

Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

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

Albemarle Corporation (NYSE: ALB), headquartered in Charlotte, N.C., is a global specialty chemicals company with leading positions in lithium, bromine and refining catalysts. We think beyond business-as-usual to power the potential of companies in many of the world's largest and most critical industries, such as energy, electronics, and transportation. We actively pursue a sustainable approach to managing our diverse global footprint of world-class resources. In conjunction with our highly experienced and talented global teams, our deep-seated values, and our collaborative customer relationships, we create value-added and performance-based solutions that enable a safer and more sustainable future.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Reporting year	January 1, 2020	December 31, 2020	No

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

- Australia
- Chile
- China
- Germany
- Japan
- Jordan
- Netherlands
- United States of America

C0.4

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

USD

C1. Governance

C1.1

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

Yes

C1.2

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

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Sustainability committee ☞ ¹	Managing climate-related risks and opportunities	Quarterly
Chief Financial Officer (CFO)	Assessing climate-related risks and opportunities	Annually

☞¹As of 8/3/2021: Sustainability Steering Team includes the Chief Administrative Officer and General Counsel; President, Catalysts; VP HSSE & Operational Excellence; VP, IR & Sustainability; and Chief Operating Officers (Bromine and Lithium)

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	No, and we do not plan to introduce them in the next two years	Our Annual Incentive Program (AIP) - designed to provide incentives to achieve and rewards for achieving Albemarle's annual goals and objectives—includes a Stewardship metric. Under the Stewardship metric are performance objectives related to health, safety, and environmental (HSE) performance, such as occupational safety, process safety, and environmental responsibility. The Executive Compensation Committee of the Board determines performance goals under the AIP annually to ensure our executive officers execute on short-term financial and strategic initiatives that drive our business strategy and long-term shareholder value. We are currently evaluating options to include additional sustainability-related incentives including, potentially climate-related incentives.

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

C2.3

(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 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

Extreme weather has impacted our operations multiple times in the past few years: hurricanes and flooding events in the US Gulf Coast area impacted production of our Houston based plants and more than average rainfall in Chile (Salar de Atacama) impacted the production of Lithium containing brine. In 2021 our operations in the USGC and Arkansas were affected by a freeze. In all cases this leads to additional (logistic / repair) costs and sometimes to temporary loss of production capacity and revenue. We expect such events to continue to take place in the future.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost of response to risk

Description of response and explanation of cost calculation

Comment

C2.4

(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

(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

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Albemarle produces and markets Lithium products. More than 60% of the products are used in energy storage (batteries). The demand for energy storage (and hence Lithium) is driven by the energy transition in general and the growing demand for electric vehicles (EV) in particular.

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)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

We refer to the guidance and outlook at the investor section of our website www.albemarle.com

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Albemarle is heavily investing in new Lithium production capacity to serve the growing demand of customers [cathode manufacturers, battery manufacturers and OEM's]. For estimates of Capex we refer to the guidance and outlook at the investor section of our website www.albemarle.com

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Albemarle produces catalysts for the production of renewable and clean transportation fuels. Albemarle produces catalysts for the production of renewable diesel from vegetable oil waste streams (NexBTL). We also offer catalyst (solutions) enabling our customers to produce modern, clean transportation fuels (more miles driven per unit of fuel) and lowering the GHG-emissions during the production in the refinery (lower fuel consumption due to lower operating temperature through the use of catalysts).

Time horizon

Long-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

For financial estimates we refer to the investor section on our website www.albemarle.com

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C4. Targets and performance

C4.1

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

No target

C4.1c

(C4.1c) Explain why you did not have an emissions target, and forecast how your emissions will change over the next five years.

	Primary reason	Five-year forecast	Please explain
Row 1	We are planning to introduce a target in the next two years	Lithium related emissions are expected to go up in next 5 years due to capacity expansions with announced projects in Chile and Western Australia to meet Lithium demand of customers. The Lithium related emissions are affected by the production mix - rock-based Lithium	<p>The company has published its climate strategy (https://www.albemarle.com/storage/wysiwyg/albemarle_climate_policy_61.pdf#_ga=2.18106233) and 2030 interim goals.</p> <p>The intensity of emissions from Lithium operations will stay constant (while growing fast) and the WB2C line of the Paris Agreement.</p>

		<p>has a higher carbon footprint than brine-based Lithium. Catalysts and Bromine emissions are expected to go down in next 5 years - roughly in line with the 2 degrees C line of the Paris Agreement (Science Based Targets).</p>	
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C4.2

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

No other climate-related targets

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

C4.3b

(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)

17,000

Scope(s)

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

Estimated lifetime of the initiative

Comment

The estimated savings comprise both scope-1 and scope-2. The reported number is an estimate because 2020 was an odd year compared to 2019 (pandemic). The number is based upon capacity corrected year-on-year changes in our locations. For example: In our lithium operations in China we have worked over the past year to optimize our high-energy burner kilns to reduce energy consumption and costs. We also challenge ourselves to look for more energy efficient kiln systems across our lithium conversion operations.

In Amsterdam, we implemented a new boiler house after thorough analysis of our energy consumption and GHG emissions at this Catalysts site.

C5. Emissions methodology

C5.2

(C5.2) 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)

585,000

Comment

Scope-1 emissions comprise (according to the GHG protocol) on-site combustion, release of GHG due to chemical reactions (such as the use of solid carbonate containing raw materials), fugitives and contain joint ventures on a pro-rated basis when financially consolidated.

C6.2

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

Row 1

Scope 2, location-based

We are not reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

We follow the GHG Protocol. For locations with electricity supplier emission factors (the majority) we use that information. For a few locations we apply the (typical) regional grid mix.

C6.3

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

Reporting year

Scope 2, market-based (if applicable)

350,000

Comment

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, not yet calculated

Please explain

Purchased Goods and services are an significant part of our Scope-3 GHG emission data and important for our own performance improvement plans, and improvements in the entire value chain. We are setting up internal processes for future reporting.

Capital goods

Evaluation status

Not evaluated

Please explain

Will be evaluated in the future

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

Evaluation status

Not evaluated

Please explain

We are setting up internal processes for future reporting.

Upstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Please explain

We recognize that this Scope-3 GHG item is important for our own performance improvement plans, and improvements in the entire value chain. We are setting up internal processes for future reporting.

Waste generated in operations

Evaluation status

Relevant, not yet calculated

Please explain

This Scope-3 GHG item is important for our own performance improvement plans, We are setting up internal processes for future reporting.

Business travel

Evaluation status

Relevant, not yet calculated

Please explain

This Scope-3 GHG item is relevant but not quantified yet - We are setting up internal processes for future reporting.

Employee commuting

Evaluation status

Relevant, not yet calculated

Please explain

This Scope-3 GHG item is relevant but not quantified yet - We are setting up internal processes for future reporting.

Upstream leased assets

Evaluation status

Not evaluated

Please explain

We have not fully evaluated but unlikely to be relevant

Downstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Please explain

This Scope-3 GHG item is important for our own performance improvement plans, and improvements in the entire value chain. We are setting up internal processes for future reporting.

Processing of sold products

Evaluation status

Not evaluated

Please explain

Potentially relevant but not evaluated- our customers and suppliers need this information to assess their supply chain GHG performance and we are setting up internal processes for future reporting.

Use of sold products

Evaluation status

Relevant, not yet calculated

Please explain

We recognize that this Scope-3 GHG item is important for our own performance improvement plans and the impact (positive / negative) of our products in the use-phase. Our customers and suppliers need this information to assess their supply chain GHG performance and we are setting up internal processes for future reporting.

End of life treatment of sold products

Evaluation status

Relevant, not yet calculated

Please explain

We recognize that this Scope-3 GHG item is important for our own performance improvement plans. We are setting up internal processes for future reporting.

Downstream leased assets

Evaluation status

Not evaluated

Please explain

Unlikely to be relevant but not fully evaluated

Franchises

Evaluation status

Not evaluated

Please explain

Unlikely to be relevant but not fully evaluated

Investments

Evaluation status

Not evaluated

Please explain

Not yet evaluated

Other (upstream)

Evaluation status

Please explain

Other (downstream)

Evaluation status

Please explain

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

1.28

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

935,000

Metric denominator

metric ton of product

Metric denominator: Unit total

729,000

Scope 2 figure used

Market-based

% change from previous year

1.7

Direction of change

Increased

Reason for change

While overall production decreased in 2020 versus 2019 (due to a variety of reasons but certainly due to the pandemic) and measures were taken to decrease emissions, the absolute emissions decreased less than the production decrease (-3.1% vs -4.7%). This is primarily due to the size of operations in which fixed energy components do not always scale with (downward) production trends.

C7. Emissions breakdowns

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?

This is our first year of reporting, so we cannot compare to last year

C8. Energy

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	No
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)	Unable to confirm heating value	0	2,928,206	2,928,206
Consumption of purchased or acquired electricity		68,009	797,027	797,027
Consumption of self-generated non-fuel renewable energy				0
Total energy consumption		68,009	3,725,233	3,725,233

C12. Engagement

C12.1

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

Yes, our customers

C15. Signoff

C-FI

(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.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	SCOTT TOZIER Executive Vice President & Chief Financial Officer	Chief Financial Officer (CFO)