments**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

122570

**Comment**

**Scope 3: Other (upstream)**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

0

**Comment**

**Scope 3: Other (downstream)**

**Base year start**

January 1 2021

**Base year end**

December 31 2021

**Base year emissions (metric tons CO2e)**

0

**Comment**

---

**(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**  
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

---

## C6. Emissions data

---

### C6.1

---

**(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?**

**Reporting year**

**Gross global Scope 1 emissions (metric tons CO2e)**  
617636

**Start date**  
January 1 2022

**End date**  
December 31 2022

**Comment**

**Past year 1**

**Gross global Scope 1 emissions (metric tons CO2e)**  
605125

**Start date**  
January 1 2021

**End date**  
December 31 2021

**Comment**

**Past year 2**

**Gross global Scope 1 emissions (metric tons CO2e)**  
584766

**Start date**  
January 1 2020

**End date**  
December 31 2020

**Comment**

**Past year 3**

**Gross global Scope 1 emissions (metric tons CO2e)**  
606708

**Start date**  
January 1 2019

**End date**  
December 31 2019

**Comment**

---

### C6.2

---

**(C6.2) Describe your organization's approach to reporting Scope 2 emissions.**

**Row 1**

**Scope 2, location-based**  
We are reporting a Scope 2, location-based figure

**Scope 2, market-based**  
We are reporting a Scope 2, market-based figure

**Comment**

Our calculation of Scope 2 emissions followed the GHG Protocol, incorporating both market-based and location-based approaches for the years 2021 and 2022. Conversely, we used market-based calculations alone for Scope 2 emissions in 2020 and 2019.

---

### C6.3

---

**(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?**

**Reporting year**

**Scope 2, location-based**  
334379

**Scope 2, market-based (if applicable)**  
291547

**Start date**  
January 1 2022

**End date**  
December 31 2022

**Comment**

**Past year 1**

**Scope 2, location-based**  
348261

**Scope 2, market-based (if applicable)**  
293880

**Start date**  
January 1 2021

**End date**  
December 31 2021

**Comment**

**Past year 2**

**Scope 2, location-based**

**Scope 2, market-based (if applicable)**  
350198

**Start date**  
January 1 2020

**End date**  
December 31 2020

**Comment**

**Past year 3**

**Scope 2, location-based**

**Scope 2, market-based (if applicable)**  
358175

**Start date**  
January 1 2019

**End date**  
December 31 2019

**Comment**

**C6.4**

---

**(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?**

No

**C6.5**

---

**(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.**

## Purchased goods and services

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

1181025

### Emissions calculation methodology

Average data method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Emissions from purchased goods are calculated using the average data method of the GHG protocol. This calculation includes the emission generated from the purchased raw materials for Lithium, Bromine and Catalysts production. Raw material data is collected at the location level based on weight and is verified at the corporate level. We assess the GWP-100 of each individual raw material by conducting modeling using the Gabi database or conducting literature research on LCA.

## Capital goods

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

54673

### Emissions calculation methodology

Average spend-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Emissions from capital goods are calculated using the average spend-based method of the GHG Protocol. Data on capital goods is collected at corporate level based on spend, with only machinery and construction being considered and labor-related investment being excluded. In 2022, the spending on machinery and construction is subject to a \$-based emission factor.

## Fuel-and-energy-related activities (not included in Scope 1 or 2)

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

125354

### Emissions calculation methodology

Average data method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

The four subcategories of the fuel and energy related activities were calculated based on the guidance of the GHG Protocol. The Well-to-Tank emissions of fossil fuels (subcategory A), the Well-to-Tank emissions of electricity (subcategory B) and the losses due to electricity T&D (subcategory C) were calculated using EPA WTT emissions factors on location level for category A and B and using IEA emission factors on country level for subcategory C.

## Upstream transportation and distribution

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

323657

### Emissions calculation methodology

Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

The total emissions from this category are estimated by considering the transport of raw materials/intermediates and downstream transport paid for by Albemarle. This estimation takes into account transport distance, weight, and mode of transport. DEFRA emission, which expresses CO2e emission per ton kilometer, were used to perform the calculation.

## Waste generated in operations

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

15190

### Emissions calculation methodology

Waste-type-specific method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Emissions resulting from waste generated during operations were calculated in accordance with GHG Protocol guidance, using the waste-type-specific method. This method categorizes waste based on its type (e.g., hazardous, non-hazardous waste, organic, inorganic) and end-of-life treatment (e.g., landfill, recycle, incineration, etc). An emission factor was assigned to each waste category and emissions were calculated for each location by multiplying the weight of waste by the corresponding emission factor per category.

## Business travel

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

3090

### Emissions calculation methodology

Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

### Please explain

The data collection for this category was performed by our partner, who collected the point-to-point distance of each individual flight taken by Albemarle employees. The emission for each flight was calculated by multiplying it with an emission factor from DEFRA, which is characteristic for the type of flight (long haul, domestic) and class.

## Employee commuting

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

4702

### Emissions calculation methodology

Average data method  
Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

The total emissions generated from employee commuting were estimated by taking into account the average commuting distance, frequency of commuting days per week, and types of transport mode (car, motorcycle, public transport, bike, walk) in each location. The calculation was performed by multiplying the total commuting distance per transport mode with the emission factor characteristic of that mode, which is provided by EPA emission factors.

## Upstream leased assets

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

The category was considered irrelevant as Albemarle does not possess any upstream leased assets above the materiality threshold.

## Downstream transportation and distribution

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

18208

### Emissions calculation methodology

Distance-based method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Downstream transportation and distribution (T&D) at Albemarle is defined as transportation and distribution that is paid for by the customers. To estimate the emission associated with the customer-pad T&D, the weight of each shipment was multiplied by the country-averaged transport distance (yielding total ton-kilometers), and then multiplied by the emission factor characteristic for the transport mode (obtained from DEFRA). The transport distance was approximated based on the country destination.

## Processing of sold products

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

34706

### Emissions calculation methodology

Average data method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

Emissions associated with processing of sold products are derived from the known composition of Albemarle products and the primary reaction taking place during their handling by customers. The stoichiometric fraction of GHG released from the sold product known to release GHG is used to estimate emission due to processing. Emission e.g., due to use of electricity by our customers to process the sold products is not taken into account.

## Use of sold products

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

As per GHG protocol guidance, Albemarle's products do not contribute to GHG emission during their use-phase, as they are typically mixed and processed before being used in consumer products [as would be the case with combustion of the product or the use of electricity in consumer electronics]. Additionally, Albemarle does not sell directly to end users, requiring at least two steps before the products are used.

## End of life treatment of sold products

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

74620

### Emissions calculation methodology

Waste-type-specific method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

### Please explain

This category is calculated using the approach related to the carbon content of the sold product, derived from the stoichiometric fraction (weight), and the end-of-life pathways of the sold products, derived from literature-based averages, were underpinned using the WBCSD scope-3 guidance document for chemical industry. The emission factors for end-of-life pathways were obtained from the Sphera database.

## Downstream leased assets

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

The category was considered irrelevant as Albemarle does not possess any upstream leased assets above the materiality threshold.



## Franchises

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

Albemarle currently has no franchises.

## Investments

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO2e)

158952

### Emissions calculation methodology

Investment-specific method

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

89

### Please explain

The investment-specific method of GHG Protocol was applied to evaluate the scope 1 and scope 2 emissions of our joint venture (JV) partners. As per the GHG Protocol, JVs with less than 20% ownership are not consolidated in scope-1 and scope 2 accounting and are categorized as such. This includes 5 JVs of Catalysts and 1 JV of Lithium. Total emissions were determined by multiplying the emission of each JV with Albemarle's equity ownership percentage.

## Other (upstream)

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

There are no other upstream GHG emissions.

## Other (downstream)

### Evaluation status

Not relevant, explanation provided

### Emissions in reporting year (metric tons CO2e)

<Not Applicable>

### Emissions calculation methodology

<Not Applicable>

### Percentage of emissions calculated using data obtained from suppliers or value chain partners

<Not Applicable>

### Please explain

There are no other downstream GHG emissions.

C6.5a

---

**(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.**

**Past year 1**

**Start date**

January 1 2021

**End date**

December 31 2021

**Scope 3: Purchased goods and services (metric tons CO2e)**

1037376

**Scope 3: Capital goods (metric tons CO2e)**

35421

**Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)**

126602

**Scope 3: Upstream transportation and distribution (metric tons CO2e)**

213244

**Scope 3: Waste generated in operations (metric tons CO2e)**

15385

**Scope 3: Business travel (metric tons CO2e)**

1796

**Scope 3: Employee commuting (metric tons CO2e)**

3955

**Scope 3: Upstream leased assets (metric tons CO2e)**

0

**Scope 3: Downstream transportation and distribution (metric tons CO2e)**

20721

**Scope 3: Processing of sold products (metric tons CO2e)**

28306

**Scope 3: Use of sold products (metric tons CO2e)**

0

**Scope 3: End of life treatment of sold products (metric tons CO2e)**

69588

**Scope 3: Downstream leased assets (metric tons CO2e)**

0

**Scope 3: Franchises (metric tons CO2e)**

0

**Scope 3: Investments (metric tons CO2e)**

122570

**Scope 3: Other (upstream) (metric tons CO2e)**

0

**Scope 3: Other (downstream) (metric tons CO2e)**

0

**Comment**

A Scope 3 assessment was first conducted in 2021. Certain categories, such as categories 8, 11, 13, and 14, are currently not applicable to the company. Detailed explanations can be found in C6.5.

**C6.7**

---

**(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?**

No

**C6.10**

---

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

**Intensity figure**

0.00012

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)**

909184

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

7320104000

**Scope 2 figure used**

Market-based

**% change from previous year**

56

**Direction of change**

Decreased

**Reason(s) for change**

Change in revenue

**Please explain**

In 2022, there was a 1% increase in scope 1 and 2 emissions and a 120% increase in revenue from the previous reporting year. As the increase in revenue far outsize the increase in emissions in 2022, the total intensity figure dropped significantly.

## C7. Emissions breakdowns

### C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

### C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	537064	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	39	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	2	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	2	IPCC Fifth Assessment Report (AR5 – 100 year)
Other, please specify (HCFCs)	11	IPCC Fifth Assessment Report (AR5 – 100 year)
Other, please specify (HXFCs)	67	IPCC Fifth Assessment Report (AR5 – 100 year)

### C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/area/region.

Country/area/region	Scope 1 emissions (metric tons CO2e)
Netherlands	56728
Germany	30796
Chile	23528
China	111463
United States of America	334955
Jordan	58812
Taiwan, China	373
Other, please specify (Offices and lease cars)	982

### C7.3

**(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.**

By facility

**C7.3b**

**(C7.3b) Break down your total gross global Scope 1 emissions by business facility.**

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Pasadena (USA)	77351	29.739965	-95.171374
Bayport (USA)	109933	29.643975	-95.064156
Amsterdam (NL)	56728	52.386726	4.933676
Safi (Jordan)	58812	31.143423	35.5275
Magnolia (USA)	131945	33.268155	-93.31297
Baton Rouge (USA)	937	30.493633	-91.17798
Twinsburg (USA)	157	41.29787	-81.46516
Chengdu (China)	18239	30.197476	103.75805
Kings Mountain (USA)	9953	35.216454	-81.350066
La Negra (Chile)	15658	-23.759434	-70.310831
New Johnsonville (USA)	493	35.997574	-87.978669
Salar de Atacama (Chile)	7801	-23.637171	-68.313382
Silver Peak (USA)	4186	37.751241	-117.638827
Taichung (Taiwan)	373	25.05956	121.54825
Xinyu (China)	89178	27.81	114.712
Qinzhou (China)	4046	21.973613	108.616333
Salmag (Chile)	69	-23.34	-69.79
Langelshiem (Germany)	30796	51.9318	10.323
Offices and lease cars (Global)	982		

**C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4**

**(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.**

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions, metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	617636	<Not Applicable>	Total scope 1 for Albemarle.
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	0	<Not Applicable>	At this time we are not able to break out Scope 1 emissions specific to our metals and mining activity.
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

**C7.5**

**(C7.5) Break down your total gross global Scope 2 emissions by country/area/region.**

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Netherlands	13449	9506
Germany	345	225
Chile	25180	25180
United States of America	165827	120552
China	79571	98632
Taiwan, China	2398	2398
Jordan	45540	32986
Other, please specify (Offices (global)) Albemarle office	2068	2068

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By facility

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Pasadena (USA)	17192	17192
Bayport (USA)	35496	35496
Amsterdam (Netherlands)	13449	9506
Safi (Jordan)	45540	32986
Magnolia (USA)	93199	46606
Baton Rouge (USA)	9130	8610
Chengdu (China)	8679	4324
Kings Mountain (USA)	4036	4036
La Negra (Chile)	25180	25180
Langelsheim (Germany)	345	225
New Johnsonville (USA)	1850	1335
Salar de Atacama (Chile)	0	0
Silver Peak (USA)	4625	7024
Taichung (Taiwan)	2398	2398
Xinyu (China)	64665	89603
Twinsburg (USA)	299	253
Qinzhou (China)	6227	4705
Salmag (Chile)	0	0
Offices (Global)	2068	2068

C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

Yes

C7.7a

(C7.7a) Break down your gross Scope 1 and Scope 2 emissions by subsidiary.

**Subsidiary name**

Lithium

**Primary activity**

Please select

**Select the unique identifier(s) you are able to provide for this subsidiary**

ISIN code – bond

**ISIN code – bond**

US0126531013

**ISIN code – equity**

<Not Applicable>

**CUSIP number**

<Not Applicable>

**Ticker symbol**

<Not Applicable>

**SEDOL code**

<Not Applicable>

**LEI number**

<Not Applicable>

**Other unique identifier**

<Not Applicable>

**Scope 1 emissions (metric tons CO2e)**

180792

**Scope 2, location-based emissions (metric tons CO2e)**

118006

**Scope 2, market-based emissions (metric tons CO2e)**

138830

**Comment**

---

**Subsidiary name**

Bromine

**Primary activity**

Please select

**Select the unique identifier(s) you are able to provide for this subsidiary**

ISIN code – bond

**ISIN code – bond**

US0126531013

**ISIN code – equity**

<Not Applicable>

**CUSIP number**

<Not Applicable>

**Ticker symbol**

<Not Applicable>

**SEDOL code**

<Not Applicable>

**LEI number**

<Not Applicable>

**Other unique identifier**

<Not Applicable>

**Scope 1 emissions (metric tons CO2e)**

191850

**Scope 2, location-based emissions (metric tons CO2e)**

148168

**Scope 2, market-based emissions (metric tons CO2e)**

88456

**Comment**

---

**Subsidiary name**

Catalysts

**Primary activity**

Please select

**Select the unique identifier(s) you are able to provide for this subsidiary**

ISIN code – bond

**ISIN code – bond**

US0126531013

**ISIN code – equity**

<Not Applicable>

**CUSIP number**

<Not Applicable>

**Ticker symbol**

<Not Applicable>

**SEDOL code**

<Not Applicable>

**LEI number**

<Not Applicable>

**Other unique identifier**

<Not Applicable>

**Scope 1 emissions (metric tons CO2e)**

244012

**Scope 2, location-based emissions (metric tons CO2e)**

66137

**Scope 2, market-based emissions (metric tons CO2e)**

62194

**Comment**

---

**Subsidiary name**

---

Other

**Primary activity**

Please select

**Select the unique identifier(s) you are able to provide for this subsidiary**

ISIN code – bond

**ISIN code – bond**

US0126531013

**ISIN code – equity**

<Not Applicable>

**CUSIP number**

<Not Applicable>

**Ticker symbol**

<Not Applicable>

**SEDOL code**

<Not Applicable>

**LEI number**

<Not Applicable>

**Other unique identifier**

<Not Applicable>

**Scope 1 emissions (metric tons CO2e)**

982

**Scope 2, location-based emissions (metric tons CO2e)**

2068

**Scope 2, market-based emissions (metric tons CO2e)**

2068

**Comment**

**C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7**

**(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.**

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	334379	291547	Total scope 2 for Albemarle.
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	0	0	At this time we are not able to break out Scope 2 emissions specific to our metals and mining activity.
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

**C-CH7.8**

**(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.**

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
Other (please specify) (Typical commodity and specialty chemicals used as raw materials for the manufacturing of our production, such as, NaOH, H2SO4, Chlorine, BPA, HCl etc.)	100	See C6.5 for explanation of calculation scope-3 / category 1.

**C-CH7.8a**

**(C-CH7.8a) Disclose sales of products that are greenhouse gases.**

	Sales, metric tons	Comment
Carbon dioxide (CO2)	0	
Methane (CH4)	0	
Nitrous oxide (N2O)	0	
Hydrofluorocarbons (HFC)	0	
Perfluorocarbons (PFC)	0	
Sulphur hexafluoride (SF6)	0	
Nitrogen trifluoride (NF3)	0	

**C7.9**

**(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?**

Decreased

**C7.9a**

**(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.**

	Change in emissions (metric tons CO2e)	Direction of change in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	2332	Decreased	0.3	The decrease in scope 2 emissions is attributed to additional green energy procurement and grid greening.
Other emissions reduction activities	5783	Decreased	0.6	Identified scope 1 emissions reduction activities as per C4.3.
Divestment		<Not Applicable>		
Acquisitions	8750	Increased	1	On October 25, 2022, Albemarle announced that its subsidiary, Albemarle Lithium UK Limited, has completed the acquisition of Guangxi Tianyuan New Energy Materials Co., Ltd. ("Tianyuan").
Mergers		<Not Applicable>		
Change in output	9544	Increased	1	The increase in output can be attributed to additional production in 2022 compared to 2021.
Change in methodology		<Not Applicable>		
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

**C7.9b**

**(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?**

Market-based

**C8. Energy**

**C8.1**

**(C8.1) What percentage of your total operational spend in the reporting year was on energy?**

More than 25% but less than or equal to 30%

**C8.2**



**(C8.2) Select which energy-related activities your organization has undertaken.**

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

**C8.2a**

**(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.**

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	3033881	3033881
Consumption of purchased or acquired electricity	<Not Applicable>	139300	691288	830589
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	0	0
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	139300	3725169	3864470

**C-CH8.2a**

**(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.**

**Consumption of fuel (excluding feedstocks)**

**Heating value**

HHV (higher heating value)

**MWh consumed from renewable sources inside chemical sector boundary**

0

**MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)**

3033881

**MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary**

0

**Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary**

3033881

**Consumption of purchased or acquired electricity**

**Heating value**

<Not Applicable>

**MWh consumed from renewable sources inside chemical sector boundary**

139300

**MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)**

691288

**MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary**

0

**Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary**

830589

**Consumption of purchased or acquired steam**

**Heating value**

<Not Applicable>

**MWh consumed from renewable sources inside chemical sector boundary**

0

**MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)**

0

**MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary**

0

**Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary**

0

**Consumption of self-generated non-fuel renewable energy**

**Heating value**

<Not Applicable>

**MWh consumed from renewable sources inside chemical sector boundary**

0

**MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)**

0

**MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary**

0

**Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary**

0

**Total energy consumption**

**Heating value**

<Not Applicable>

**MWh consumed from renewable sources inside chemical sector boundary**

139300

**MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)**

3725169

**MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary**

0

**Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary**

3864470

C-MM8.2a

**(C-MM8.2a) Report your organization's energy consumption totals (excluding feedstocks) for metals and mining production activities in MWh.**

	Heating value	Total MWh
Consumption of fuel (excluding feedstocks)	Unable to confirm heating value	0
Consumption of purchased or acquired electricity	<Not Applicable>	0
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0
Total energy consumption	<Not Applicable>	0

**C8.2b**

**(C8.2b) Select the applications of your organization's consumption of fuel.**

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

**C8.2c**

**(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.**

**Sustainable biomass**

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

**Other biomass**

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

**Other renewable fuels (e.g. renewable hydrogen)**

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

**Coal**

**Heating value**

Unable to confirm heating value

**Total fuel MWh consumed by the organization**

0

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

**Oil**

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

50844

**MWh fuel consumed for self-generation of electricity**

34655

**MWh fuel consumed for self-generation of heat**

16189

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

We have no split-up between heat and steam (arbitrarily all under heat).

**Gas**

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

2827250

**MWh fuel consumed for self-generation of electricity**

164299

**MWh fuel consumed for self-generation of heat**

2662951

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

We have no split-up between heat and steam (arbitrarily all under heat).

**Other non-renewable fuels (e.g. non-renewable hydrogen)**

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

22764

**MWh fuel consumed for self-generation of electricity**

15050

**MWh fuel consumed for self-generation of heat**

7714

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

We have no split-up between heat and steam (arbitrarily all under heat).

**Total fuel**

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

2900858

**MWh fuel consumed for self-generation of electricity**

214004

**MWh fuel consumed for self-generation of heat**

2686854

**MWh fuel consumed for self-generation of steam**

<Not Applicable>

**MWh fuel consumed for self-generation of cooling**

<Not Applicable>

**MWh fuel consumed for self- cogeneration or self-trigeneration**

<Not Applicable>

**Comment**

We have no split-up between heat and steam (arbitrarily all under heat).

**C8.2d**

**(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.**

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	38824	27539	0	0
Heat	2686854	2314360	0	0
Steam			0	0
Cooling				

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

**Electricity**

**Total gross generation inside chemicals sector boundary (MWh)**  
38824

**Generation that is consumed inside chemicals sector boundary (MWh)**  
27539

**Generation from renewable sources inside chemical sector boundary (MWh)**  
0

**Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)**  
0

**Heat**

**Total gross generation inside chemicals sector boundary (MWh)**  
2686854

**Generation that is consumed inside chemicals sector boundary (MWh)**  
2314360

**Generation from renewable sources inside chemical sector boundary (MWh)**  
0

**Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)**  
0

**Steam**

**Total gross generation inside chemicals sector boundary (MWh)**

**Generation that is consumed inside chemicals sector boundary (MWh)**

**Generation from renewable sources inside chemical sector boundary (MWh)**

**Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)**

**Cooling**

**Total gross generation inside chemicals sector boundary (MWh)**

**Generation that is consumed inside chemicals sector boundary (MWh)**

**Generation from renewable sources inside chemical sector boundary (MWh)**

**Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)**

C-MM8.2d

(C-MM8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed for metals and mining production activities.

	Total gross generation (MWh) inside metals and mining sector boundary	Generation that is consumed (MWh) inside metals and mining sector boundary
Electricity	0	0
Heat	0	0
Steam	0	0
Cooling	0	0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

C8.2g

(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

**Country/area**  
United States of America

**Consumption of purchased electricity (MWh)**  
472396

**Consumption of self-generated electricity (MWh)**

0

**Is this electricity consumption excluded from your RE100 commitment?**

<Not Applicable>

**Consumption of purchased heat, steam, and cooling (MWh)**

0

**Consumption of self-generated heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

472396

---

**Country/area**

Netherlands

**Consumption of purchased electricity (MWh)**

44412

**Consumption of self-generated electricity (MWh)**

0

**Is this electricity consumption excluded from your RE100 commitment?**

<Not Applicable>

**Consumption of purchased heat, steam, and cooling (MWh)**

0

**Consumption of self-generated heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

44412

---

**Country/area**

Germany

**Consumption of purchased electricity (MWh)**

1104

**Consumption of self-generated electricity (MWh)**

0

**Is this electricity consumption excluded from your RE100 commitment?**

<Not Applicable>

**Consumption of purchased heat, steam, and cooling (MWh)**

0

**Consumption of self-generated heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

1104

---

**Country/area**

Chile

**Consumption of purchased electricity (MWh)**

59976

**Consumption of self-generated electricity (MWh)**

0

**Is this electricity consumption excluded from your RE100 commitment?**

<Not Applicable>

**Consumption of purchased heat, steam, and cooling (MWh)**

0

**Consumption of self-generated heat, steam, and cooling (MWh)**

0

**Total non-fuel energy consumption (MWh) [Auto-calculated]**

59976

---

**Country/area**

China

**Consumption of purchased electricity (MWh)**

127006

**Consumption of self-generated electricity (MWh)**

0

**Is this electricity consumption excluded from your RE100 commitment?**

<Not Applicable>

---

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

127006

---

Country/area

Taiwan, China

Consumption of purchased electricity (MWh)

4374

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

4374

---

Country/area

Jordan

Consumption of purchased electricity (MWh)

116401

Consumption of self-generated electricity (MWh)

0

Is this electricity consumption excluded from your RE100 commitment?

<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)

0

Consumption of self-generated heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

116401

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### C-CH8.3

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(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?

No

### C9. Additional metrics

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#### C9.1

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(C9.1) Provide any additional climate-related metrics relevant to your business.

#### C-CH9.3a

---



**(C-CH9.3a) Provide details on your organization's chemical products.**

**Output product**

Specialty chemicals

**Production (metric tons)**

694723

**Capacity (metric tons)**

**Direct emissions intensity (metric tons CO2e per metric ton of product)**

1.3

**Electricity intensity (MWh per metric ton of product)**

1.2

**Steam intensity (MWh per metric ton of product)**

3.3

**Steam/ heat recovered (MWh per metric ton of product)**

0

**Comment**

Note that steam and heat are combined under "Steam intensity". Production number calculated using primary products.

---

**C-MM9.3a**

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**(C-MM9.3a) Provide details on the commodities relevant to the mining production activities of your organization.**

**Output product**

Other non-ferrous metal mining (Please specify) (Lithium)

**Capacity, metric tons**

0

**Production, metric tons**

0

**Production, copper-equivalent units (metric tons)**

0

**Scope 1 emissions**

0

**Scope 2 emissions**

0

**Scope 2 emissions approach**

Location-based

**Pricing methodology for copper-equivalent figure**

**Comment**

At this time we are not able to provide details on the commodities relevant to the mining production activities of Albemarle.

---

**C-MM9.3b**

---

**(C-MM9.3b) Provide details on the commodities relevant to the metals production activities of your organization.**

**Output product**

Other non-ferrous metals (Please specify) (Lithium)

**Capacity (metric tons)**

0

**Production (metric tons)**

0

**Annual production in copper-equivalent units (thousand tons)**

0

**Scope 1 emissions (metric tons CO2e)**

0

**Scope 2 emissions (metric tons CO2e)**

0

**Scope 2 emissions approach**

Location-based

**Pricing methodology for-copper equivalent figure**

**Comment**

At this time we are not able to provide details on the commodities relevant to the metals production activities of Albemarle.

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**(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?**

Investment in low-carbon R&D	Comment
Row 1 Yes	<p><b>Lithium:</b> In 2022, we acquired a site in Charlotte, N.C., that will become the future location of the Albemarle Technology Park (ATP). As part of our mine-to-market innovation strategy, we are investing over \$180 million in the ATP to establish a worldclass facility designed for novel materials research, advances in process development and acceleration of next-generation lithium products in partnership with strategic customers. Sustainability benefits from innovations can contribute to the reduction of energy and water use and enable lithium recovery at end-of-life through cost-effective recycling. One of the most critical environmental opportunities we have is to recover and reuse precious resources. To this end, our innovation team is working on chemistries that will enable us to recover lithium from end-of-life batteries and use this lithium as a feedstock in conversion facilities to produce battery-grade quality lithium. As part of our U.S. expansion plans, we are planning the construction of a mega-flex conversion facility in Richburg, South Carolina. Flex refers to the facility being designed to accommodate multiple feedstocks, including recycled lithium materials from existing batteries.</p> <p><b>Bromine:</b> In 2022, we introduced SAYTEX@ALERO®, our next-generation, large-molecule fire safety solution, to the market., ALERO® provides enhanced stability which supports excellent recyclability of flame-retardant plastics, adding to its sustainability profile. In 2022, we also introduced MercLok™, designed for the rapid stabilization of mercury found in a range of soils and industrial wastes. MercLok™ stabilizes mercury contamination from industrial use and can prevent mercury’s ability to spread by more than 99%.</p> <p><b>Catalysts:</b> Our ReNewFCC line, the latest suite of dedicated catalysts, is specifically designed to enable our customers to process more renewable feedstocks, such as oils obtained from waste and biomass streams, to help decrease GHG emissions and produce renewable fuels and chemicals.</p>

C-CH9.6a

**(C-CH9.6a) Provide details of your organization’s investments in low-carbon R&D for chemical production activities over the last three years.**

**Technology area**

Process step integration

**Stage of development in the reporting year**

Applied research and development

**Average % of total R&D investment over the last 3 years**

20

**R&D investment figure in the reporting year (unit currency as selected in C0.4) (optional)**

**Average % of total R&D investment planned over the next 5 years**

20

**Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan**

**Lithium:** In 2022, we acquired a site in Charlotte, N.C., that will become the future location of the Albemarle Technology Park (ATP). As part of our mine-to-market innovation strategy, we are investing over \$180 million in the ATP to establish a worldclass facility designed for novel materials research, advances in process development and acceleration of next-generation lithium products in partnership with strategic customers. Sustainability benefits from innovations can contribute to the reduction of energy and water use and enable lithium recovery at end-of-life through cost-effective recycling. One of the most critical environmental opportunities we have is to recover and reuse precious resources. To this end, our innovation team is working on chemistries that will enable us to recover lithium from end-of-life batteries and use this lithium as a feedstock in conversion facilities to produce battery-grade quality lithium. As part of our U.S. expansion plans, we are planning the construction of a mega-flex conversion facility in Richburg, South Carolina. Flex refers to the facility being designed to accommodate multiple feedstocks, including recycled lithium materials from existing batteries.

**Bromine:** In 2022, we introduced SAYTEX@ALERO®, our next-generation, large-molecule fire safety solution, to the market., ALERO® provides enhanced stability which supports excellent recyclability of flame-retardant plastics, adding to its sustainability profile. In 2022, we also introduced MercLok™, designed for the rapid stabilization of mercury found in a range of soils and industrial wastes. MercLok™ stabilizes mercury contamination from industrial use and can prevent mercury’s ability to spread by more than 99%.

**Catalysts:** Our ReNewFCC line, the latest suite of dedicated catalysts, is specifically designed to enable our customers to process more renewable feedstocks, such as oils obtained from waste and biomass streams, to help decrease GHG emissions and produce renewable fuels and chemicals.

C-MM9.6a

**(C-MM9.6a) Provide details of your organization's investments in low-carbon R&D for metals and mining production activities over the last three years.**

**Technology area**

Unable to disaggregate by technology area

**Stage of development in the reporting year**

<Not Applicable>

**Average % of total R&D investment over the last 3 years**

0

**R&D investment figure in the reporting year (unit currency as selected in C0.4) (optional)**

0

**Average % of total R&D investment planned over the next 5 years**

0

**Explain how your R&D investment in this technology area is aligned with your climate commitments and/or climate transition plan**

At this time we are not able to provide details of our investments in low-carbon R&D for metals and mining production activities.

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**C10. Verification**

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**C10.1**

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**(C10.1) Indicate the verification/assurance status that applies to your reported emissions.**

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	No third-party verification or assurance

**C10.1a**

---

**(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.**

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Limited assurance

**Attach the statement**

Albemarle 2022 Sustainability Report.pdf  
Albemarle Assurance Report 2023.06.01.pdf

**Page/ section reference**

Page 1 in the assurance report, pages 140-145 in the sustainability report

**Relevant standard**

Attestation standards established by AICPA (AT105)

**Proportion of reported emissions verified (%)**

100

---

**C10.1b**

---

**(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.**

**Scope 2 approach**

Scope 2 market-based

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Limited assurance

**Attach the statement**

Albemarle 2022 Sustainability Report.pdf  
Albemarle Assurance Report 2023.06.01.pdf

**Page/ section reference**

page 1 in the assurance report, pages 140-146 in the sustainability report

**Relevant standard**

Attestation standards established by AICPA (AT105)

**Proportion of reported emissions verified (%)**

100

---

**Scope 2 approach**

Scope 2 location-based

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Limited assurance

**Attach the statement**

Albemarle 2022 Sustainability Report.pdf  
Albemarle Assurance Report 2023.06.01.pdf

**Page/ section reference**

page 1 in the assurance report, pages 140-146 in the sustainability report

**Relevant standard**

Attestation standards established by AICPA (AT105)

**Proportion of reported emissions verified (%)**

100

---

**C10.2**

**(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?**

No, but we are actively considering verifying within the next two years

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**C11. Carbon pricing**

---

**C11.1**

**(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?**

Yes

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**C11.1a**

**(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.**

Chile carbon tax  
EU ETS

---

**C11.1b**

**(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.**

**EU ETS**

**% of Scope 1 emissions covered by the ETS**

100

**% of Scope 2 emissions covered by the ETS**

0

**Period start date**

January 1 2022

**Period end date**

December 31 2022

**Allowances allocated**

**Allowances purchased**

**Verified Scope 1 emissions in metric tons CO<sub>2</sub>e**

56728

**Verified Scope 2 emissions in metric tons CO<sub>2</sub>e**

9616

**Details of ownership**

Facilities we own and operate

**Comment**

Amsterdam location

**C11.1c**

---

**(C11.1c) Complete the following table for each of the tax systems you are regulated by.**

**Chile carbon tax**

**Period start date**

January 1 2022

**Period end date**

December 31 2022

**% of total Scope 1 emissions covered by tax**

100

**Total cost of tax paid**

**Comment**

**C11.1d**

---

**(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?**

Albermarle's internal team oversees participation in cap-and-trade and tax schemes, ensuring accurate measurement and verification of regulated emissions. Our Government Affairs team monitors global political landscapes to track emerging regulations on emissions trading schemes (ETS) and carbon taxes, assessing potential business implications. We make economically reasonable capital investments in scope 1 reductions and purchase allowances to offset remaining emissions.

On the other side of our strategy, incorporating our carbon pricing project into our net-zero roadmap is a key component of our strategy. This decision will be informed by the findings of our TCFD risk assessment on carbon pricing. Furthermore, establishing a carbon price is an internal objective we have set as part of our OKR framework.

**C11.2**

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**(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?**

No

**C11.3**

---

**(C11.3) Does your organization use an internal price on carbon?**

No, but we anticipate doing so in the next two years

## C12. Engagement

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### C12.1

---

#### (C12.1) Do you engage with your value chain on climate-related issues?

- Yes, our suppliers
- Yes, our customers/clients
- Yes, other partners in the value chain

### C12.1a

---

#### (C12.1a) Provide details of your climate-related supplier engagement strategy.

##### Type of engagement

Information collection (understanding supplier behavior)

##### Details of engagement

Other, please specify (Collect carbon footprints of the major raw materials and general sustainability performance of major suppliers)

##### % of suppliers by number

1

##### % total procurement spend (direct and indirect)

2

##### % of supplier-related Scope 3 emissions as reported in C6.5

##### Rationale for the coverage of your engagement

We integrated LCA requests into our procurement processes to assess suppliers' environmental impact. In 2022, we evaluated the carbon footprint of natural soda ash suppliers, a crucial ingredient in lithium carbonate production, using questionnaires to collect energy-related and mining-associated GHG emissions data. This carbon footprint information guided vendor selection and served as primary data for our overall scope 3 assessment and LCA of lithium carbonate products. Our goal is to gather primary carbon footprint data for key raw materials in 2023 and 2024.

##### Impact of engagement, including measures of success

Carbon footprints and other sustainability performance is part of our vendor selection and a decision criterion in procurement.

##### Comment

---

### C12.1b

---

#### (C12.1b) Give details of your climate-related engagement strategy with your customers.

##### Type of engagement & Details of engagement

Education/information sharing	Run an engagement campaign to educate customers about your climate change performance and strategy
-------------------------------	--

##### % of customers by number

50

##### % of customer - related Scope 3 emissions as reported in C6.5

4.6

##### Please explain the rationale for selecting this group of customers and scope of engagement

4.6% of the scope-3 emissions are downstream customer related (category 9-12). Through our ongoing "Voice of the Customer" survey, we actively engage with our customers. The survey consistently highlights their interest in understanding the environmental footprint of our products, specifically their life cycle assessments (LCAs). As a result, we conduct information-sharing initiatives to educate our customers about the potential of our products in assisting them with reducing GHG emissions.

##### Impact of engagement, including measures of success

By fostering engagement, we gain a deeper understanding of the environmental footprint of our products, sparking meaningful discussions on supply chain reductions. These discussions align with customer expectations and ambitions, driving us towards more sustainable practices.

---

### C12.1d

---

**(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.**

Recognizing the role that our customers play in deploying sustainable end-solutions, we are committed to look beyond the transactional aspect of selling product. We emphasize strategic partnerships and joint developments. We do this by directly involving our customers in our R&D processes, and we obtain regular feedback on how we can deliver greater value to our customers and anticipate their future needs. This helps us accelerate the development of differentiated solutions that give our customers distinct products in their respective markets.

At Albemarle we have focused on the customer experience by enhancing communications, transparency and accountability in line with our corporate values. We seek feedback from our customers through our Voice of the Customer Annual Relationship Survey to better evaluate our performance and confirm that our strategic priorities are aligned with the needs of our customers. We involve our functional teams to analyze the survey data and set strategic goals for better serving our customers. Through the Voice of Customer Relationship Survey, we have identified common themes where we can improve, as well as distinct focus areas based on the markets and product portfolios of our customers.

Many of our customers have asked us to provide them with LCAs for our products in order that they may better understand the sustainability attributes of their supply chain. As noted in the Life Cycle Assessments section of this report, we are working on expanding our work on LCAs, which will assist us in responding to our customers' needs. Additionally, we dedicated our time to meeting face-to-face with many of our most strategic customers in 2022. Meeting with them gives us the opportunity to share not only the results from our Voice of the Customer survey, but also our values, our approach to sustainability and our future strategic priorities as they relate to our entire portfolio.

**C12.2**

---

**(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?**

No, but we plan to introduce climate-related requirements within the next two years

**C12.3**

---

**(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?**

**Row 1**

**External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate**

Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

**Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?**

Yes

**Attach commitment or position statement(s)**

Albemarle 2022 Sustainability Report.pdf

**Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan**

Remaining transparent and holding ourselves accountable are critical to our success. Our senior executive leadership reviews progress on our climate strategy on an ongoing basis. Our board of directors reviews progress on our climate strategy on an ongoing basis:

- The Health, Safety, and Environmental (HSE) committee reviews progress on climate strategy and targets at least annually
- The Audit & Finance committee reviews enterprise risk management, including climate, at least annually.

We publicly report progress on our climate strategy and targets at least annually, in our annual Sustainability Report. We currently disclose scope 1, 2 and 3 in our annual sustainability report aligned with CDP in 2022 and are disclosing under TCFD in 2022.

**Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate**

<Not Applicable>

**Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate**

<Not Applicable>

**C12.3b**

---

**(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.**

**Trade association**

American Chemistry Council

**Is your organization's position on climate change policy consistent with theirs?**

Consistent

**Has your organization attempted to influence their position in the reporting year?**

No, we did not attempt to influence their position

**Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position**

The American Chemistry Council is taking action to address climate change. They are exploring, developing, and deploying new technologies to reduce emissions, including carbon capture, utilization and storage (CCUS); emission hydrogen, steam, and electricity; the use of biomaterials and circular feedstocks instead of virgin materials; cracker electrification; and industrial energy efficiency programs, etc.

The ACC has called on congress to:

- Increase government investment and scientific resources to develop and deploy low emissions technologies in the manufacturing sector
- Adopt transparent, predictable, technology- and revenue-neutral, market-based, economy-wide carbon price signals
- Encourage adoption of emissions-avoiding solutions and technologies throughout the economy to achieve significant emissions savings.

**Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)**

**Describe the aim of your organization's funding**

<Not Applicable>

**Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

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## C12.4

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**(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

**Publication**

In mainstream reports

**Status**

Complete

**Attach the document**

Albemarle Form 10k.pdf

**Page/Section reference**

Page 8, 15, 23

**Content elements**

Governance  
Strategy  
Risks & opportunities  
Emission targets

**Comment**

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**Publication**

In voluntary communications

**Status**

Complete

**Attach the document**

Albemarle 2022 Sustainability Report.pdf

**Page/Section reference**

Sustainability report 2022

**Content elements**

Governance  
Strategy  
Risks & opportunities  
Emissions figures  
Emission targets

**Comment**

The 2022 Sustainability Report provides overview of the climate strategy, targets, actual emissions, assurance and governance around processes.

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## C12.5

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**(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.**

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	Task Force on Climate-related Financial Disclosures (TCFD) UN Global Compact	<p>Albemarle has been a member of the UNGC since 2021. Our sustainability report demonstrates Albemarle's commitment to the principles of the UNGC. In 2022, Albemarle joined the UN Global Compact CEO water mandate, a global initiative in partnership with the Pacific Institute, which mobilizes business leaders to advance water stewardship practices. Albemarle's endorsement of the Mandate commits us to action and continuous improvement over time across six key areas of focus in water management and to report annually on progress through our UN Global Compact communication. The six core areas for continuous improvement of water stewardship include direct operations, supply chain and watershed management, collective action, public policy, community engagement and transparency. Through the platform, we can identify and manage business risks, create efficiency in our water use, realize cost savings through water use efficiency and honor our sustainability commitments.</p> <p>In 2022, we began to report using the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations to provide our investors and other stakeholders with more comprehensive information about the impacts of climate change on our business.</p>

**C15. Biodiversity**

**C15.1**

**(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?**

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	Yes, executive management-level responsibility	Oversight for biodiversity regulated at business / operational / regulatory affairs level. No explicit Board-level responsibility at this moment.	<Not Applicable>

**C15.2**

**(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?**

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	No, but we plan to do so within the next 2 years	<Not Applicable>	<Not Applicable>

**C15.3**

**(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?**

**Impacts on biodiversity**

**Indicate whether your organization undertakes this type of assessment**

Yes

**Value chain stage(s) covered**

Direct operations

**Portfolio activity**

<Not Applicable>

**Tools and methods to assess impacts and/or dependencies on biodiversity**

Other, please specify (Responsible Mining Assurance (IRMA))

**Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)**

Initiative for Responsible Mining Assurance (IRMA) is a comprehensive framework that aims to address various environmental, social, and governance aspects of mining operations. Biodiversity is one of the key considerations within the IRMA framework.

Albemarle's Salar mine site completed an IRMA self-assessment in 2021 and a third-party audit in 2022. We continue to work on completing corrective actions in 2023. The Talison Greenbushes mine site began the IRMA self-assessment process in 2021 and is still working to complete it. We are working on closing gaps and hope to complete the self-assessment in 2023 and begin the third party audit. The MARBL Wodgina mine site began the IRMA self-assessment process in 2021 and is still working to complete it. We are working on closing gaps and hope to complete the self-assessment in 2023. Albemarle's Kings Mountain mine site intends to complete a gap assessment in 2024 against the IRMA mine site ready standard in preparation for mine site restart in 2027. Please look at the report draft for more information on IRMA.

**Dependencies on biodiversity**

**Indicate whether your organization undertakes this type of assessment**

**Value chain stage(s) covered**

<Not Applicable>

**Portfolio activity**

<Not Applicable>

**Tools and methods to assess impacts and/or dependencies on biodiversity**

<Not Applicable>

**Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)**

<Not Applicable>

C15.4

**(C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year?**

C15.5

**(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?**

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management Species management

C15.6

**(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?**

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No, we do not use indicators, but plan to within the next two years	Please select

C15.7

**(C15.7) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Governance Impacts on biodiversity	Pages 59 and 60 in the 2022 sustainability report Albemarle 2022 Sustainability Report.pdf

C16. Signoff

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C-FI

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(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C16.1

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(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	ESG Controller	Other, please specify (ESG Controller)

SC. Supply chain module

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SC0.0

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(SC0.0) If you would like to do so, please provide a separate introduction to this module.

SC0.1

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(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	7320104000

SC1.1

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(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

**Requesting member**

ARKEMA

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

6455

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

5743

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Baker Hughes Company

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

507

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

2382

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Bayer AG

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

135

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

79

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary

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products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Corning Incorporated

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

1939

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

24546

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Ecolab Inc.

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

4863

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

4813

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Givaudan SA

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

2.31

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

1

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

International Flavors & Fragrances Inc.

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

0.63

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

0.3

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Johnson & Johnson

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

120

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

52

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

KBR Inc

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Catalysts

**Emissions in metric tonnes of CO2e**

1209

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

1014

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of catalyst products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

OMV AG

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

&lt;Not Applicable&gt;

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Catalysts

**Emissions in metric tonnes of CO2e**

393

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

245

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of catalyst products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

SABIC

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

&lt;Not Applicable&gt;

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

3488

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

17023

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Schlumberger Limited

**Scope of emissions**

Scope 1



**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

3553

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

16709

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Topsoe A/S

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

557

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

2620

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

ARKEMA

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

<Not Applicable>

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

625

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

5743

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

ARKEMA

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

47

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

5743

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

ARKEMA

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

350

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

5743

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Baker Hughes Company

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

284

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

2382

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Bayer AG

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

32

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

79

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Corning Incorporated

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

3419

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

24546

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Ecolab Inc.

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Please select

**Scope 3 category(ies)**

<Not Applicable>

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

1718

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

4813

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Givaudan SA

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

0.02

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

1

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

Johnson &amp; Johnson

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Lithium

**Emissions in metric tonnes of CO2e**

0.87

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

52

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of lithium products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

KBR Inc

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Catalysts

**Emissions in metric tonnes of CO2e**

390

**Uncertainty (±%)**

25

**Major sources of emissions**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of catalyst products sold to the customer. Any products in solution are calculated on an active basis.

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

1014

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of catalyst products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

OMV AG

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Catalysts

**Emissions in metric tonnes of CO2e**

67

**Uncertainty (±%)**

25

**Major sources of emissions**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of catalyst products sold to the customer. Any products in solution are calculated on an active basis.

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

244

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of catalyst products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

SABIC

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

1956

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

17023

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

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**Requesting member**

SABIC

**Scope of emissions**

Scope 1

**Scope 2 accounting method**

&lt;Not Applicable&gt;

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Catalysts

**Emissions in metric tonnes of CO2e**

1338

**Uncertainty (±%)**

25

**Major sources of emissions**

Energy

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

17023

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of catalyst products sold to the customer. Any products in solution are calculated on an active basis.

**Requesting member**

SABIC

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Catalysts

**Emissions in metric tonnes of CO2e**

297

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

17023

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of catalyst products sold to the customer. Any products in solution are calculated on an active basis.

**Requesting member**

Schlumberger Limited

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Please select

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

1993

**Uncertainty (±%)**

25



**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

16709

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

**Requesting member**

Topsoe A/S

**Scope of emissions**

Scope 2

**Scope 2 accounting method**

Location-based

**Scope 3 category(ies)**

&lt;Not Applicable&gt;

**Allocation level**

Business unit (subsidiary company)

**Allocation level detail**

Bromine

**Emissions in metric tonnes of CO2e**

312

**Uncertainty (±%)**

25

**Major sources of emissions**

Electricity

**Verified**

Yes

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**

2620

**Unit for market value or quantity of goods/services supplied**

Metric tons

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**

GHG emissions were calculated on a gate to gate basis and include scope 1 and 2 only. Average location emission and water intensities were used, based on primary products and co-products. Footprints are not at a product level. GHG emissions are calculated using total quantity of bromine products sold to the customer. Any products in solution are calculated on an active basis.

## SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

## SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	
Other, please specify (Life cycle assessment)	We currently base our emissions on scope-1 and scope-2 emissions only. Ideally, we would have LCA's for all products in all production facilities.

## SC1.4

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**(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?**

Yes

SC1.4a

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**(SC1.4a) Describe how you plan to develop your capabilities.**

We will develop footprints for material groups (sub-plants within locations) and we have started a program to develop product level footprints, including life cycle assessments (LCAs).

SC2.1

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**(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.**

SC2.2

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**(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?**

No

SC4.1

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**(SC4.1) Are you providing product level data for your organization's goods or services?**

No, I am not providing data

Submit your response

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**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

**Please confirm below**

I have read and accept the applicable Terms