



LyondellBasell Industries N.V.

2024 CDP Corporate Questionnaire

Important: this export excludes unanswered questions

This document is an export of your organization's CDP questionnaire response. It contains all data points for questions that are answered or in progress. There may be questions or data points that you have been requested to provide, which are missing from this document because they are currently unanswered. Please note that it is your responsibility to verify that your questionnaire response is complete prior to submission. CDP will not be liable for any failure to do so.

[Terms of disclosure for corporate questionnaire 2024 - CDP](#)

Extracted from CDP platform on 10/22/2024.

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C1. Introduction

(1.3) Provide an overview and introduction to your organization.

(1.3.2) Organization type

Select from:

Publicly traded organization

(1.3.3) Description of organization

We are LyondellBasell – a leader in the global chemical industry creating solutions for everyday sustainable living. Through advanced technology and focused investments, we are enabling a circular and low carbon economy. Across all we do, we aim to unlock value for our customers, investors and society. As one of the world's largest producers of polymers and a leader in polyolefin technologies, we develop, manufacture and market high-quality and innovative products for applications ranging from sustainable transportation and food safety to clean water and quality healthcare. Our sustainability approach is structured around three global challenges: Ending plastic waste, taking climate action and supporting a thriving society. This approach shapes how we manage our business and execute strategic objectives. We use sustainability frameworks and best practice to inform our sustainability approach. With a workforce of approximately 20,300 employees, we sell our products in over 100 countries. We are the world's largest producer of oxyfuels and the leading producer of polyethylene (PE) and polypropylene (PP) in Europe. We manage our operations through six operating segments, namely Olefins and Polyolefins-Americas (O&P-Americas), Olefins and Polyolefins-Europe, Asia, International (O&P-EAI), Intermediates and Derivatives (I&D), Advanced Polymer Solutions (APS), Technology and Refining. Our refining business consists of our Houston refinery, which processes crude oil into refined products such as gasoline and distillates. We plan to cease our refining operations at the Houston refinery no later than the end of first quarter 2025. We are committed to reducing GHG emissions from our global operations and value chain, and to delivering solutions which advance our customers' climate ambitions and support society's transition to a low carbon world. We believe a commitment to net zero scope 1 and scope 2 GHG emissions by 2050 and a credible pathway to 2030 for scopes 1, 2, and 3 are critical to the long-term success of LYB. Our goal is to reduce our scope 1 and 2 emissions by 42% and scope 3 emissions by 30% by 2030, relative to a 2020 baseline. As part of our scope 1 and 2 commitment, we aim to procure a minimum of 50% of our procured electricity from renewable sources by 2030, based on 2020 levels. In 2022, we committed to having our 2030 targets validated as science-based through a letter of commitment submitted to the Science Based Target initiative (SBTi). Our 2030 targets were developed to align with SBTi target requirements, including ambition levels and scope of coverage. While our initial commitment was accepted by the SBTi, the validation of our targets was subsequently paused due to a global pause on companies with oil-and gas-related activities. We remain committed to aligning our climate targets with the latest climate science and will continue to work with SBTi on a path toward validation. In 2023, we advanced our environmental strategy by aligning with the UN CEO Water Mandate, adopting a water risk management approach, targeting our largest sites and those in high water stress regions, and initiating biodiversity impact assessments to understand our biodiversity risks and activities to improve biodiversity management. Our approach to the environment encompasses four key areas: air and water quality, water use and availability, material reuse and waste, and biodiversity and ecosystem services.

[Fixed row]

(1.4) State the end date of the year for which you are reporting data. For emissions data, indicate whether you will be providing emissions data for past reporting years.

	End date of reporting year	Alignment of this reporting period with your financial reporting period	Indicate if you are providing emissions data for past reporting years
	12/31/2023	Select from: <input checked="" type="checkbox"/> Yes	Select from: <input checked="" type="checkbox"/> No

[Fixed row]

(1.5) Provide details on your reporting boundary.

(1.5.1) Is your reporting boundary for your CDP disclosure the same as that used in your financial statements?

Select from:

No

(1.5.2) How does your reporting boundary differ to that used in your financial statement?

The environmental, social, and governance (ESG) data in this disclosure relate to global operations at our majority-owned or operated manufacturing sites, pipelines, and large offices for 2023, unless stated otherwise. Assets that are acquired or divested will be accounted for in our base year greenhouse gas (GHG) emissions in accordance with the Greenhouse Gas Protocol. The narrative may include our non-operated joint ventures. Financial data includes our joint ventures to the extent appropriate under Generally Accepted Accounting Principles in the U.S. (U.S. GAAP). Consolidated Financial Statements are prepared from the books and records of LYB. Reporting against our recycled and renewable-based polymer goal includes: (i) joint venture production marketed by LYB plus our pro rata share of the remaining production produced and marketed by the joint venture, and (ii) production via third-party tolling arrangements. Subsidiaries are defined as those companies over which we, either directly or indirectly, have control through a majority of the voting rights or the right to exercise control or to obtain the majority of the benefits and be exposed to the majority of the risks. Subsidiaries are consolidated from the date on which control is obtained until the date that such control ceases. All intercompany transactions and balances have been eliminated in consolidation.

[Fixed row]

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

	Does your organization use this unique identifier?	Provide your unique identifier
Ticker symbol	Select from: <input checked="" type="checkbox"/> Yes	LYB

[Add row]

(1.8) Are you able to provide geolocation data for your facilities?

	Are you able to provide geolocation data for your facilities?	Comment
	Select from: <input checked="" type="checkbox"/> No, this is confidential data	

[Fixed row]

(1.8.1) Please provide all available geolocation data for your facilities.Row 1

(1.8.1.1) Identifier

AKO - Akron

(1.8.1.2) Latitude

41.10372

(1.8.1.3) Longitude

-81.4873

(1.8.1.4) Comment

Row 2

(1.8.1.1) Identifier

ALO - Altamira

(1.8.1.2) Latitude

22.39215

(1.8.1.3) Longitude

-97.9387

(1.8.1.4) Comment

Row 3

(1.8.1.1) Identifier

ASO - Åstorp

(1.8.1.2) Latitude

56.12475

(1.8.1.3) Longitude

12.91361

(1.8.1.4) Comment

Row 4

(1.8.1.1) Identifier

ATO - Allentown

(1.8.1.2) Latitude

40.59111

(1.8.1.3) Longitude

-75.6018

(1.8.1.4) Comment

Row 5

(1.8.1.1) Identifier

AXO - Akron Exeter

(1.8.1.2) Latitude

41.03002

(1.8.1.3) Longitude

-81.4792

(1.8.1.4) Comment

This facility was sold at the beginning of 2024, but operated throughout 2023 and contributed to 2023 water metrics.

Row 6

(1.8.1.1) Identifier

BAO - Bayreuth

(1.8.1.2) Latitude

49.96958

(1.8.1.3) Longitude

11.60368

(1.8.1.4) Comment

Row 7

(1.8.1.1) Identifier

BBO - Bornem

(1.8.1.2) Latitude

51.08737

(1.8.1.3) Longitude

4.260994

(1.8.1.4) Comment

Row 8

(1.8.1.1) Identifier

BCO - Bayport Underwood

(1.8.1.2) Latitude

29.62901

(1.8.1.3) Longitude

-95.0867

(1.8.1.4) Comment

*This facility was sold at the beginning of 2024, but operated throughout 2023 and contributed to 2023 water metrics.
[Add row]*

(1.22) Provide details on the commodities that you produce and/or source.

Timber products

(1.22.1) Produced and/or sourced

Select from:

Sourced

(1.22.2) Commodity value chain stage

Select all that apply

Manufacturing

(1.22.4) Indicate if you are providing the total commodity volume that is produced and/or sourced

Select from:

No, the total volume is unknown

(1.22.11) Form of commodity

Select all that apply

Primary packaging

Secondary packaging

(1.22.12) % of procurement spend

Select from:

Unknown

(1.22.13) % of revenue dependent on commodity

Unknown

(1.22.14) In the questionnaire setup did you indicate that you are disclosing on this commodity?

Select from:

- Yes, disclosing

(1.22.15) Is this commodity considered significant to your business in terms of revenue?

Select from:

- No

(1.22.19) Please explain

We purchase wood products for packaging. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the volume and origins of the commodities from which these products are sourced. We also plan to assess whether we can apply any new information gathering processes globally. Although we estimate consumption of these products relative to our overall product consumption to be low, comprehensive data is necessary to make a reliable statement about the percentage of procurement spend on these commodities.

Palm oil

(1.22.1) Produced and/or sourced

Select from:

- Sourced

(1.22.2) Commodity value chain stage

Select all that apply

- Manufacturing

(1.22.4) Indicate if you are providing the total commodity volume that is produced and/or sourced

Select from:

- No, the total volume is unknown

(1.22.11) Form of commodity

Select all that apply

- Palm oil derivatives

(1.22.12) % of procurement spend

Select from:

- Unknown

(1.22.13) % of revenue dependent on commodity

Select from:

- Unknown

(1.22.14) In the questionnaire setup did you indicate that you are disclosing on this commodity?

Select from:

- Yes, disclosing

(1.22.15) Is this commodity considered significant to your business in terms of revenue?

Select from:

- No

(1.22.19) Please explain

We purchase bio-based feedstock and additives that could contain palm oil. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the volume and origins of the commodities from which certain of these products are sourced. We also plan to assess whether we can apply any new information gathering processes globally. Although we estimate consumption of these products relative to our overall product consumption to be low, comprehensive data is necessary to make a reliable statement about the percentage of procurement spent on these commodities.

Cattle products

(1.22.1) Produced and/or sourced

Select from:

Sourced

(1.22.2) Commodity value chain stage

Select all that apply

Manufacturing

(1.22.4) Indicate if you are providing the total commodity volume that is produced and/or sourced

Select from:

No, the total volume is unknown

(1.22.11) Form of commodity

Select all that apply

Tallow

(1.22.12) % of procurement spend

Select from:

Unknown

(1.22.13) % of revenue dependent on commodity

Select from:

Unknown

(1.22.14) In the questionnaire setup did you indicate that you are disclosing on this commodity?

Select from:

Yes, disclosing

(1.22.15) Is this commodity considered significant to your business in terms of revenue?

Select from:

No

(1.22.19) Please explain

We purchase bio-based feedstock and additives that could contain tallow. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the volume and origins of the commodities from which certain of these products are sourced. We also plan to assess whether we can apply any new information gathering processes globally. Although we estimate consumption of these products relative to our overall product consumption to be low, comprehensive data is necessary to make a reliable statement about the percentage of procurement spent on these commodities.

Soy

(1.22.1) Produced and/or sourced

Select from:

Sourced

(1.22.2) Commodity value chain stage

Select all that apply

Manufacturing

(1.22.3) Indicate if you have direct soy and/or embedded soy in your value chain

Select from:

Direct soy only

(1.22.4) Indicate if you are providing the total commodity volume that is produced and/or sourced

Select from:

No, the total volume is unknown

(1.22.11) Form of commodity

Select all that apply

Soy derivatives

(1.22.12) % of procurement spend

Select from:

Unknown

(1.22.13) % of revenue dependent on commodity

Select from:

Unknown

(1.22.14) In the questionnaire setup did you indicate that you are disclosing on this commodity?

Select from:

Yes, disclosing

(1.22.15) Is this commodity considered significant to your business in terms of revenue?

Select from:

No

(1.22.19) Please explain

We purchase bio-based feedstock and additives that could contain soy. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the volume and origins of the commodities from which certain of these products are sourced. We also plan to assess whether we can apply any new information gathering processes globally. Although we estimate consumption of these products relative to our overall product consumption to be low, comprehensive data is necessary to make a reliable statement about the percentage of procurement spent on these commodities.

[Fixed row]

(1.24) Has your organization mapped its value chain?

(1.24.1) Value chain mapped

Select from:

Yes, we have mapped or are currently in the process of mapping our value chain

(1.24.2) Value chain stages covered in mapping

Select all that apply

- Upstream value chain
- Downstream value chain

(1.24.3) Highest supplier tier mapped

Select from:

- Tier 1 suppliers

(1.24.4) Highest supplier tier known but not mapped

Select from:

- Tier 2 suppliers

(1.24.6) Smallholder inclusion in mapping

Select from:

- Smallholders not relevant, and not included

(1.24.7) Description of mapping process and coverage

We completed an extensive supplier sustainability risk mapping project in 2023 following an initial application of risk criteria the prior year. We leveraged the EcoVadis IQ platform to gain a detailed view of risks in the areas of environment, social standards, and ethics. From this analysis, we obtained valuable insights into potential risks in our supply chain, allowing us to take proactive measures to mitigate potential impacts if necessary. In 2023, more than 1,500 suppliers with a spend threshold of 150,000 in 2022 were assessed, which represents a 120% increase over 2022. We have also continued our engagement program specifically on scope 3 with our key suppliers, focusing on high emitting and strategic suppliers. All strategic suppliers with a spend over the threshold of 150,000 are invited to supplier engagement webinars to inform them of LYB's sustainability strategy and initiatives, notably on the scope 3 program, with the aim for suppliers to develop sustainability goals and develop and progress in their action plans. We've also focused specifically on high emitting suppliers, where a smaller group of suppliers contribute the majority of our scope 3.1 emissions. With these suppliers, we have a tailored engagement approach focusing on emissions from the raw materials we procure from them. We have also continued our efforts in improving the granularity of our customer mapping including ultimate end uses of the products we sell to the market.

[Fixed row]

(1.24.1) Have you mapped where in your direct operations or elsewhere in your value chain plastics are produced, commercialized, used, and/or disposed of?

(1.24.1.1) Plastics mapping

Select from:

- Yes, we have mapped or are currently in the process of mapping plastics in our value chain

(1.24.1.2) Value chain stages covered in mapping

Select all that apply

- Upstream value chain
- Downstream value chain
- End-of-life management

(1.24.1.4) End-of-life management pathways mapped

Select all that apply

- Preparation for reuse
- Recycling
- Waste to Energy
- Incineration
- Landfill

[Fixed row]

(1.24.2) Which commodities has your organization mapped in your upstream value chain (i.e., supply chain)?

	Value chain mapped for this sourced commodity	Highest supplier tier known but not mapped for this sourced commodity
Timber products	Select from: <input checked="" type="checkbox"/> No	Select from: <input checked="" type="checkbox"/> Tier 2 suppliers
Palm oil	Select from: <input checked="" type="checkbox"/> No	Select from: <input checked="" type="checkbox"/> Tier 2 suppliers
Cattle products	Select from: <input checked="" type="checkbox"/> No	Select from: <input checked="" type="checkbox"/> Tier 2 suppliers
Soy	Select from: <input checked="" type="checkbox"/> No	Select from: <input checked="" type="checkbox"/> Tier 2 suppliers

[Fixed row]

C2. Identification, assessment, and management of dependencies, impacts, risks, and opportunities

(2.1) How does your organization define short-, medium-, and long-term time horizons in relation to the identification, assessment, and management of your environmental dependencies, impacts, risks, and opportunities?

Short-term

(2.1.1) From (years)

0

(2.1.3) To (years)

5

(2.1.4) How this time horizon is linked to strategic and/or financial planning

In the short term, our focus is on addressing immediate and near-term risks and opportunities that can directly impact operational efficiency, regulatory compliance, and financial performance. Strategic planning during this period involves implementing initiatives to manage emerging risks, ensure adherence to existing and anticipated regulations, and achieve quick wins in sustainability. Strategically, this period emphasizes enhancing energy efficiency and increasing the procurement of renewable energy. Financial planning during this term includes allocating resources for immediate climate-related risks, such as physical damages from extreme weather events, and investing in short-term mitigation projects that yield quick returns.

Medium-term

(2.1.1) From (years)

6

(2.1.3) To (years)

20

(2.1.4) How this time horizon is linked to strategic and/or financial planning

The medium term is critical for aligning our strategic objectives with long-term sustainability targets. This period is linked to planning for significant transitions, such as technological upgrades, policy shifts, and changes in market dynamics driven by climate-related factors. Financial planning during this horizon involves capital investments in infrastructure and technology to mitigate medium-term risks, reduce carbon footprint, and enhance resilience. This strategy aligns with our sustainability goals, such as reducing absolute greenhouse gas emissions by 42% for scopes 1 and 2 and 30% for scope 3 by 2030, while securing at least 50% of our electricity from renewable sources.

Long-term

(2.1.1) From (years)

21

(2.1.2) Is your long-term time horizon open ended?

Select from:

Yes

(2.1.4) How this time horizon is linked to strategic and/or financial planning

The long-term horizon is essential for achieving our 2050 sustainability goals, including reaching net-zero emissions for scopes 1 and 2. Strategic planning during this period focuses on ensuring enduring sustainability and resilience, fostering innovation, and adapting to evolving regulatory environments. Financially, this period requires planning and budgeting in research and development, long-term projects, and strategic shifts in our business model.
[Fixed row]

(2.2) Does your organization have a process for identifying, assessing, and managing environmental dependencies and/or impacts?

	Process in place	Dependencies and/or impacts evaluated in this process
	Select from: <input checked="" type="checkbox"/> Yes	Select from: <input checked="" type="checkbox"/> Both dependencies and impacts

[Fixed row]

(2.2.1) Does your organization have a process for identifying, assessing, and managing environmental risks and/or opportunities?

	Process in place	Risks and/or opportunities evaluated in this process	Is this process informed by the dependencies and/or impacts process?
	Select from: <input checked="" type="checkbox"/> Yes	Select from: <input checked="" type="checkbox"/> Both risks and opportunities	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(2.2.2) Provide details of your organization’s process for identifying, assessing, and managing environmental dependencies, impacts, risks, and/or opportunities.

Row 1

(2.2.2.1) Environmental issue

Select all that apply

- Climate change

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue

Select all that apply

- Dependencies
- Impacts
- Risks
- Opportunities

(2.2.2.3) Value chain stages covered

Select all that apply

- Direct operations
- Upstream value chain
- Downstream value chain

(2.2.2.4) Coverage

Select from:

- Full

(2.2.2.5) Supplier tiers covered

Select all that apply

- Tier 1 suppliers

(2.2.2.7) Type of assessment

Select from:

- Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:

- Annually

(2.2.2.9) Time horizons covered

Select all that apply

- Short-term
- Medium-term
- Long-term

(2.2.2.10) Integration of risk management process

Select from:

- Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

- Not location specific

(2.2.2.12) Tools and methods used

Commercially/publicly available tools

- Other commercially/publicly available tools, please specify :Taskforce on Climate-related Financial Disclosures (TCFD), TFS audits, EcoVadis

Enterprise Risk Management

- Enterprise Risk Management
- ISO 31000 Risk Management Standard

International methodologies and standards

- IPCC Climate Change Projections

Other

- Materiality assessment
- Scenario analysis

(2.2.2.13) Risk types and criteria considered

Acute physical

- Drought
- Tornado
- Landslide
- Heat waves
- Cyclones, hurricanes, typhoons
- Heavy precipitation (rain, hail, snow/ice)
- Flood (coastal, fluvial, pluvial, ground water)
- Storm (including blizzards, dust, and sandstorms)

Chronic physical

- Heat stress
- Sea level rise
- Temperature variability
- Increased severity of extreme weather events
- Changing temperature (air, freshwater, marine water)
- Changing precipitation patterns and types (rain, hail, snow/ice)

Policy

- Carbon pricing mechanisms
- Changes to international law and bilateral agreements
- Changes to national legislation
- Increased difficulty in obtaining operations permits

Market

- Changing customer behavior

Reputation

- Increased partner and stakeholder concern and partner and stakeholder negative feedback
- Negative press coverage related to support of projects or activities with negative impacts on the environment (e.g. GHG emissions, deforestation & conversion, water stress)
- Stigmatization of sector

Technology

- Transition to lower emissions technology and products
- Unsuccessful investment in new technologies

Liability

- Exposure to litigation
- Non-compliance with regulations

(2.2.2.14) Partners and stakeholders considered

Select all that apply

- NGOs
- Customers
- Employees
- Investors
- Suppliers
- Regulators
- Local communities

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:

No

(2.2.2.16) Further details of process

Our overall risk profile – including sustainability and environmental-related risk is defined by the Enterprise Risk Management (ERM) organization, led by our General Counsel. In 2023, our ERM function focused on four strategic priorities: (1) enterprise-level risks, (2) departmental risks, (3) climate change risk management, and (4) building risk management capabilities. Climate change risks include both physical risks stemming from the direct impact of climate change on the environment and our assets and operations, and transition risks and opportunities that arise from the global shift toward a lower carbon and more sustainable economy. A multi-disciplinary team led by ERM identifies and assesses climate-related risk exposures throughout LYB and our extended supply chain. We address specific climate-related risks through structured response plans, which are shared with our Sustainability Council, with input and alignment from the Executive Committee and the Health, Safety, Environmental & Sustainability (HSE&S) Committee of the Board. We align with the Task Force on Climate-Related Financial Disclosures (TCFD) framework to guide our approach. Our risk management process utilizes the six-step ERM risk management process for both risks and opportunities based on the International Standard ISO 31000. We have developed climate-related scenarios to assess both physical and transitional risks. These scenarios align with the Intergovernmental Panel on Climate Change (IPCC) representative concentration pathways (RCP): RCP 2.6, 4.5, and 8.5. These pathways represent varying expectations of global temperature rise in the medium (2030) and long term (2050). We use materiality assessments to help define the environmental, social and governance topics that matter most to our business and stakeholders. Our assessment is based on a double materiality approach: We evaluate risks and opportunities that could influence our financial performance and long-term enterprise value (financial materiality), and the ways in which we could impact the economy, environment and society (impact materiality) in the short, medium and long term. Our last materiality assessment was conducted in 2022. We engaged with employees, investors, key suppliers, customers and peers, and with local community members and nongovernmental organizations (NGOs). In addition, we utilize EcoVadis assessments and Together for Sustainability (TfS) audits to gain insights into our suppliers' sustainability performance. These sustainability assessments play a pivotal role in identifying potential risks and opportunities, driving ongoing sustainability enhancements and facilitating open and constructive dialogue with our suppliers to improve their sustainability practices. We completed a supplier sustainability risk mapping project in 2023 following an initial application of risk criteria the prior year. We leveraged the EcoVadis IQ platform to gain a view of risks in the areas of environment, social standards and ethics.. Based on the risk mapping, we request certain suppliers to complete an EcoVadis sustainability assessment or a TfS audit. If the assessment or audit identifies a need to improve, we may request that the supplier implements corrective actions.

Row 2

(2.2.2.1) Environmental issue

Select all that apply

Water

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue

Select all that apply

- Dependencies
- Impacts
- Risks
- Opportunities

(2.2.2.3) Value chain stages covered

Select all that apply

- Direct operations
- Upstream value chain

(2.2.2.4) Coverage

Select from:

- Full

(2.2.2.5) Supplier tiers covered

Select all that apply

- Tier 1 suppliers

(2.2.2.7) Type of assessment

Select from:

- Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:

- Annually

(2.2.2.9) Time horizons covered

Select all that apply

- Short-term
- Medium-term
- Long-term

(2.2.2.10) Integration of risk management process

Select from:

- Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

- Site-specific
- Not location specific

(2.2.2.12) Tools and methods used

Commercially/publicly available tools

- EcoVadis
- WRI Aqueduct
- Other commercially/publicly available tools, please specify :TfS audits

Enterprise Risk Management

- Enterprise Risk Management

Other

- Materiality assessment

(2.2.2.13) Risk types and criteria considered

Chronic physical

- Water stress
- Groundwater depletion
- Declining water quality
- Water quality at a basin/catchment level
- Increased severity of extreme weather events
- Water availability at a basin/catchment level
- Increased levels of environmental pollutants in freshwater bodies

(2.2.2.14) Partners and stakeholders considered

Select all that apply

- Local communities
- Regulators
- Suppliers
- Water utilities at a local level

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:

- No

(2.2.2.16) Further details of process

Our ERM process assesses impacts, risks, opportunities and dependencies, and includes consideration of sustainability and environment related topics (including climate, water, biodiversity and forest). We have not identified an enterprise level risk or opportunity specific to water. Climate change risks include physical risks stemming from the direct impact of climate change on the environment including for extreme water-related weather events (e.g. flooding and drought). A multi-disciplinary team led by ERM identifies and assesses climate-related risk exposures throughout LYB and our extended supply chain. We address specific climate-related risks through structured response plans, which are shared with our Sustainability Council, with input and alignment from the Executive Committee and the Health, Safety, Environmental & Sustainability Committee of the Board. We utilize the Task Force on Climate-Related Financial Disclosures (TCFD) framework to guide our approach. Additionally, we use materiality assessments to help define the environmental, social and governance topics that matter most to our business and stakeholders. Our assessment is based on a double materiality approach: We evaluate risks and opportunities that could influence our financial performance and long-term enterprise value (financial materiality), and the ways in which we could impact the economy, environment and society (impact materiality) in the short,

medium and long term. Our last materiality assessment was conducted in 2022. We engaged with employees, investors, key suppliers, customers and peers, and with local community members and nongovernmental organizations (NGOs). In addition, we utilize EcoVadis assessments and Together for Sustainability (TfS) audits to gain insights into our suppliers' sustainability performance. These sustainability assessments play a pivotal role in identifying potential risks and opportunities, driving ongoing sustainability enhancements and facilitating open and constructive dialogue with our suppliers to improve their sustainability practices. We completed a supplier sustainability risk mapping project in 2023 following an initial application of risk criteria the prior year. We leveraged the EcoVadis IQ platform to gain a view of risks in the areas of environment, social standards and ethics.. Based on the risk mapping, we request certain suppliers to complete an EcoVadis sustainability assessment or a TfS audit. If the assessment or audit identifies a need to improve, we may request that the supplier implements corrective actions.. In addition, we conduct baseline water risk assessments of our manufacturing sites. We refreshed our baseline water risk assessments in 2023, using the World Resources Institute Aqueduct™ Tool (Aqueduct™), version 3.0.. Our sites located in extremely high or high water risk areas of the world comprised less than 0.06% of our estimated total water consumption. Aqueduct™ 3.0 applies models based on past data to screen for potential future water risks, so we consider the data to be applicable across all time horizons.

Row 3

(2.2.2.1) Environmental issue

Select all that apply

- Biodiversity

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue

Select all that apply

- Dependencies
- Impacts
- Risks
- Opportunities

(2.2.2.3) Value chain stages covered

Select all that apply

- Direct operations
- Upstream value chain
- Downstream value chain

(2.2.2.4) Coverage

Select from:

- Full

(2.2.2.5) Supplier tiers covered

Select all that apply

- Tier 1 suppliers

(2.2.2.7) Type of assessment

Select from:

- Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:

- Annually

(2.2.2.9) Time horizons covered

Select all that apply

- Short-term
- Medium-term
- Long-term

(2.2.2.10) Integration of risk management process

Select from:

- Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

- Site-specific
- Not location specific

(2.2.2.12) Tools and methods used

Commercially/publicly available tools

- IBAT – Integrated Biodiversity Assessment Tool
- Other commercially/publicly available tools, please specify :TfS audits

Enterprise Risk Management

- Enterprise Risk Management

Other

- Materiality assessment

(2.2.2.13) Risk types and criteria considered

Chronic physical

- Declining ecosystem services
- Increased ecosystem vulnerability

(2.2.2.14) Partners and stakeholders considered

Select all that apply

- Local communities
- Regulators
- Suppliers

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:

No

(2.2.2.16) Further details of process

Our ERM process includes assessing impacts, risks, opportunities and dependencies, and includes consideration of sustainability and environment related topics (including climate, water, biodiversity and forest). We have not identified an enterprise level risk or opportunity specific to biodiversity. Additionally, we use materiality assessments to help define the environmental, social and governance topics that matter most to our business and stakeholders. Our assessment is based on a double materiality approach: We evaluate risks and opportunities that could influence our financial performance and long-term enterprise value (financial materiality), and the ways in which we could impact the economy, environment and society (impact materiality) in the short, medium and long term. Our last materiality assessment was conducted in 2022. We engaged with employees, investors, key suppliers, customers and peers, and with local community members and nongovernmental organizations (NGOs). In addition, we utilize EcoVadis assessments and Together for Sustainability (TfS) audits to gain insights into our suppliers' sustainability performance. These play a pivotal role in identifying potential risks and opportunities. We have progressed in the development of our biodiversity ambition, commitments, and strategy. In 2022, we completed an assessment of our major manufacturing operations, large offices and significant upstream and downstream value chain activities from a biodiversity perspective. Nine global datasets were used to assess our locations, including Species Threat Abatement and Restoration (STAR) maps, the World Database on Protected Areas (WDPA), World Heritage Sites (WHS), Key Biodiversity Areas (KBAs) from WDPA, and the Alliance for Zero Extinction (AZE). Additionally, major upstream and downstream activities were grouped and reviewed based on relative significance. A first screening approach for upstream and downstream activity considered relative importance across multiple biodiversity stressors defined by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES).

Row 4

(2.2.2.1) Environmental issue

Select all that apply

Forests

(2.2.2.2) Indicate which of dependencies, impacts, risks, and opportunities are covered by the process for this environmental issue

Select all that apply

- Dependencies
- Impacts
- Risks
- Opportunities

(2.2.2.3) Value chain stages covered

Select all that apply

- Direct operations
- Upstream value chain

(2.2.2.4) Coverage

Select from:

- Full

(2.2.2.5) Supplier tiers covered

Select all that apply

- Tier 1 suppliers

(2.2.2.7) Type of assessment

Select from:

- Qualitative and quantitative

(2.2.2.8) Frequency of assessment

Select from:

- Annually

(2.2.2.9) Time horizons covered

Select all that apply

- Short-term
- Medium-term
- Long-term

(2.2.2.10) Integration of risk management process

Select from:

- Integrated into multi-disciplinary organization-wide risk management process

(2.2.2.11) Location-specificity used

Select all that apply

- Not location specific

(2.2.2.12) Tools and methods used

Enterprise Risk Management

- Enterprise Risk Management

Other

- Materiality assessment

(2.2.2.13) Risk types and criteria considered

Market

- Uncertainty about commodity origin and/or legality

(2.2.2.14) Partners and stakeholders considered

Select all that apply

- Suppliers

(2.2.2.15) Has this process changed since the previous reporting year?

Select from:

- Yes

(2.2.2.16) Further details of process

Our ERM process includes assessing impacts, risks, opportunities and dependencies, and includes consideration of sustainability and environment related topics (including climate, water, biodiversity and forest). We have not identified an enterprise level risk or opportunity specific to forest risk commodities, in part because we believe we have limited use of forest risk commodities. Additionally, we use materiality assessments to help define the environmental, social and governance topics that matter most to our business and stakeholders. Our assessment is based on a double materiality approach: We evaluate risks and opportunities that could influence our financial performance and long-term enterprise value (financial materiality), and the ways in which we could impact the economy, environment and society (impact materiality) in the short, medium and long term. Our last materiality assessment was conducted in 2022. We engaged with employees, investors, key suppliers, customers and peers, and with local community members and nongovernmental organizations (NGOs). In addition, we utilize EcoVadis assessments and Together for Sustainability (TfS) audits to gain insights into our suppliers' sustainability performance. These play a pivotal role in identifying potential risks and opportunities. We are gathering information on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

[Add row]

(2.2.7) Are the interconnections between environmental dependencies, impacts, risks and/or opportunities assessed?

(2.2.7.1) Interconnections between environmental dependencies, impacts, risks and/or opportunities assessed

Select from:

Yes

(2.2.7.2) Description of how interconnections are assessed

Our ERM process assesses impacts, risks, opportunities and dependencies, and includes consideration of sustainability and environment related topics (including climate, water, biodiversity and forest). We have not identified enterprise level risks or opportunities specific to water, biodiversity, or forest. Climate change risks include physical risks stemming from the direct impact of climate change on the environment including for extreme water-related weather events (e.g. flooding and drought). A multi-disciplinary team led by ERM identifies and assesses climate-related risk exposures throughout LYB and our extended supply chain. We address specific climate-related risks through structured response plans, which are shared with our Sustainability Council, with input and alignment from the Executive Committee and the Health, Safety, Environmental & Sustainability Committee of the Board. We utilize the Task Force on Climate-Related Financial Disclosures (TCFD) framework to guide our approach to reporting and disclosure, underscoring our commitment to transparency.

[Fixed row]

(2.3) Have you identified priority locations across your value chain?

(2.3.1) Identification of priority locations

Select from:

- Yes, we have identified priority locations

(2.3.2) Value chain stages where priority locations have been identified

Select all that apply

- Direct operations

(2.3.3) Types of priority locations identified

Sensitive locations

- Areas important for biodiversity
- Areas of limited water availability, flooding, and/or poor quality of water
- Areas of importance for ecosystem service provision

(2.3.4) Description of process to identify priority locations

We refreshed our baseline water risk assessments in 2023, using the World Resources Institute Aqueduct Tool (Aqueduct), version 3.0. Aqueduct rates geographic locations worldwide on a scale from low to extremely high overall water risk based on watershed data related to water quantity stress, quality, and regional factors. Outcome of this assessment is a map that shows our sites located in areas listed as high or extremely high water risk from Aqueduct. Our sites located in extremely high or high water risk areas of the world comprised less than 0.06% of our estimated total water consumption. Additionally, in 2022, we completed an assessment of our major manufacturing operations, large offices, and significant upstream and downstream value chain activities from a biodiversity perspective. As a result of this assessment, we identified certain direct operations sites, our fossil fuel-based feedstocks, and our propylene products as our areas of focus. Our priority operational sites were selected based on proximity to protected areas or key biodiversity areas. In 2023, we selected two of our priority sites to complete a baseline biodiversity assessment. We plan to expand the program, based on learnings, at other priority sites.

(2.3.5) Will you be disclosing a list/spatial map of priority locations?

Select from:

- Yes, we will be disclosing the list/geospatial map of priority locations

(2.3.6) Provide a list and/or spatial map of priority locations

Water risk and key biodiversity areas - Sustainability Report, p.45.pdf
[Fixed row]

(2.4) How does your organization define substantive effects on your organization?

Risks

(2.4.1) Type of definition

Select all that apply

- Qualitative
 Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

- EBITDA

(2.4.3) Change to indicator

Select from:

- Absolute decrease

(2.4.5) Absolute increase/ decrease figure

100000000

(2.4.6) Metrics considered in definition

Select all that apply

- Time horizon over which the effect occurs
- Likelihood of effect occurring
- Other, please specify :Financial impact, Environmental, Legislative, Reputational, and People-related risks

(2.4.7) Application of definition

LyondellBasell assesses risks and opportunities, including sustainability-related risks and opportunities, as part of its Enterprise Risk Management process. For purposes of responding to this question, a substantive effect on our organization is defined as a risk with an EBITDA loss of more than 100MM USD. Beyond financial consequence, we also consider environmental, legislative, reputational, and people-related consequences as part of our assessment. We classify risks based on financial and/or strategic consequence starting from insignificant, minor, moderate, major, and substantial. Time horizon: short, medium, and long term (0 to 5 years, 6 to 20 years, 21 years and beyond). Likelihood of effect: We classify risks based on likelihood from rare, unlikely, possible, likely, and almost certain. EBITDA is a “non-GAAP” financial measure as defined in Regulation G under the U S Securities Exchange Act of 1934, as amended. We calculate EBITDA as income from continuing operations plus interest expense (net), provision for (benefit from) income taxes, and depreciation and amortization. This measure, as presented herein, may not be comparable to similarly titled measures reported by other companies due to differences in the way the measures are calculated.

Opportunities

(2.4.1) Type of definition

Select all that apply

- Qualitative
- Quantitative

(2.4.2) Indicator used to define substantive effect

Select from:

- EBITDA

(2.4.3) Change to indicator

Select from:

- Absolute increase

(2.4.5) Absolute increase/ decrease figure

10000000

(2.4.6) Metrics considered in definition

Select all that apply

- Time horizon over which the effect occurs
- Likelihood of effect occurring
- Other, please specify :Financial impact

(2.4.7) Application of definition

LyondellBasell assesses risks and opportunities, including sustainability-related risks and opportunities, as part of its Enterprise Risk Management process. For purposes of responding to this question, a substantive effect on our organization is defined as a financial gain or increase in savings and efficiencies above 10 MM USD. Beyond financial consequence, we also consider environmental, legislative, reputational, and people-related consequences as part of our assessment. We classify risks based on financial and/or strategic consequence starting from insignificant, minor, moderate, major, and substantial. Time horizon: short, medium, and long term (0 to 5 years, 6 to 20 years, 21 years and beyond). Likelihood of effect: We classify risks based on likelihood from rare, unlikely, possible, likely, and almost certain. EBITDA is a "non-GAAP" financial measure as defined in Regulation G under the U S Securities Exchange Act of 1934, as amended. We calculate EBITDA as income from continuing operations plus interest expense (net), provision for (benefit from) income taxes, and depreciation and amortization. This measure, as presented herein, may not be comparable to similarly titled measures reported by other companies due to differences in the way the measures are calculated.

[Add row]

(2.5) Does your organization identify and classify potential water pollutants associated with its activities that could have a detrimental impact on water ecosystems or human health?

(2.5.1) Identification and classification of potential water pollutants

Select from:

- Yes, we identify and classify our potential water pollutants

(2.5.2) How potential water pollutants are identified and classified

We have processes to identify and classify water pollutants. Our HSES Policy requires sites to maintain a risk-based management system to ensure compliance with legal and HSES requirements, including wastewater discharge classification, with a goal of no environmental harm. Our Environmental Management System standard, consistent with ISO 14001, defines the management systems needed for continual performance improvement and to manage significant environmental aspects. Most sites are ISO 14001 certified and/or participate in the US chemical industry Responsible Care program. Our sites' primary potential pollutants are 'conventional pollutants,' as defined in US Clean Water Act section 304(a)(4) and Federal Register § 401.16. We comply with local regulations to monitor effluent conditions, operate and maintain pollution prevention measures, and address any excursions. Our sites primarily monitor pH, chemical oxygen demand, total suspended solids, and temperature. For sites that discharge wastewater to a surface water body, potential pollutants are identified as required by the jurisdiction. Toxicological testing is also conducted at site wastewater discharges where required by the authority to assure protection of ecosystems. Sites using third-party treatment must confirm that treatment and monitoring are completed before discharge.

[Fixed row]

(2.5.1) Describe how your organization minimizes the adverse impacts of potential water pollutants on water ecosystems or human health associated with your activities.

Row 1

(2.5.1.1) Water pollutant category

Select from:

- Other nutrients and oxygen demanding pollutants

(2.5.1.2) Description of water pollutant and potential impacts

• LyondellBasell refers to the definition of conventional pollutants and their potential impacts in US Clean Water Act section 304(a)(4), Federal Register § 401.16. and other specific references listed below. • BOD: "Certain environmental stresses can lessen the amount of dissolved oxygen in a water body, resulting in stresses on the local aquatic life."

(2.5.1.3) Value chain stage

Select all that apply

- Direct operations

(2.5.1.4) Actions and procedures to minimize adverse impacts

Select all that apply

- Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience
- Provision of best practice instructions on product use
- Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

(2.5.1.5) Please explain

• *Infrastructure and Storage:* We manage the risks of release for materials that cause BOD through reducing the quantity of pollutants that cause BOD, by providing appropriate containment, specifying correct handling, storage, and treatment, and limiting the quantity of such materials from entering wastewater conveyance systems. Our Incident Reporting Standard requires investigations into the root causes and corrective actions for any exceedances of permit or regulatory limits. General equipment integrity is managed through a risk-based inspection and repair program, informed by learnings from past investigations. • *Instructions on Product Use:* Compliance with applicable product safety data informs protective actions. For example, we refer to Safety Data Sheets for recommended storage and handling instructions. • *Sector-specific Processes:* Most of our sites are ISO 14001 certified or participate in the Responsible Care program. We also identify pollutants to ensure compliance with permitting requirements and/or applicable pre-treatment regulations. LYB's HSES policy states LYB conducts "...the systematic identification of risks...consistent with our Operational Excellence (OE) program." Success is measured and evaluated through monitoring and reporting against limits specific to permits and local requirements.

Row 2

(2.5.1.1) Water pollutant category

Select from:

Oil

(2.5.1.2) Description of water pollutant and potential impacts

• *Source: United States 43 Federal Register 32857: Oil and Grease “It is common practice to install oil and grease removal equipment for by-product recovery purposes or to prevent disruption of subsequent wastewater treatment. • Substances found in this group of pollutants also represent oxygen demanding material and are of concern in wastewater treatment.”*

(2.5.1.3) Value chain stage

Select all that apply

Direct operations

(2.5.1.4) Actions and procedures to minimize adverse impacts

Select all that apply

Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience

Provision of best practice instructions on product use

Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

(2.5.1.5) Please explain

• *Infrastructure and Storage: We manage the risks of release of wastewater containing oil through reducing the quantity of oil in the wastewater, by providing appropriate containment, and by specifying correct handling, storage, and treatment. General equipment integrity is managed through a risk-based inspection program, informed by learnings from past investigations. • Instructions on Product Use: Compliance with applicable product safety data informs protective actions. For example, we refer to Safety Data Sheets for recommended storage and handling instructions. • Sector-specific Processes: Most of our sites are ISO 14001 certified or participate in the Responsible Care program. We also identify pollutants to ensure compliance with permitting and/or pre-treatment requirements. LYB’s HSES policy states LYB conducts “...the systematic identification of risks...consistent with our Operational Excellence (OE) program.” Success is measured and evaluated through monitoring and reporting against limits specific to permits and local requirements.*

Row 3

(2.5.1.1) Water pollutant category

Select from:

- Other physical pollutants

(2.5.1.2) Description of water pollutant and potential impacts

• *TSS Source USGS, Sediment and Suspended Sediment, 2018: "Sediment in rivers can... shorten the lifespan of dams and reservoirs...Reservoirs slowly fill up with sediment and mud, eventually making them unusable for their intended purposes."*

(2.5.1.3) Value chain stage

Select all that apply

- Direct operations

(2.5.1.4) Actions and procedures to minimize adverse impacts

Select all that apply

- Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience
- Provision of best practice instructions on product use
- Discharge treatment using sector-specific processes to ensure compliance with regulatory requirements

(2.5.1.5) Please explain

• *Infrastructure and Storage: We manage the risks of release of wastewater containing Total Suspended Solids (TSS) through reducing the quantity of solids in the wastewater, by providing appropriate containment, and by specifying correct handling, storage, and treatment. Our Incident Reporting Standard requires investigations into the root causes and corrective actions for any exceedances of permit or regulatory limits. General equipment integrity is managed through a risk-based inspection program, informed by learnings from past investigations.* • *Instructions on Product Use: Compliance with applicable product safety data informs protective actions. For example, we refer to Safety Data for recommended storage and handling procedures.* • *Sector-specific Processes: Most of our sites are ISO 14001 certified or participate in the Responsible Care program. We also identify pollutants to ensure compliance with permitting and/or pre-treatment regulatory requirements. LYB's HSES policy states LYB conducts "...the systematic identification of risks...consistent with our Operational Excellence (OE) program." Success is measured and evaluated through monitoring and reporting against limits specific to permits and local requirements.*

Row 4

(2.5.1.1) Water pollutant category

Select from:

- Microplastics and plastic particles

(2.5.1.2) Description of water pollutant and potential impacts

There is a growing concern with the accumulation of plastic, plastic additives, and microplastics in the environment, particularly in waterways and oceans. LyondellBasell believes ending plastic waste in the environment is a critical issue of our time. We are committed to helping eliminate plastic waste and are engaged in collaborative efforts across the value chain to direct action where it is needed most. We are a founding member of the Alliance to End Plastic Waste which aims to divert millions of metric tons of plastic waste from the environment. We are also a member of Operation Clean Sweep (OCS), the plastics industry's global initiative that promotes collaboration, training and education in controlling and reducing the loss of pellets, flakes and powders. In 2019, we committed to OCS Blue, a U.S. program that enhances management and reporting requirements.

(2.5.1.3) Value chain stage

Select all that apply

- Direct operations

(2.5.1.4) Actions and procedures to minimize adverse impacts

Select all that apply

- Assessment of critical infrastructure and storage condition (leakages, spillages, pipe erosion etc.) and their resilience
- Other, please specify :Sector -specific processes

(2.5.1.5) Please explain

• Infrastructure and Storage: We manage the risks of release of polymeric solids by providing appropriate containment, preventing spills, and specifying correct handling, storage, and treatment. • Sector-specific Processes: We are committed to zero polymeric pellet loss to the environment and being transparent about our performance. We monitor and report pellet loss in accordance with American Chemistry Council (ACC) guidance. We clean spills and conduct investigations to prevent similar incidents in the future. We conduct annual assessments of our operations to evaluate and improve pellet loss efforts, including monitoring, handling, recycling, safe disposal, cleaning and containment. We also have tools to identify opportunities to prevent pellet loss and emphasize educating and empowering our employees in their continuing support of this effort.

C3. Disclosure of risks and opportunities

(3.1) Have you identified any environmental risks which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?

Climate change

(3.1.1) Environmental risks identified

Select from:

Yes, both in direct operations and upstream/downstream value chain

Forests

(3.1.1) Environmental risks identified

Select from:

No

(3.1.2) Primary reason why your organization does not consider itself to have environmental risks in your direct operations and/or upstream/downstream value chain

Select from:

Environmental risks exist, but none with the potential to have a substantive effect on our organization

(3.1.3) Please explain

Our ERM process includes assessing impacts, risks, opportunities and dependencies, and includes consideration of sustainability and environment related topics (including climate, water, biodiversity and forest). We have not identified an enterprise level risk specific to forest risk commodities, in part because we believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Water

(3.1.1) Environmental risks identified

Select from:

No

(3.1.2) Primary reason why your organization does not consider itself to have environmental risks in your direct operations and/or upstream/downstream value chain

Select from:

Environmental risks exist, but none with the potential to have a substantive effect on our organization

(3.1.3) Please explain

Our ERM process assesses impacts, risks, opportunities and dependencies, and includes consideration of sustainability and environment related topics (including climate, water, biodiversity and forest). We have not identified an enterprise level risk specific to water. Climate change risks include physical risks stemming from the direct impact of climate change on the environment including for extreme water-related weather events (e.g. flooding and drought). A multi-disciplinary team led by ERM identifies and assesses climate-related risk exposures throughout LYB and our extended supply chain. We address specific climate-related risks through structured response plans, which are shared with our Sustainability Council, with input and alignment from the Executive Committee and the Health, Safety, Environmental & Sustainability Committee of the Board. We utilize the Task Force on Climate-Related Financial Disclosures (TCFD) framework to guide our approach to reporting and disclosure, underscoring our commitment to transparency. We refreshed our baseline water risk assessments in 2023, using the World Resources Institute Aqueduct Tool (Aqueduct), version 3.0. Aqueduct rates geographic locations worldwide on a scale from low to extremely high overall water risk based on watershed data related to water quantity stress, quality, and regional factors. Our sites located in extremely high or high water risk areas of the world comprised less than 0.06% of our estimated total water consumption.

[Fixed row]

(3.1.1) Provide details of the environmental risks identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future.

Climate change

(3.1.1.1) Risk identifier

Select from:

Risk1

(3.1.1.3) Risk types and primary environmental risk driver

Policy

Carbon pricing mechanisms

(3.1.1.4) Value chain stage where the risk occurs

Select from:

Direct operations

(3.1.1.6) Country/area where the risk occurs

Select all that apply

France

Germany

Italy

Netherlands

United Kingdom of Great Britain and Northern Ireland

(3.1.1.9) Organization-specific description of risk

LyondellBasell has manufacturing sites in the European Union that fall under the scope of the EU ETS, including in Germany, France, the Netherlands, Italy, and the United Kingdom. The European Union is preparing national legislation and protection plans to implement their emission reduction commitments under the Paris Agreement. Throughout 2023, a series of legislative reforms arising out of the EU's 'Fit for 55' package of proposals has been adopted and are in the process of being implemented, including reforms to the EU Emissions Trading System (ETS) and the introduction of a Carbon Border Adjustment Mechanism. Our operations in Europe participate in the ETS, and we meet our obligations through a combination of free and purchased emission allowances. We anticipate that these regulations will result in an accelerated reduction of our free allowances and higher market prices for purchased allowances. These and other future regulations could result in increased costs, additional capital expenditures, and/or restrictions on operations. In addition, any future potential climate regulations, legislation, or litigation results could impose additional operating restrictions or delays in implementing growth projects or other capital investments, require us to incur increased costs, and could have a material adverse effect on our business and results of operations.

(3.1.1.11) Primary financial effect of the risk

Select from:

- Increased indirect [operating] costs

(3.1.1.12) Time horizon over which the risk is anticipated to have a substantive effect on the organization

Select all that apply

- Medium-term

(3.1.1.13) Likelihood of the risk having an effect within the anticipated time horizon

Select from:

- About as likely as not

(3.1.1.14) Magnitude

Select from:

- Medium

(3.1.1.16) Anticipated effect of the risk on the financial position, financial performance and cash flows of the organization in the selected future time horizons

We anticipate that these expected regulatory changes in the EU carbon market will result in an accelerated reduction of our free allowances, resulting in a possible shortfall in EU Allowances (EUAs) needed to meet our compliance needs under ETS by 2030, along with higher market prices for purchased allowances. These and other future regulations could result in increased costs, additional capital expenditures, and/or restrictions on operations.

(3.1.1.17) Are you able to quantify the financial effect of the risk?

Select from:

Yes

(3.1.1.21) Anticipated financial effect figure in the medium-term – minimum (currency)

0

(3.1.1.22) Anticipated financial effect figure in the medium-term – maximum (currency)

150000000

(3.1.1.25) Explanation of financial effect figure

*Our forecast looks at a period to 2030. By the end of 2030 (ETS Phase IV), we expect to have a shortfall of up to 1 million EUAs, depending on several factors, including the impact of dynamic allocation and the timeline for the inclusion of our products within the scope of CBAM. On May 8, 2024, we announced the formal launch of a strategic review of our European assets. The outcome of this strategic review will also impact the availability of EUAs for the remainder of the Phase IV period. While our current planning includes an average EUA price of 95 EUR per EUA, we expect those prices to increase up to 150 EUR per ton by 2030. Our medium-term financial effect figure is calculated as follows: Expected shortfall of EUAs to 2030 (end of Phase IV): from 0 to 1 million EUAs. Expected price of EUAs in 2030: up to 150 EUR per ton. Calculation of medium-term financial effect figure: 0 to 1 million EUAs shortfall * 150 EUR per ton from 0 (minimum) to 150 million EUR (maximum).*

(3.1.1.26) Primary response to risk

Compliance, monitoring and targets

Other compliance, monitoring or target, please specify :Deployment of site-level emission reduction projects

(3.1.1.27) Cost of response to risk

28704700

(3.1.1.28) Explanation of cost calculation

*Explanation of cost: Cost calculation represents the results of a case study in Wesseling. In the case study, the reduction in onsite energy production due to the phaseout of coal will require an increase in the volume of purchased electricity. We estimate the increase in purchased electricity will be approximately 90,000MWh per year. Assuming a cost of electricity of 257.83 USD per MWh (based on 2022 prices), the additional electricity demand will correspond to an annual cost increase of 23,204,700USD per year. We also estimate annual cost linked to the purchase of steam from third-party to be approximately 5,500,000 USD per year, bringing the total cost of response to 28,704,700USD per year ($90,000 * 257.83 + 5,000,000 = 28,704,700$ USD). While this number represents an anticipated increased cost associated with the project, the project also allows us to reduce our operating spend on fuels and maintenance and is expected to result in a net cost savings.*

(3.1.1.29) Description of response

Case study Situation: We anticipate an increase in our indirect operating costs due to regulatory developments under the EU ETS. As part of our climate ambition, we have committed to reaching net zero emissions in our scopes 1 and 2 by 2050, with an interim target of a 42% reduction by 2030. We have put in place an ambitious reduction program to meet this commitment, including plans for our European manufacturing assets. Task: Our corporate and manufacturing teams in Europe are tasked with the identification, development, and implementation of site emission reduction initiatives, with the double objective of contributing to our overall plan to meet our 2030 and 2050 targets and reducing our exposure to the risk of increased cost of EU ETS allowances (EUAs), which could negatively impact our indirect operating costs. These initiatives include energy efficiency and process optimization, switching to lower carbon intensive fuels including hydrogen, electrification of process equipment, and capturing, reusing, and/or storing CO₂. Action: As part of these efforts, our dedicated team at our largest European site in Wesseling, Germany has developed a project to phase out the use of coal from our utilities to produce energy onsite. In parallel, LyondellBasell has been working with a third party neighbor of our Wesseling site on an agreement to purchase high-pressure steam generated from natural gas, and to connect with their site in order to optimize steam supply and demand between both sites. Result: Starting in 2024, we estimate this new steam purchase agreement, coupled with the phaseout of the use of coal, will reduce GHG emissions by approximately 150kt per year at our Wesseling site. This project will be an important part of our approach to reducing GHG emissions at our Wesseling site and will help meet our corporate 2030 and 2050 goals. This project is also anticipated to reduce our exposure to increased indirect operating costs linked to increases in EUA prices.

[Add row]

(3.3) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

	Water-related regulatory violations	Comment
	Select from: <input checked="" type="checkbox"/> No	<i>No water-related fines or enforcement orders for the reporting period.</i>

[Fixed row]

(3.5.2) Provide details of each Emissions Trading Scheme (ETS) your organization is regulated by.

EU ETS

(3.5.2.1) % of Scope 1 emissions covered by the ETS

24.23

(3.5.2.2) % of Scope 2 emissions covered by the ETS

7.39

(3.5.2.3) Period start date

12/31/2022

(3.5.2.4) Period end date

12/30/2023

(3.5.2.5) Allowances allocated

3180367

(3.5.2.6) Allowances purchased

476625

(3.5.2.7) Verified Scope 1 emissions in metric tons CO2e

3723308

(3.5.2.8) Verified Scope 2 emissions in metric tons CO2e

515120

(3.5.2.9) Details of ownership

Select from:

Facilities we own and operate

(3.5.2.10) Comment

[Fixed row]

(3.6) Have you identified any environmental opportunities which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future?

Climate change

(3.6.1) Environmental opportunities identified

Select from:

Yes, we have identified opportunities, and some/all are being realized

Forests

(3.6.1) Environmental opportunities identified

Select from:

No

(3.6.2) Primary reason why your organization does not consider itself to have environmental opportunities

Select from:

Opportunities exist, but none anticipated to have a substantive effect on organization

(3.6.3) Please explain

Identifying forest-related opportunities is not an immediate business priority, but non-substantive opportunities are expected in our value chain We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Water

(3.6.1) Environmental opportunities identified

Select from:

No

(3.6.2) Primary reason why your organization does not consider itself to have environmental opportunities

Select from:

Opportunities exist, but none anticipated to have a substantive effect on organization

(3.6.3) Please explain

Many of the chemicals and plastics we supply help create innovative products that meet the needs of modern society and contribute to a sustainable future. Our products are found in nearly every sector of the economy. Our products make irrigation more efficient, reducing water leakage as well as make pipes that are lighter and more durable; making installation faster and easier, reducing water use, preventing water leakage, and protecting water purity.

[Fixed row]

(3.6.1) Provide details of the environmental opportunities identified which have had a substantive effect on your organization in the reporting year, or are anticipated to have a substantive effect on your organization in the future.

Climate change

(3.6.1.1) Opportunity identifier

Select from:

Opp1

(3.6.1.2) Commodity

Select all that apply

Not applicable

(3.6.1.3) Opportunity type and primary environmental opportunity driver

Resource efficiency

- Increased efficiency of production and/or distribution processes

(3.6.1.4) Value chain stage where the opportunity occurs

Select from:

- Direct operations

(3.6.1.5) Country/area where the opportunity occurs

Select all that apply

- Germany

(3.6.1.8) Organization specific description

As part of our corporate target to reach net zero GHG emissions by 2050 for Scopes 1 and 2, and our interim 2030 target to reduce Scopes 1 and 2 GHG emissions by 42%, we have put in place an ambitious emission reduction program, including plans for our European assets, which relies on several levers including improving energy efficiency, switching to lower carbon intensive fuels including hydrogen, electrifying process equipment, and capturing, reusing and/or storing CO2. As we develop plans to reduce GHG emissions at our sites, projects under these plans will not only contribute toward our 2030 goal, but also, in some cases, reduce our energy and fuel demand, thereby reducing direct operating costs. For example, our site roadmap for Wesseling includes a number of projects to reduce site GHG emissions, including an approximately 150kt per year GHG emission reduction project involving the shutdown of a coal-fueled onsite boiler. We estimate we will reduce our fuel consumption at our power plant in Wesseling by approximately 480,000MWh per year due to this project. Taking into consideration other costs and savings associated with the project, we anticipate this project will result in net savings of approximately 36MM USD per year.

(3.6.1.9) Primary financial effect of the opportunity

Select from:

- Reduced direct costs

(3.6.1.10) Time horizon over which the opportunity is anticipated to have a substantive effect on the organization

- Short-term

(3.6.1.11) Likelihood of the opportunity having an effect within the anticipated time horizon

Select from:

Virtually certain (99–100%)

(3.6.1.12) Magnitude

Select from:

Medium

(3.6.1.14) Anticipated effect of the opportunity on the financial position, financial performance and cash flows of the organization in the selected future time horizons

The financial impact figure represents the estimated cost savings from reduced energy and fuel demand as well as decreased maintenance needs, less the increase in costs associated with an increase in purchased electricity, associated with anticipated operating changes in conjunction with the emission reduction project at Wesseling described in this case study.

(3.6.1.15) Are you able to quantify the financial effects of the opportunity?

Select from:

Yes

(3.6.1.17) Anticipated financial effect figure in the short-term - minimum (currency)

35769700

(3.6.1.18) Anticipated financial effect figure in the short-term – maximum (currency)

35769700

(3.6.1.23) Explanation of financial effect figures

*The financial impact figure represents the estimated cost savings from reduced energy and fuel demand as well as decreased maintenance needs, less the increase in costs associated with an increase in purchased electricity, associated with anticipated operating changes in conjunction with the emission reduction project at Wesseling described in this case study. The figure of USD35,769,700 is based on the following. We estimate that the implementation of the Wesseling coal-fired boiler shutdown project will result in reduced energy and fuel demand of approximately 480,000MWh per year. Assuming a fuel market price of 127.03USD per MWh (based on an average of 2022 market prices across different regions), this reduction in energy and fuel demand would result in a savings of 60,974,400USD per year. Since the project will also result in a decrease in onsite electricity production, additional electricity will need to be procured. We estimate the additional purchased electricity need will be approximately 90,000 MWh per year. Assuming an electricity market price of 257.83USD per MWh (based on average 2022 prices), the additional purchased electricity needs are estimated to cost 23,204,700USD per year. The project includes the need to purchase emergency steam from third-party due to the shutdown of the onsite boiler. We estimate these costs to be approximately 5,500,000USD per year. Finally, implementation of the project is estimated to reduce maintenance costs by approximately 3.5MM USD per year. The total impact figure was calculated as follows: $(480,000\text{MWh} * 127.03\text{USD/MWh}) - (90,000\text{MWh} * 257.83 \text{ USD/MWh}) - 5,500,000\text{USD} - 3.5\text{MM USD} = 35,769,700 \text{ USD}$.*

(3.6.1.24) Cost to realize opportunity

28704700

(3.6.1.25) Explanation of cost calculation

*In this Wesseling case study, the reduction in onsite energy production due to the phaseout of coal will require an increase in the volume of purchased electricity and the purchase of emergency steam from third-party. We estimate the additional purchased electricity need will be approximately 90,000 MWh per year. Assuming an electricity market price of 257.83 USD per MWh (based on average 2022 prices), the additional purchased electricity needs are estimated to cost 23,204,700 USD per year. The project includes the need to purchase emergency steam from third-party due to the shutdown of the onsite boiler. We estimate these costs to be approximately 5,500,000 USD per year. The total cost of response was calculated as follows: $(90,000 * 257.83) + 5,500,000 = 28,704,700 \text{ USD}$.*

(3.6.1.26) Strategy to realize opportunity

Case study Situation: We anticipate an increase in our indirect operating costs due to regulatory developments under the EU ETS. As part of our climate ambition, we have committed to reaching net zero emissions in our scopes 1 and 2 by 2050, with an interim target of a 42% reduction by 2030, relative to a 2020 baseline. We have put in place an ambitious reduction program to meet this commitment, including plans for our European manufacturing assets. Task: Our corporate and manufacturing site teams in Europe are tasked with the identification, development, and implementation of site emission reduction initiatives, both by identifying energy saving initiatives and emission reducing initiatives, the former helping to reduce our overall site energy demand and energy-related direct operating costs. Action: As part of these efforts, our dedicated team at our largest European site in Wesseling, Germany has developed a project to phase out the use of coal from our utilities to produce energy onsite. In parallel, LyondellBasell has been working with third-party on an agreement to purchase high-pressure steam generated from natural gas by third-party, connecting with their neighboring site and optimizing steam supply and demand between both sites. Result: Starting in 2024, we estimate this new steam purchase agreement with third-party, coupled with the phaseout of the use of coal, will reduce GHG emissions by approximately 150kt per year at our

Wesseling site. As part of this project, we estimate we will reduce the overall fuel consumption at the site by 480,000 MWh per year. This project will be an important part of our approach to reducing GHG emissions at our Wesseling site and helping meet our corporate 2030 and 2050 goals. This project is also estimated to reduce the overall site energy demand and contribute to reducing overall energy-related direct operating costs.

[Add row]

(3.6.2) Provide the amount and proportion of your financial metrics in the reporting year that are aligned with the substantive effects of environmental opportunities.

Climate change

(3.6.2.1) Financial metric

Select from:

OPEX

(3.6.2.2) Amount of financial metric aligned with opportunities for this environmental issue (unit currency as selected in 1.2)

0

(3.6.2.3) % of total financial metric aligned with opportunities for this environmental issue

Select from:

Less than 1%

(3.6.2.4) Explanation of financial figures

The opportunity disclosed on our reduced cost savings due to optimized energy production processes is not expected to have any significant impact on our financial performance during this reporting year. The project is currently under development for the construction of the infrastructure.

[Add row]

C4. Governance

(4.1) Does your organization have a board of directors or an equivalent governing body?

(4.1.1) Board of directors or equivalent governing body

Select from:

Yes

(4.1.2) Frequency with which the board or equivalent meets

Select from:

More frequently than quarterly

(4.1.3) Types of directors your board or equivalent is comprised of

Select all that apply

Executive directors or equivalent

Independent non-executive directors or equivalent

(4.1.4) Board diversity and inclusion policy

Select from:

Yes, and it is publicly available

(4.1.5) Briefly describe what the policy covers

As outlined in our Board Profile, our Board considers diversity a priority and seeks representation across a range of attributes, including gender, gender identity, race, ethnicity and nationality. The Nominating and Governance Committee includes, and directs any outside consultants to include, women and minority candidates in the pool from which Member candidates are selected. The Board seeks to maintain at least one-third female Members and to increase the racial and ethnic diversity of the Board over time.

(4.1.6) Attach the policy (optional)

board-profile 2024.pdf

[Fixed row]

(4.1.1) Is there board-level oversight of environmental issues within your organization?

	Board-level oversight of this environmental issue
Climate change	Select from: <input checked="" type="checkbox"/> Yes
Forests	Select from: <input checked="" type="checkbox"/> Yes
Water	Select from: <input checked="" type="checkbox"/> Yes
Biodiversity	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(4.1.2) Identify the positions (do not include any names) of the individuals or committees on the board with accountability for environmental issues and provide details of the board's oversight of environmental issues.

Climate change

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

Board-level committee

(4.1.2.2) Positions' accountability for this environmental issue is outlined in policies applicable to the board

Select from:

Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

Other policy applicable to the board, please specify :Health, Safety, Environmental, and Sustainability Committee Charter

(4.1.2.4) Frequency with which this environmental issue is a scheduled agenda item

Select from:

Scheduled agenda item in some board meetings – at least annually

(4.1.2.5) Governance mechanisms into which this environmental issue is integrated

Select all that apply

- Reviewing and guiding annual budgets
- Overseeing the setting of corporate targets
- Monitoring progress towards corporate targets
- Approving corporate policies and/or commitments
- Overseeing and guiding public policy engagement
- Overseeing and guiding acquisitions, mergers, and divestitures
- Monitoring compliance with corporate policies and/or commitments
- Overseeing and guiding the development of a climate transition plan
- Reviewing and guiding the assessment process for dependencies, impacts, risks, and opportunities
- Approving and/or overseeing employee incentives
- Overseeing and guiding major capital expenditures
- Overseeing reporting, audit, and verification processes
- Monitoring the implementation of a climate transition plan
- Overseeing and guiding the development of a business strategy

(4.1.2.7) Please explain

Our Board is committed to sustainability, social responsibility, and good corporate governance and delegates oversight to its committees. Our Health, Safety, Environmental, and Sustainability (HSE&S) Committee oversees risks and opportunities related to safety, sustainability and climate change. Management reports on key sustainability and climate topics and initiatives at each regularly scheduled HSE&S Committee meeting, and the Board participates in a deep dive on sustainability strategy and actions at least annually. During the Board's annual strategy meeting in July 2023, the Board reviewed the Company's strategy, progress, and programs related to its goals on sustainability, climate and the circular economy, and the HSE&S Committee reviewed updates to the Company's ESG dashboard, which summarizes key environmental, social and governance metrics and activities, at each of its regularly scheduled meetings. Both the HSE&S and the C&TD Committees report back on these topics to the general Board of Directors. In addition, the HSE&S Committee provides oversight of the company's sustainability programs, initiatives, and activities; reviews with management relevant sustainability risks and trends; and monitors the company's progress on sustainability targets, ambitions, and reporting. Lastly, HSE&S Committee's responsibility is to review and approve the scope of the company's health, safety, and environmental audit program; regularly monitor audit program results; and review and approve the annual budget for the health, safety, and environmental audit program. Our Compensation and Talent Development (C&TD) Committee oversees our talent management practices, including compensation policies and practices, succession planning, and progress towards sustainability performance goals for short-term incentive compensation (in conjunction with the HSE&S Committee). The C&TD Committee monitors the Company's compensation policies and practices to determine whether its risk management objectives are being met with respect to incentivizing its employees.

Forests

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

- Board-level committee

(4.1.2.2) Positions' accountability for this environmental issue is outlined in policies applicable to the board

Select from:

- Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

- Other policy applicable to the board, please specify :Health, Safety, Environmental, and Sustainability Committee Charter

(4.1.2.4) Frequency with which this environmental issue is a scheduled agenda item

Select from:

- Sporadic – agenda item as important matters arise

(4.1.2.5) Governance mechanisms into which this environmental issue is integrated

Select all that apply

- Reviewing and guiding the assessment process for dependencies, impacts, risks, and opportunities

(4.1.2.7) Please explain

Our Board is committed to sustainability, social responsibility, and good corporate governance and delegates oversight to its committees. Our Health, Safety, Environmental, and Sustainability (HSE&S) Committee oversees risks and opportunities related to safety, sustainability and climate change. Management reports on key sustainability and climate topics and initiatives at each regularly scheduled HSE&S Committee meeting, and the Board participates in a deep dive on sustainability strategy and actions at least annually. During the Board's annual strategy meeting in July 2023, the Board reviewed the Company's strategy, progress, and programs related to its goals on sustainability, climate and the circular economy, and the HSE&S Committee reviewed updates to the Company's ESG

dashboard, which summarizes key environmental, social and governance metrics and activities, at each of its regularly scheduled meetings. Both the HSE&S and the C&TD Committees report back on these topics to the general Board of Directors. In addition, the HSE&S Committee provides oversight of the company's sustainability programs, initiatives, and activities; reviews with management relevant sustainability risks and trends; and monitors the company's progress on sustainability targets, ambitions, and reporting. Lastly, HSE&S Committee's responsibility is to review and approve the scope of the company's health, safety, and environmental audit program; regularly monitor audit program results; and review and approve the annual budget for the health, safety, and environmental audit program. Our Compensation and Talent Development (C&TD) Committee oversees our talent management practices, including compensation policies and practices, succession planning, and progress towards sustainability performance goals for short-term incentive compensation (in conjunction with the HSE&S Committee). The C&TD Committee monitors the Company's compensation policies and practices to determine whether its risk management objectives are being met with respect to incentivizing its employees.

Water

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

- Board-level committee

(4.1.2.2) Positions' accountability for this environmental issue is outlined in policies applicable to the board

Select from:

- Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

- Other policy applicable to the board, please specify :Health, Safety, Environmental, and Sustainability Committee Charter

(4.1.2.4) Frequency with which this environmental issue is a scheduled agenda item

Select from:

- Sporadic – agenda item as important matters arise

(4.1.2.5) Governance mechanisms into which this environmental issue is integrated

Select all that apply

- Reviewing and guiding the assessment process for dependencies, impacts, risks, and opportunities

(4.1.2.7) Please explain

Our Board is committed to sustainability, social responsibility, and good corporate governance and delegates oversight to its committees. Our Health, Safety, Environmental, and Sustainability (HSE&S) Committee oversees risks and opportunities related to safety, sustainability and climate change. Management reports on key sustainability and climate topics and initiatives at each regularly scheduled HSE&S Committee meeting, and the Board participates in a deep dive on sustainability strategy and actions at least annually. During the Board's annual strategy meeting in July 2023, the Board reviewed the Company's strategy, progress, and programs related to its goals on sustainability, climate and the circular economy, and the HSE&S Committee reviewed updates to the Company's ESG dashboard, which summarizes key environmental, social and governance metrics and activities, at each of its regularly scheduled meetings. Both the HSE&S and the C&TD Committees report back on these topics to the general Board of Directors. In addition, the HSE&S Committee provides oversight of the company's sustainability programs, initiatives, and activities; reviews with management relevant sustainability risks and trends; and monitors the company's progress on sustainability targets, ambitions, and reporting. Lastly, HSE&S Committee's responsibility is to review and approve the scope of the company's health, safety, and environmental audit program; regularly monitor audit program results; and review and approve the annual budget for the health, safety, and environmental audit program. Our Compensation and Talent Development (C&TD) Committee oversees our talent management practices, including compensation policies and practices, succession planning, and progress towards sustainability performance goals for short-term incentive compensation (in conjunction with the HSE&S Committee). The C&TD Committee monitors the Company's compensation policies and practices to determine whether its risk management objectives are being met with respect to incentivizing its employees.

Biodiversity

(4.1.2.1) Positions of individuals or committees with accountability for this environmental issue

Select all that apply

- Board-level committee

(4.1.2.2) Positions' accountability for this environmental issue is outlined in policies applicable to the board

Select from:

- Yes

(4.1.2.3) Policies which outline the positions' accountability for this environmental issue

Select all that apply

- Other policy applicable to the board, please specify : Health, Safety, Environmental, and Sustainability Committee Charter

(4.1.2.4) Frequency with which this environmental issue is a scheduled agenda item

Select from:

- Sporadic – agenda item as important matters arise

(4.1.2.5) Governance mechanisms into which this environmental issue is integrated

Select all that apply

- Reviewing and guiding the assessment process for dependencies, impacts, risks, and opportunities

(4.1.2.7) Please explain

Our Board is committed to sustainability, social responsibility, and good corporate governance and delegates oversight to its committees. Our Health, Safety, Environmental, and Sustainability (HSE&S) Committee oversees risks and opportunities related to safety, sustainability and climate change. Management reports on key sustainability and climate topics and initiatives at each regularly scheduled HSE&S Committee meeting, and the Board participates in a deep dive on sustainability strategy and actions at least annually. During the Board's annual strategy meeting in July 2023, the Board reviewed the Company's strategy, progress, and programs related to its goals on sustainability, climate and the circular economy, and the HSE&S Committee reviewed updates to the Company's ESG dashboard, which summarizes key environmental, social and governance metrics and activities, at each of its regularly scheduled meetings. Both the HSE&S and the C&TD Committees report back on these topics to the general Board of Directors. In addition, the HSE&S Committee provides oversight of the company's sustainability programs, initiatives, and activities; reviews with management relevant sustainability risks and trends; and monitors the company's progress on sustainability targets, ambitions, and reporting. Lastly, HSE&S Committee's responsibility is to review and approve the scope of the company's health, safety, and environmental audit program; regularly monitor audit program results; and review and approve the annual budget for the health, safety, and environmental audit program. Our Compensation and Talent Development (C&TD) Committee oversees our talent management practices, including compensation policies and practices, succession planning, and progress towards sustainability performance goals for short-term incentive compensation (in conjunction with the HSE&S Committee). The C&TD Committee monitors the Company's compensation policies and practices to determine whether its risk management objectives are being met with respect to incentivizing its employees.

[Fixed row]

(4.2) Does your organization's board have competency on environmental issues?

Climate change

(4.2.1) Board-level competency on this environmental issue

Select from:

- Yes

(4.2.2) Mechanisms to maintain an environmentally competent board

Select all that apply

- Consulting regularly with an internal, permanent, subject-expert working group
- Integrating knowledge of environmental issues into board nominating process
- Having at least one board member with expertise on this environmental issue

(4.2.3) Environmental expertise of the board member

Experience

- Executive-level experience in a role focused on environmental issues
- Management-level experience in a role focused on environmental issues
- Experience in an organization that is exposed to environmental-scrutiny and is going through a sustainability transition
- Active member of an environmental committee or organization

Forests

(4.2.1) Board-level competency on this environmental issue

Select from:

- Yes

(4.2.2) Mechanisms to maintain an environmentally competent board

Select all that apply

- Consulting regularly with an internal, permanent, subject-expert working group
- Integrating knowledge of environmental issues into board nominating process

Water

(4.2.1) Board-level competency on this environmental issue

Select from:

- Yes

(4.2.2) Mechanisms to maintain an environmentally competent board

Select all that apply

- Consulting regularly with an internal, permanent, subject-expert working group
- Integrating knowledge of environmental issues into board nominating process

[Fixed row]

(4.3) Is there management-level responsibility for environmental issues within your organization?

	Management-level responsibility for this environmental issue
Climate change	<i>Select from:</i> <input checked="" type="checkbox"/> Yes
Forests	<i>Select from:</i> <input checked="" type="checkbox"/> Yes
Water	<i>Select from:</i> <input checked="" type="checkbox"/> Yes
Biodiversity	<i>Select from:</i> <input checked="" type="checkbox"/> Yes

[Fixed row]

(4.3.1) Provide the highest senior management-level positions or committees with responsibility for environmental issues (do not include the names of individuals).

Climate change

(4.3.1.1) Position of individual or committee with responsibility

Executive level

- Chief Executive Officer (CEO)

(4.3.1.2) Environmental responsibilities of this position

Dependencies, impacts, risks and opportunities

- Assessing environmental dependencies, impacts, risks, and opportunities
- Assessing future trends in environmental dependencies, impacts, risks, and opportunities
- Managing environmental dependencies, impacts, risks, and opportunities

Engagement

- Managing engagement in landscapes and/or jurisdictions
- Managing public policy engagement related to environmental issues
- Managing supplier compliance with environmental requirements
- Managing value chain engagement related to environmental issues

Policies, commitments, and targets

- Monitoring compliance with corporate environmental policies and/or commitments
- Measuring progress towards environmental corporate targets
- Measuring progress towards environmental science-based targets
- Setting corporate environmental policies and/or commitments
- Setting corporate environmental targets

Strategy and financial planning

- Developing a climate transition plan
- Implementing a climate transition plan
- Conducting environmental scenario analysis
- Managing annual budgets related to environmental issues
- Implementing the business strategy related to environmental issues
- Developing a business strategy which considers environmental issues
- Managing environmental reporting, audit, and verification processes
- Managing acquisitions, mergers, and divestitures related to environmental issues
- Managing major capital and/or operational expenditures relating to environmental issues
- Managing priorities related to innovation/low-environmental impact products or services (including R&D)

(4.3.1.4) Reporting line

Select from:

- Reports to the board directly

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

- Quarterly

(4.3.1.6) Please explain

Our Chief Executive Officer (CEO) has overall responsibility for our climate change program as part of our wider sustainability strategy. The CEO heads the company's Executive Committee, many members of which play an active role in addressing strategic or operational matters concerning climate change. Our CEO oversees the company's ESG profile through regular reporting and discussion on key topics and initiatives among members of his Executive Committee comprised of senior executives that lead businesses and functions, including our EVP, Operational Excellence and HSE. Along with our EVP, Operational Excellence and HSE, SVP, Net Zero Transition Strategy and Chief Sustainability Officer (CSO), the CEO provides regular briefings to the Board concerning strategy and progress regarding climate initiatives. Quarterly meetings are scheduled with the CEO and members of the Executive Committee to review progress against our climate targets and related programs and initiatives.

Forests

(4.3.1.1) Position of individual or committee with responsibility

Executive level

- Chief Executive Officer (CEO)

(4.3.1.2) Environmental responsibilities of this position

Dependencies, impacts, risks and opportunities

- Assessing environmental dependencies, impacts, risks, and opportunities
- Assessing future trends in environmental dependencies, impacts, risks, and opportunities
- Managing environmental dependencies, impacts, risks, and opportunities

Engagement

- Managing engagement in landscapes and/or jurisdictions
- Managing public policy engagement related to environmental issues
- Managing supplier compliance with environmental requirements
- Managing value chain engagement related to environmental issues

Policies, commitments, and targets

- Monitoring compliance with corporate environmental policies and/or commitments
- Measuring progress towards environmental corporate targets
- Measuring progress towards environmental science-based targets
- Setting corporate environmental policies and/or commitments
- Setting corporate environmental targets

Strategy and financial planning

- Developing a climate transition plan
- Implementing a climate transition plan
- Conducting environmental scenario analysis

- Managing annual budgets related to environmental issues
- Implementing the business strategy related to environmental issues
- Developing a business strategy which considers environmental issues
- Managing environmental reporting, audit, and verification processes
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- Managing major capital and/or operational expenditures relating to environmental issues
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(4.3.1.4) Reporting line

Select from:

- Reports to the board directly

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

- Quarterly

(4.3.1.6) Please explain

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Water

(4.3.1.1) Position of individual or committee with responsibility

Executive level

- Chief Executive Officer (CEO)

(4.3.1.2) Environmental responsibilities of this position

Dependencies, impacts, risks and opportunities

- Assessing environmental dependencies, impacts, risks, and opportunities
- Assessing future trends in environmental dependencies, impacts, risks, and opportunities
- Managing environmental dependencies, impacts, risks, and opportunities

Engagement

- Managing engagement in landscapes and/or jurisdictions
- Managing public policy engagement related to environmental issues
- Managing supplier compliance with environmental requirements
- Managing value chain engagement related to environmental issues

Policies, commitments, and targets

- Monitoring compliance with corporate environmental policies and/or commitments
- Measuring progress towards environmental corporate targets
- Measuring progress towards environmental science-based targets
- Setting corporate environmental policies and/or commitments
- Setting corporate environmental targets

Strategy and financial planning

- Developing a climate transition plan
- Implementing a climate transition plan
- Conducting environmental scenario analysis

- Managing annual budgets related to environmental issues
- Implementing the business strategy related to environmental issues
- Developing a business strategy which considers environmental issues
- Managing environmental reporting, audit, and verification processes
- Managing acquisitions, mergers, and divestitures related to environmental issues
- Managing major capital and/or operational expenditures relating to environmental issues
- Managing priorities related to innovation/low-environmental impact products or services (including R&D)

(4.3.1.4) Reporting line

Select from:

- Reports to the board directly

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

- Quarterly

(4.3.1.6) Please explain

Our Chief Executive Officer (CEO) has overall responsibility for our climate change program as part of our wider sustainability strategy. The CEO heads the company's Executive Committee, many members of which play an active role in addressing strategic or operational matters concerning climate change. Our CEO oversees the company's ESG profile through regular reporting and discussion on key topics and initiatives among members of his Executive Committee comprised of senior executives that lead businesses and functions, including our EVP, Operational Excellence and HSE. Along with our EVP, Operational Excellence and HSE, SVP, Net Zero Transition Strategy and Chief Sustainability Officer (CSO), the CEO provides regular briefings to the Board concerning strategy and progress regarding climate initiatives. Quarterly meetings are scheduled with the CEO and members of the Executive Committee to review progress against our climate targets and related programs and initiatives.

Biodiversity

(4.3.1.1) Position of individual or committee with responsibility

Executive level

- Chief Executive Officer (CEO)

(4.3.1.2) Environmental responsibilities of this position

Dependencies, impacts, risks and opportunities

- Assessing environmental dependencies, impacts, risks, and opportunities
- Assessing future trends in environmental dependencies, impacts, risks, and opportunities
- Managing environmental dependencies, impacts, risks, and opportunities

Engagement

- Managing engagement in landscapes and/or jurisdictions
- Managing public policy engagement related to environmental issues
- Managing supplier compliance with environmental requirements
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Policies, commitments, and targets

- Monitoring compliance with corporate environmental policies and/or commitments
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- Setting corporate environmental targets

Strategy and financial planning

- Developing a climate transition plan
- Implementing a climate transition plan
- Conducting environmental scenario analysis

- Managing annual budgets related to environmental issues
- Implementing the business strategy related to environmental issues
- Developing a business strategy which considers environmental issues
- Managing environmental reporting, audit, and verification processes
- Managing acquisitions, mergers, and divestitures related to environmental issues
- Managing major capital and/or operational expenditures relating to environmental issues
- Managing priorities related to innovation/low-environmental impact products or services (including R&D)

(4.3.1.4) Reporting line

Select from:

- Reports to the board directly

(4.3.1.5) Frequency of reporting to the board on environmental issues

Select from:

- Quarterly

(4.3.1.6) Please explain

Our Chief Executive Officer (CEO) has overall responsibility for our climate change program as part of our wider sustainability strategy. The CEO heads the company's Executive Committee, many members of which play an active role in addressing strategic or operational matters concerning climate change. Our CEO oversees the company's ESG profile through regular reporting and discussion on key topics and initiatives among members of his Executive Committee comprised of senior executives that lead businesses and functions, including our EVP, Operational Excellence and HSE. Along with our EVP, Operational Excellence and HSE, SVP, Net Zero Transition Strategy and Chief Sustainability Officer (CSO), the CEO provides regular briefings to the Board concerning strategy and progress regarding climate initiatives. Quarterly meetings are scheduled with the CEO and members of the Executive Committee to review progress against our climate targets and related programs and initiatives.

[Add row]

(4.5) Do you provide monetary incentives for the management of environmental issues, including the attainment of targets?

Climate change

(4.5.1) Provision of monetary incentives related to this environmental issue

Select from:

Yes

(4.5.2) % of total C-suite and board-level monetary incentives linked to the management of this environmental issue

10

(4.5.3) Please explain

In 2023, ESG metrics continued to account for 30% of the total payout under the STI program (20% Safety and 10% Sustainability), reflecting the Company's ongoing commitment to safety, accountability and timely delivery of our climate and circularity goals. Under our sustainability metric, payout is based on the accomplishment of key milestones approved by the Compensation and Talent Development (C&TD) Committee. We believe that the sustainability metric incentivizes accountability and timely delivery of our climate and circularity goals. In 2023, we focused on three milestones: (1) execute Power Purchase Agreements with cumulative volume from January 1, 2022 of 700 GW of renewable electricity capacity; (2) leverage transformation projects to improve energy efficiency by 1% from a 2021 baseline; and (3) produce and market 150kt of recycled and renewable-based polymers in 2023.

Forests

(4.5.1) Provision of monetary incentives related to this environmental issue

Select from:

No, and we do not plan to introduce them in the next two years

(4.5.3) Please explain

Forests have not been deemed a material issue to date. Therefore, we do not provide incentives to C-suite employees or board members for the management of forest-related issues.

Water

(4.5.1) Provision of monetary incentives related to this environmental issue

Select from:

No, and we do not plan to introduce them in the next two years

(4.5.3) Please explain

*We do not provide incentives to C-suite employees or board members for management of water-related issues.
[Fixed row]*

(4.5.1) Provide further details on the monetary incentives provided for the management of environmental issues (do not include the names of individuals).

Climate change

(4.5.1.1) Position entitled to monetary incentive

Board or executive level

Corporate executive team

(4.5.1.2) Incentives

Select all that apply

Bonus - % of salary

(4.5.1.3) Performance metrics

Targets

Progress towards environmental targets

Emission reduction

Increased share of renewable energy in total energy consumption

Resource use and efficiency

Energy efficiency improvement

(4.5.1.4) Incentive plan the incentives are linked to

Select from:

Short-Term Incentive Plan, or equivalent, only (e.g. contractual annual bonus)

(4.5.1.5) Further details of incentives

Our Short-Term Incentive Plan includes a component tied to corporate performance defined during each year. In 2023, ESG metrics continued to account for 30% of the total payout under the STI program (20% Safety and 10% Sustainability), reflecting the Company’s ongoing commitment to safety, accountability and timely delivery of our climate and circularity goals. Under our sustainability metric, payout is based on the accomplishment of key milestones approved by the Compensation and Talent Development (C&TD) Committee. We believe that the sustainability metric incentivizes accountability and timely delivery of our climate and circularity goals. In 2023, we focused on three milestones: (1) execute Power Purchase Agreements with cumulative volume from January 1, 2022 of 700 GW of renewable electricity capacity; (2) leverage transformation projects to improve energy efficiency by 1% from a 2021 baseline; and (3) produce and market 150kt of recycled and renewable-based polymers in 2023.

(4.5.1.6) How the position’s incentives contribute to the achievement of your environmental commitments and/or climate transition plan

To tackle the global challenges of plastic waste and climate change, we set 2030 goals to reduce our scope 1 and 2 emissions by 42% and scope 3 emissions by 30%. We also set a goal to produce and market at least 2 million metric tons of recycled and renewable-based polymers annually by 2030. We believe that the sustainability metric incentivizes accountability and timely delivery of our climate and circularity goals. The C&TD Committee with support of the HSE&S Committee considers the Company’s achievement of key milestones supporting our sustainability goals. For 2023, the Committees set goals to achieve certain milestones, with target (100%) performance in 3 key metrics. Payout at 110% of target reflected the Company’s delivery on these goals.

[Add row]

(4.6) Does your organization have an environmental policy that addresses environmental issues?

	Does your organization have any environmental policies?
	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(4.6.1) Provide details of your environmental policies.

(4.6.1.1) Environmental issues covered

Select all that apply

- Climate change
- Forests
- Water

(4.6.1.2) Level of coverage

Select from:

- Organization-wide

(4.6.1.3) Value chain stages covered

Select all that apply

- Direct operations
- Upstream value chain
- Downstream value chain

(4.6.1.4) Explain the coverage

Our HSES Policy covers our commitments and how we will realize them. Our 2023 Sustainability Report provides detailed directions and goals regarding our environmental performance. In our 2023 Sustainability Report, the "Ending Plastic Waste" section outlines our strategies and objectives related to climate change and low carbon products, emphasizing our efforts to reduce plastic waste and promote circular economy practices. The "Taking Climate Action" section covers our policy on climate change, including our targets for reducing Scope 1, 2, and 3 greenhouse gas emissions, and procuring renewable sources of electricity. Our climate actions are aligned with the objectives of the Paris Agreement, aiming to limit global temperature rise to well below 2C above preindustrial levels and to pursue efforts to limit the temperature increase to 1.5C. The "Environment" section addresses our policies related to water use, availability and quality as well as biodiversity and ecosystem. In 2023, we committed to the UN CEO Water Mandate which drives continual progress for our water stewardship practice across areas such as direct operations, supply chain and watershed management, including consideration of reducing water withdrawal volumes. In line with SDG 6, we require sites to confirm annually that appropriate monitoring is being conducted in order to ensure water supplies are acceptable for use. The "Sustainable Procurement" section highlights our engagement with our suppliers.

(4.6.1.5) Environmental policy content

Environmental commitments

- Commitment to a circular economy strategy
- Commitment to comply with regulations and mandatory standards
- Commitment to take environmental action beyond regulatory compliance
- Commitment to stakeholder engagement and capacity building on environmental issues

Climate-specific commitments

- Commitment to net-zero emissions
- Commitment to not funding climate-denial or lobbying against climate regulations

Water-specific commitments

- Commitment to reduce or phase out hazardous substances
- Commitment to control/reduce/eliminate water pollution
- Commitment to reduce water withdrawal volumes
- Commitment to water stewardship and/or collective action

Social commitments

- Commitment to respect internationally recognized human rights

(4.6.1.6) Indicate whether your environmental policy is in line with global environmental treaties or policy goals

Select all that apply

- Yes, in line with the Paris Agreement
- Yes, in line with Sustainable Development Goal 6 on Clean Water and Sanitation

(4.6.1.7) Public availability

Select from:

- Publicly available

(4.6.1.8) Attach the policy

HSES Policy and 2023 Sustainability Report combined.pdf
[Add row]

(4.10) Are you a signatory or member of any environmental collaborative frameworks or initiatives?

(4.10.1) Are you a signatory or member of any environmental collaborative frameworks or initiatives?

Select from:

Yes

(4.10.2) Collaborative framework or initiative

Select all that apply

CEO Water Mandate

UN Global Compact

Sustainability •

Science-Based Targets Initiative (SBTi)

International Sustainability & Carbon Certification (ISCC)

Task Force on Climate-related Financial Disclosures (TCFD)

World Business Council for Sustainable Development (WBCSD)

Other, please specify :• **Alliance to End Plastic Waste • Together for Responsible Care • Ocean Plastic Leadership Network (OPLN) • Global Impact Coalition**

(4.10.3) Describe your organization's role within each framework or initiative

CEO Water Mandate In 2023, we committed to the UN CEO Water Mandate which drives continual progress for our water stewardship practice across the areas of direct operations, supply chain and watershed management, collective action, community engagement, policy and strategy, and transparency. United Nations Global Compact (UNGC) We are a member of UNGC and as such we aim to incorporate the Ten Principles into our strategies, policies and procedures. Responsible Care We are committed to Responsible Care, the global chemical industry's voluntary initiative to drive continuous improvement in safe chemicals management and achieve excellence in environmental, health, safety and security performance. Together for Sustainability (TfS) We have been an active member of TfS since 2022, participating in different initiatives to address scope 3 emissions and promote collaboration across the value chain. In 2023, the TfS General Assembly elected our Chief Procurement Officer Jennifer Jewson as President for a two-year term. Under her leadership, TfS aims to be a role model in reducing carbon footprints, driving circularity, conserving natural resources, and promoting social responsibility. Alliance to End Plastic Waste (AEPW) As a founding member of the AEPW since 2019, we have committed to the collective goal of addressing plastic waste in the environment. In 2023, we refocused our commitment to AEPW through more active

participation in workstreams in areas of digital innovation, circularity, plastic recycling and waste management projects. Ocean Plastic Leadership Network (OPLN) As a member of the OPLN, we were invited in 2023 to join Stewardship Committee of the OPLN's Progressive Advanced Recycling Forum. This Stewardship Committee was established to co-create a set of Responsible Production Guidelines for Progressive Advanced/Chemical Recycling to address important performance metrics on environmental protection, environmental justice, circularity and the waste hierarchy, operational transparency, and complementarity to mechanical recycling. These guidelines will support the ongoing negotiations for the Global Plastics Treaty. World Business Council for Sustainable Development (WBCSD) In 2023, we became an active member of the WBCSD, participating in workstreams focused on the Circular Products and Materials, Redefining Value, Climate Action, Nature Action and Equity Action pathways. Science-Based Targets Initiative (SBTi) The SBTi is developing a chemical sector-specific standard for defining science-based climate targets. Along with several industry peers, We are a member of the SBTi Expert Advisory Group (EAG), supporting the development of a chemical sector-specific standard for defining science-based climate targets. Our involvement includes providing input and feedback. Task Force on Climate-Related Financial Disclosures (TCFD) We utilize the TCFD framework to guide our approach to reporting and disclosure, underscoring our commitment to transparency. Global Impact Coalition In 2023 we became founding members of the Global Impact Coalition. This is a CEO-led platform of chemical industry leaders collaborating on projects to reduce emissions and advance circularity. International Sustainability & Carbon Certification (ISCC) We are a member of the ISCC Association.

[Fixed row]

(4.11) In the reporting year, did your organization engage in activities that could directly or indirectly influence policy, law, or regulation that may (positively or negatively) impact the environment?

(4.11.1) External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the environment

Select all that apply

- Yes, we engaged directly with policy makers
- Yes, we engaged indirectly through, and/or provided financial or in-kind support to a trade association or other intermediary organization or individual whose activities could influence policy, law, or regulation

(4.11.2) Indicate whether your organization has a public commitment or position statement to conduct your engagement activities in line with global environmental treaties or policy goals

Select from:

- Yes, we have a public commitment or position statement in line with global environmental treaties or policy goals

(4.11.3) Global environmental treaties or policy goals in line with public commitment or position statement

Select all that apply

- Paris Agreement

(4.11.4) Attach commitment or position statement

climate-advocacy-report.pdf

(4.11.5) Indicate whether your organization is registered on a transparency register

Select from:

- Yes

(4.11.6) Types of transparency register your organization is registered on

Select all that apply

- Mandatory government register
- Voluntary government register
- Non-government register

(4.11.7) Disclose the transparency registers on which your organization is registered & the relevant ID numbers for your organization

- EU Transparency Register under REG# 606644737858-48, - German Transparency Register under REG# R005987, via the German legal entity Basell Polyolefine GmbH - Center for Political Accountability's Zicklin Index under the name LyondellBasell Industries NV. - Reporting quarterly on U.S. federal lobbying activities with the Office of the Clerk of the U.S. House of Representatives and the Secretary of the U.S. Senate - available by searching for "Lyondell Chemical Company PAC" as a "Registrant"

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

We have a structured process in place to ensure that our external engagement activities align with our environmental commitments. We support effective policies to achieve the goals of the Paris Agreement and our global climate ambitions. Our strategy for achieving our climate ambitions relies on several key enablers. These

include stable positions and policies independent of political cycles and the development of necessary infrastructure and technologies to support the transition toward net zero. Our global climate policy positions serve as a framework to guide our advocacy with governments and within industry associations. Additionally, our climate policy positions also form the basis for reviewing and evaluating industry associations. This ensures that our participation in these associations and any associated advocacy efforts are consistent with our climate policy positions and environmental commitments.

[Fixed row]

(4.11.1) On what policies, laws, or regulations that may (positively or negatively) impact the environment has your organization been engaging directly with policy makers in the reporting year?

Row 1

(4.11.1.1) Specify the policy, law, or regulation on which your organization is engaging with policy makers

"Fit for 55" package (in particular the introduction of a Carbon Border Adjustment Mechanism, changes to the Emission Trading System (ETS), Renewable Energy Directive (RED III), carbon capture and storage/carbon capture and usage etc.).

(4.11.1.2) Environmental issues the policy, law, or regulation relates to

Select all that apply

Climate change

(4.11.1.3) Focus area of policy, law, or regulation that may impact the environment

Energy and renewables

Energy efficiency requirements

Green electricity tariffs/renewable energy PPAs

Low-carbon, non-renewable energy generation

Other energy and renewables, please specify :low carbon hydrogen production and consumption

(4.11.1.4) Geographic coverage of policy, law, or regulation

Regional

(4.11.1.5) Country/area/region the policy, law, or regulation applies to

Select all that apply

- Europe

(4.11.1.6) Your organization's position on the policy, law, or regulation

Select from:

- Support with minor exceptions

(4.11.1.7) Details of any exceptions and your organization's proposed alternative approach to the policy, law, or regulation

In Europe, LYB engaged in climate advocacy discussions in support of electrification technologies and low carbon hydrogen, availability of renewable or low carbon electricity and infrastructure, and development of CCUS. Discussions focused on key topics for the company, mostly linked to the "Fit for 55" package, in particular the introduction of a Carbon Border Adjustment Mechanism, changes to the Emission Trading System (ETS), Renewable Energy Directive (RED III), carbon capture and storage/carbon capture and usage etc.) and the circular economy strategy. In the case of the REDIII, we have advocated for specific exemptions for low carbon hydrogen as we see it as an important Net Zero lever in addition to renewable hydrogen. In the case of the CBAM, we have advocated for different treatment of chemicals due to complex value chains.

(4.11.1.8) Type of direct engagement with policy makers on this policy, law, or regulation

Select all that apply

- Ad-hoc meetings
- Participation in working groups organized by policy makers
- Participation in voluntary government programs
- Responding to consultations

(4.11.1.9) Funding figure your organization provided to policy makers in the reporting year relevant to this policy, law, or regulation (currency)

0

(4.11.1.10) Explain the relevance of this policy, law, or regulation to the achievement of your environmental commitments and/or transition plan, how this has informed your engagement, and how you measure the success of your engagement

We have supported legislative initiatives to increase the availability of high-quality low carbon hydrogen irrespective of its production route to support the reduction of GHG emissions at industrial sites, which we see key in order to develop a hydrogen economy and ensure the hydrogen volumes necessary for GHG emission reductions at the scale necessary. For example, the revision of the European Renewable Energy Directive (REDIII) was partly aligned with these objectives. The availability of low carbon hydrogen is a critical lever to realize our GHG emission reduction targets, and in particular our emission intensive plants (olefin steam cracking plants and I&D chemical plants). Carbon capture technologies are another key lever for LYB to reduce GHG-emissions, particularly from hard-to-abate emissions sources. Carbon capture allows us to take large steps to decarbonize, using mature technology. Investments in CCS must be made with urgency and accelerating these projects will require supportive governmental policies, subsidies, transparent and timely permit processing and improved community awareness and education. We therefore have supported the development of an EU Strategy for Industrial Carbon Management, and have responded to the public consultation from the EU Commission in August 2023.

(4.11.1.11) Indicate if you have evaluated whether your organization's engagement on this policy, law, or regulation is aligned with global environmental treaties or policy goals

Select from:

Yes, we have evaluated, and it is aligned

(4.11.1.12) Global environmental treaties or policy goals aligned with your organization's engagement on this policy, law or regulation

Select all that apply

Paris Agreement

Row 2

(4.11.1.1) Specify the policy, law, or regulation on which your organization is engaging with policy makers

National subsidy instruments linked to GHG-reduction technologies

(4.11.1.2) Environmental issues the policy, law, or regulation relates to

Select all that apply

- Climate change

(4.11.1.3) Focus area of policy, law, or regulation that may impact the environment

Financial mechanisms (e.g., taxes, subsidies, etc.)

- Carbon taxes
- Emissions trading schemes
- Subsidies for low-carbon, non-renewable energy projects
- Subsidies on infrastructure
- Other financial mechanisms, please specify :subsidies for low carbon technologies; subsidies or support schemes for renewable energy consumption; support for climate transition plans for industrial sites

(4.11.1.4) Geographic coverage of policy, law, or regulation

Select from:

- National

(4.11.1.5) Country/area/region the policy, law, or regulation applies to

Select all that apply

- France
- Germany
- Netherlands
- United States of America

(4.11.1.6) Your organization's position on the policy, law, or regulation

Select from:

- Support with minor exceptions

(4.11.1.7) Details of any exceptions and your organization's proposed alternative approach to the policy, law, or regulation

In France, we have been engaged in conversations with the government regarding possible roadmaps for our 2 sites (Berre and Fos-sur-Mer) to achieve net zero emissions by 2050 and associated infrastructure, policies, and subsidies that would support these roadmaps. We participated in the national government's initiative to establish ecological transition contracts for large industrial emitters in France. These non-binding agreements establish a framework of reference and discussion with the French government for its long-term decarbonization strategy, and are signed for two of LYB's large sites in France and contain specific decarbonization pathways, setting emission reduction targets. In the Netherlands, we have signed a non-binding document with the Dutch government, specifying potential Net Zero projects at some sites and the required government support for these projects. Support requirements include financial mechanisms, stimulation of demand for sustainable products, timely decision-making on permit applications, timely availability of low carbon fuels, adequate availability of renewable and low carbon electricity, CCUS and required infrastructure and a stable regulatory environment. In Germany, we engaged in climate advocacy discussions in support of low carbon hydrogen production and Carbon Capture and Storage (CCS). We have advocated for a stable regulatory framework that acknowledges the importance of CCS for hard-to-abate emissions and ensures legal certainty for (cross-border) transport of CO2 as well as storage. We have asked for the acknowledgement of low carbon hydrogen as a key net zero contributor, in combination with CCS. In the United States, we engaged in climate policy discussions at the state level in support of state greenhouse gas reduction targets, climate action plans, and policies that support energy transition, renewable portfolio standards, and clean energy standards. LyondellBasell is directly involved in advocacy to advance CCUS in the states to ensure a supportive regulatory framework for carbon reduction technologies as well as policies to support electricity market reforms to support renewable and generation investments, innovation, and grid reliability.

(4.11.1.8) Type of direct engagement with policy makers on this policy, law, or regulation

Select all that apply

- Regular meetings
- Participation in voluntary government programs
- Submitting written proposals/inquiries

(4.11.1.9) Funding figure your organization provided to policy makers in the reporting year relevant to this policy, law, or regulation (currency)

0

(4.11.1.10) Explain the relevance of this policy, law, or regulation to the achievement of your environmental commitments and/or transition plan, how this has informed your engagement, and how you measure the success of your engagement

We have developed GHG emission reduction plans for our major sites including in Germany, France and The Netherlands. Legislative developments in countries who aim to establish GHG reduction targets for industry, along with financial support in the form of subsidies or tax credits, are key for us to realise those reduction plans. Subsidies are important to support the high capital investments needed to deploy emission reduction technologies at sites and with our suppliers.

(4.11.1.11) Indicate if you have evaluated whether your organization's engagement on this policy, law, or regulation is aligned with global environmental treaties or policy goals

Select from:

- Yes, we have evaluated, and it is aligned

(4.11.1.12) Global environmental treaties or policy goals aligned with your organization's engagement on this policy, law or regulation

Select all that apply

- Paris Agreement

[Add row]

(4.11.2) Provide details of your indirect engagement on policy, law, or regulation that may (positively or negatively) impact the environment through trade associations or other intermediary organizations or individuals in the reporting year.

Row 1

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

North America

- American Chemistry Council

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

The American Chemistry Council (ACC) has adopted a set of Climate Policy Principles which state that a combination of technology, market-based, and policy solutions will be necessary to reduce GHG emissions and achieve climate goals, such as those of the Paris Agreement. To support climate progress, the ACC calls on the US Congress to enact legislation to: 1) increase government investment and scientific resources to develop and deploy low emissions technologies in the manufacturing sector, 2) adopt transparent, predictable, technology- and revenue-neutral, market-based, economy-wide carbon price signals, and 3) encourage adoption of emissions-avoiding solutions and technologies throughout the economy to achieve significant emissions savings. ACC has also indicated support for net zero economy-wide by 2050. Our evaluation has shown that their positions around hydrogen and low carbon fuels, CCUS, emerging technologies, renewable and low carbon electricity, and carbon pricing are consistent with ours.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement

Row 2

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

North America

- American Fuel & Petrochemical Manufacturers

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

- Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

- Inconsistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

- Yes, we attempted to influence them but they did not change their position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

The American Fuel and Petrochemical Manufacturers (AFPM) states support for "the aspiration of the Paris Accord to address climate change through global cooperation and greenhouse gas emissions reductions" but does not specify support the goals of the Agreement to limit global temperature rise to well below 2C above preindustrial levels and to pursue efforts to limit the temperature increase even further to 1.5C. AFPM is opposed to EV mandates and bans that would impact their refining members. AFPM is leading litigation efforts to oppose federal and state laws/regulations designed to reduced GHG emissions from the transportation sector by supporting zero emissions vehicles, which play a key role in the U.S. meeting its climate targets. AFPM has not taken a public advocacy position for or against hydrogen or other low carbon fuels as a way to support industrial decarbonization, but they opposed provisions of the Inflation Reduction Act, which provide a source of funding to incentivize and accelerate investment in hydrogen. They do not have any stated positions around emerging technologies, renewable and low carbon electricity, or carbon pricing.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

- Yes, we have evaluated, and it is not aligned

Row 3

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

Europe

BusinessEurope

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

BusinessEurope supports the European Green Deal and is committed to the transition to a climate-neutral economy by mid-century. Our evaluation has shown that their positions around hydrogen and low carbon fuels, CCUS, emerging technologies, renewable and low carbon electricity, and carbon pricing are consistent with ours.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

- Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement

Row 4

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

Europe

- European Chemical Industry Council (CEFIC) [CH only]

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

- Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

- Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

- Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

Cefic supports the European Green Deal and Europe's ambition to become climate neutral by 2050. Our evaluation has shown that their positions around hydrogen and low carbon fuels, CCUS, emerging technologies, renewable and low carbon electricity, and carbon pricing are consistent with ours.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

- Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement

Row 5

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

Global

- Other global trade association, please specify :International Council of Chemical Associations (ICCA)

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

- Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

- Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

- Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

ICCA, the global voice of the chemical industry, fully supports the Paris Agreement and the ambition to achieve a climate neutral world by mid-century. The chemicals and materials manufacturers ICCA represents are committed to being part of the solution to global climate change in two ways: 1) working to reduce GHG emissions associated with our own operations, and 2) enabling the entire manufacturing value chain to reduce their own GHG footprints through the use of the energy-saving and emissionsreducing technologies and materials produced or made possible by chemical innovations. Our evaluation has shown that their positions around hydrogen and low carbon fuels, CCUS, emerging technologies, renewable and low carbon electricity, and carbon pricing are consistent with ours

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

Paris Agreement

Row 6

(4.11.2.1) Type of indirect engagement

Select from:

Indirect engagement via a trade association

(4.11.2.4) Trade association

North America

National Association of Manufacturers

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

The National Association of Manufacturers (NAM) states support for the goals of the Paris Agreement: "Climate change is happening. Human activities are contributing. The NAM supports the objectives of the Paris Climate Agreement to significantly reduce the risks and impacts of global climate change." NAM has also stated: "A global consensus has emerged that we must restrict global temperature rise to 2C above preindustrial levels and strive to limit the rise to 1.5C. Either scenario will require massive reductions in GHG emissions over the next 30 years and would likely require net emissions to reach zero in the coming decades." Our evaluation has shown that their positions around hydrogen and low carbon fuels, CCUS, emerging technologies, and renewable and low carbon electricity are consistent with ours.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement

Row 7

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

Europe

- Other trade association in Europe, please specify :PlasticsEurope

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

- Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

- Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

- Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

PlasticsEurope states support for the Paris Agreement, stating "we therefore support the EU's ambition to become climate-neutral by 2050, contributing to global climate objectives of the Paris Agreement. Our evaluation has shown that their positions around hydrogen and low carbon fuels, CCUS, emerging technologies, renewable and low carbon electricity, and carbon pricing are consistent with ours.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

- Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement

Row 8

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

North America

- Other trade association in North America, please specify :United States Council for International Business (USCIB)

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

- Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

- Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

- Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

USCIB's priorities include advancing global climate action alongside energy security, innovation and climate resilience. Related to its priorities, USCIB supports the Paris Agreement and believes the U.S. should remain part of the Agreement. USCIB principles recognize carbon pricing as an important climate policy tool, and USCIB seeks opportunities to design international climate cooperation that works with markets to encourage companies in all sectors to integrate climate mitigation into their activities, supply and value chains.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

- Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement

Row 9

(4.11.2.1) Type of indirect engagement

Select from:

- Indirect engagement via a trade association

(4.11.2.4) Trade association

Global

- Other global trade association, please specify :World Economic Forum (WEF)

(4.11.2.5) Environmental issues relevant to the policies, laws, or regulations on which the organization or individual has taken a position

Select all that apply

- Climate change

(4.11.2.6) Indicate whether your organization's position is consistent with the organization or individual you engage with

Select from:

- Consistent

(4.11.2.7) Indicate whether your organization attempted to influence the organization or individual's position in the reporting year

Select from:

- Yes, we publicly promoted their current position

(4.11.2.8) Describe how your organization's position is consistent with or differs from the organization or individual's position, and any actions taken to influence their position

The WEF supports the ambitions of the Paris Agreement and spearheads multistakeholder engagement towards the resolution of the climate issue. The WEF is committed to supporting global efforts in the private and public sectors to limit global temperature rise.

(4.11.2.11) Indicate if you have evaluated whether your organization's engagement is aligned with global environmental treaties or policy goals

Select from:

- Yes, we have evaluated, and it is aligned

(4.11.2.12) Global environmental treaties or policy goals aligned with your organization's engagement on policy, law or regulation

Select all that apply

- Paris Agreement

[Add row]

(4.12.1) Provide details on the information published about your organization's response to environmental issues for this reporting year in places other than your CDP response. Please attach the publication.

Row 1

(4.12.1.1) Publication

Select from:

- In mainstream reports

(4.12.1.3) Environmental issues covered in publication

Select all that apply

- Climate change
- Water

(4.12.1.4) Status of the publication

Select from:

- Complete

(4.12.1.5) Content elements

Select all that apply

- Governance
- Risks & Opportunities
- Strategy
- Emission targets

(4.12.1.6) Page/section reference

2.2 Risk Factors, 2.3 Our Strategy, 2.4 Sustainability, 2.7 Governance Report of the Board of Directors, 2.8. Corporate Governance and Risk Management

(4.12.1.7) Attach the relevant publication

2023-ifrs-financial-statements.pdf

(4.12.1.8) Comment

Attached is our 2023 Dutch Annual Financial Report. Governance details are provided in Sections 2.7 and 2.8. Risks and opportunities, including those related to climate and water, are discussed in Section 2.2. The company's sustainability strategy is highlighted in Sections 2.3 and 2.4, with our targets outlined in Section 2.4.

Row 2

(4.12.1.1) Publication

Select from:

In voluntary sustainability reports

(4.12.1.3) Environmental issues covered in publication

Select all that apply

Climate change

Forests

Water

Biodiversity

(4.12.1.4) Status of the publication

Select from:

Complete

(4.12.1.5) Content elements

Select all that apply

- Strategy
- Governance
- Emission targets
- Emissions figures
- Risks & Opportunities
- Water pollution indicators
- Content of environmental policies
- Value chain engagement
- Dependencies & Impacts
- Biodiversity indicators
- Public policy engagement
- Water accounting figures

(4.12.1.6) Page/section reference

Key areas of our 2023 Sustainability Report which cover the environmental issues in this report are sections “Ending Plastic Waste” (p.12-26), “Taking Climate Action” (p.39-48), and “Governance” (p.89-101).

(4.12.1.7) Attach the relevant publication

2023 Sustainability Report - LYB.pdf

(4.12.1.8) Comment

Our Sustainability Report 2023 intends to address the information needs of our stakeholders interested in our overall sustainability performance. We have considered in our disclosures the following regulatory sustainability reporting standards and voluntary reporting frameworks, including Global Reporting Initiative (GRI), Sustainability Accounting, Standards Board (SASB), and International Sustainability Standards Board (ISSB). We have structured our sustainability approach around three global challenges: Ending plastic waste, taking climate action, and supporting a thriving society. This approach shapes how we manage our business and execute strategic objectives. We use sustainability frameworks and best practices to inform our sustainability approach.

[Add row]

C5. Business strategy

(5.1) Does your organization use scenario analysis to identify environmental outcomes?

Climate change

(5.1.1) Use of scenario analysis

Select from:

Yes

(5.1.2) Frequency of analysis

Select from:

Annually

Forests

(5.1.1) Use of scenario analysis

Select from:

No, and we do not plan to within the next two years

(5.1.3) Primary reason why your organization has not used scenario analysis

Select from:

Not an immediate strategic priority

(5.1.4) Explain why your organization has not used scenario analysis

Forest risk commodities have not been deemed a material issue to date. Therefore, scenario analysis has not been used to identify forest-related environmental outcomes.

Water

(5.1.1) Use of scenario analysis

Select from:

Yes

(5.1.2) Frequency of analysis

Select from:

Annually

[Fixed row]

(5.1.1) Provide details of the scenarios used in your organization's scenario analysis.

Climate change

(5.1.1.1) Scenario used

Climate transition scenarios

Bespoke climate transition scenario

(5.1.1.3) Approach to scenario

Select from:

Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

- Policy
- Market
- Reputation
- Technology
- Liability

(5.1.1.6) Temperature alignment of scenario

Select from:

- 1.5°C or lower

(5.1.1.7) Reference year

2020

(5.1.1.8) Timeframes covered

Select all that apply

- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Finance and insurance

- Cost of capital
- Sensitivity of capital (to nature impacts and dependencies)

Stakeholder and customer demands

- Consumer sentiment
- Consumer attention to impact

Regulators, legal and policy regimes

- ☑ Global regulation
- ☑ Level of action (from local to global)
- ☑ Global targets

Relevant technology and science

- ☑ Other relevant technology and science driving forces, please specify :Availability of technologies needed to achieve interim and long-term reduction targets

Macro and microeconomy

- ☑ Domestic growth
- ☑ Globalizing markets

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

We used quantitative and qualitative scenario analysis for further development of our climate strategy and as part of our regular risk evaluation process. We developed three scenarios to support our business strategy including the future development of our sustainability and climate strategy. These three scenarios are, where (1) sustainability progress has taken a step back globally, with significant differences in levels of ambition and action between global regions, (2) a reference baseline scenario representing “Business as Usual”, and a (3) a net zero scenario with an acceleration of climate action globally. The Net Zero scenario is a future state up to 2050 with limiting global warming to 1.5C, which was developed as a bespoke scenario with references to IEA NZE 2050 scenarios and was supported with relevant sector-specific publications. The PESTEL framework (Political, Environmental, Social, Technological, Economical, Legal) has been applied to capture key external driving forces, which are the underlying reasons for change in the magnitude of the probability, consequence, vulnerability, and velocity of the risks. The driving forces have been selected based on potential financial or strategic impact on our organization and the uncertainty involved. Examples of driving forces are international climate change policy including policies that promote clean energy growth, availability and price of feedstock, economic growth, plastic demand in different regions, and low carbon technologies. Key assumptions include a fall of carbon emissions from energy use by more than 95% by 2050, a greater adoption of circular and sharing economies with increased propensity to switch to low-carbon energy sources, the implementation of policies that accelerate the energy transition, consumer sentiment that shows willingness to pay for goods and services that support the energy transition, and the ability to access technology that support the energy transition. The time horizon considered in our scenario extends to 2050, with a mid-point at 2030 to align with the goals of the Paris Agreement on global decarbonization by 2050. The scenario analysis covers all business segments, geographic locations where LyondellBasell operates, and our major production sites. The development of scenarios, inputs, assumptions, and analytical methods used to substantiate each scenario were supported by an external consultant in collaboration with LyondellBasell stakeholders.

(5.1.1.11) Rationale for choice of scenario

We have used quantitative and qualitative scenario analysis for the further development of our climate strategy and as part of our regular risk evaluation process. We've developed three scenarios to support our business strategy including the future development of our sustainability and climate strategy. These scenarios are (1) sustainability progress has taken a step back globally, with significant differences in levels of ambition and action between global regions, (2) a reference baseline scenario representing "Business as Usual", and a (3) a net zero scenario with an acceleration of climate action globally. The "Net Zero" scenario is a future state up to 2050 with limiting global warming to 1.5C, which was developed as a bespoke scenario with references to several public scenarios and sector specific publications including IEA NZE 2050, IHS, and SystemIQ.

Water

(5.1.1.1) Scenario used

Water scenarios

WRI Aqueduct

(5.1.1.3) Approach to scenario

Select from:

Qualitative and quantitative

(5.1.1.4) Scenario coverage

Select from:

Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

Chronic physical

(5.1.1.7) Reference year

2023

(5.1.1.8) Timeframes covered

Select all that apply

- Other, please specify :Unspecified future scenario

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Climate change (one of five drivers of nature change)

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

We refreshed our baseline water risk assessments in 2023, using the World Resources Institute Aqueduct Tool (Aqueduct), version 3.0. Aqueduct rates geographic locations worldwide on a scale from low to extremely high overall water risk based on watershed data related to water quantity stress, quality, and regional factors. Our sites located in extremely high or high water risk areas of the world comprised less than 0.06% of our estimated total water consumption.

(5.1.1.11) Rationale for choice of scenario

The World Resources Institute (WRI) Aqueduct Tool (Aqueduct) was chosen due to its wide acceptance and alignment with CDP, GRI, UN Global Compact, etc., and is seen as the best tool to measure and understand our water-related risks.

Climate change

(5.1.1.1) Scenario used

Physical climate scenarios

- RCP 2.6

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

- No SSP used

(5.1.1.3) Approach to scenario

Select from:

- Qualitative

(5.1.1.4) Scenario coverage

Select from:

- Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

- Acute physical
- Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

- 1.6°C - 1.9°C

(5.1.1.7) Reference year

2020

(5.1.1.8) Timeframes covered

Select all that apply

- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- ☑ Changes to the state of nature
- ☑ Number of ecosystems impacted
- ☑ Speed of change (to state of nature and/or ecosystem services)
- ☑ Climate change (one of five drivers of nature change)

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

We have used qualitative scenario analysis for the further development of our climate strategy and as part of our regular risk evaluation process. We developed three scenarios until 2050. The first scenario is a future state up to 2050 with limiting global warming to well below 2C, and the second scenario looks to a state in line with 2.5C – 2.9C global warming (the business as usual scenario), and the third scenario looks to a future state in line with 4C global warming (the worst case scenario). All scenarios have been developed based on input and models from IRENA World Energy Transitions Outlook (1.5C pathway), IPCC RCP 2.6 (well below 2C), IPCC RCP 4.5 (2.5C – 2.9C), IPCC RCP 8.5 (4C global warming), as well as the IEA Sustainable Development Scenario 2020. These scenarios are also supported by relevant sector-specific publications. The PESTEL framework (Political, Environmental, Social, Technological, Economical, Legal) has been applied to capture key external driving forces, which are the underlying reasons for changes in the magnitude of the probability, consequence, vulnerability, and velocity of the risks. The driving forces have been selected based on potential financial or strategic impact on our organization and the uncertainty involved. The time horizon considered in our scenario exercise extends to 2050, with a mid-point at 2030 to align with the goals of the Paris Agreement on global decarbonization by 2050. The scenario analysis covers all business segments, geographic locations where LyondellBasell operates, and our major production sites. The development of scenarios, inputs, assumptions, and analytical methods used to substantiate each scenario were supported by an external consultant in collaboration with LyondellBasell stakeholders.

(5.1.1.11) Rationale for choice of scenario

We have used qualitative scenario analysis as part of our risk evaluation process on physical climate risk, both acute and chronic. We have used three different scenarios referencing IPCC RCP 2.6, 4.5 and 8.5 to represent the evolution of climate and its physical impact on our manufacturing operations and our supply chain under a 1.5 / well below 2oC world, an intermediate scenario, and a worst case scenario.

Climate change

(5.1.1.1) Scenario used

Physical climate scenarios

- ☑ RCP 4.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

- No SSP used

(5.1.1.3) Approach to scenario

Select from:

- Qualitative

(5.1.1.4) Scenario coverage

Select from:

- Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

- Acute physical
- Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

- 2.5°C - 2.9°C

(5.1.1.7) Reference year

2020

(5.1.1.8) Timeframes covered

Select all that apply

- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Number of ecosystems impacted
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

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(5.1.1.11) Rationale for choice of scenario

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Climate change

(5.1.1.1) Scenario used

Physical climate scenarios

- RCP 8.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

- No SSP used

(5.1.1.3) Approach to scenario

Select from:

- Qualitative

(5.1.1.4) Scenario coverage

Select from:

- Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

- Acute physical
- Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

- 4.0°C and above

(5.1.1.7) Reference year

2020

(5.1.1.8) Timeframes covered

Select all that apply

- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Number of ecosystems impacted
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

We have used qualitative scenario analysis for the further development of our climate strategy and as part of our regular risk evaluation process. We developed three scenarios until 2050. The first scenario is a future state up to 2050 with limiting global warming to well below 2C, and the second scenario looks to a state in line with 2.5C – 2.9C global warming (the business as usual scenario), and the third scenario looks to a future state in line with 4C global warming (the worst case scenario). All scenarios have been developed based on input and models from IRENA World Energy Transitions Outlook (1.5C pathway), IPCC RCP 2.6 (well below 2C), IPCC RCP 4.5 (2.5C – 2.9C), IPCC RCP 8.5 (4C global warming), as well as the IEA Sustainable Development Scenario 2020. These scenarios are also supported by relevant sector-specific publications. The PESTEL framework (Political, Environmental, Social, Technological, Economical, Legal) has been applied to capture key external driving forces, which are the underlying reasons for changes in the magnitude of the probability, consequence, vulnerability, and velocity of the risks. The driving forces have been selected based on potential financial or strategic impact on our organization and the uncertainty involved. The time horizon considered in our scenario exercise extends to 2050, with a mid-point at 2030 to align with the goals of the Paris Agreement on global decarbonization by 2050. The scenario analysis covers all business segments, geographic locations where LyondellBasell operates, and our major production sites. The development of scenarios, inputs, assumptions, and analytical methods used to substantiate each scenario were supported by an external consultant in collaboration with LyondellBasell stakeholders.

(5.1.1.11) Rationale for choice of scenario

We have used qualitative scenario analysis as part of our risk evaluation process on physical climate risk, both acute and chronic. We have used three different scenarios referencing IPCC RCP 2.6, 4.5 and 8.5 to represent the evolution of climate and its physical impact on our manufacturing operations and our supply chain under a 1.5 / well below 2oC world, an intermediate scenario, and a worst case scenario.

Water

(5.1.1.1) Scenario used

Physical climate scenarios

RCP 2.6

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

No SSP used

(5.1.1.3) Approach to scenario

Select from:

Qualitative

(5.1.1.4) Scenario coverage

Select from:

Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

Acute physical

Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

- 1.6°C - 1.9°C

(5.1.1.7) Reference year

2020

(5.1.1.8) Timeframes covered

Select all that apply

- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Number of ecosystems impacted
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

We have used qualitative scenario analysis for the further development of our climate strategy and as part of our regular risk evaluation process. We developed three scenarios until 2050. The first scenario is a future state up to 2050 with limiting global warming to well below 2C, and the second scenario looks to a state in line with 2.5C – 2.9C global warming (the business as usual scenario), and the third scenario looks to a future state in line with 4C global warming (the worst case scenario). All scenarios have been developed based on input and models from IRENA World Energy Transitions Outlook (1.5C pathway), IPCC RCP 2.6 (well below 2C), IPCC RCP 4.5 (2.5C – 2.9C), IPCC RCP 8.5 (4C global warming), as well as the IEA Sustainable Development Scenario 2020. These scenarios are also supported by relevant sector-specific publications. The PESTEL framework (Political, Environmental, Social, Technological, Economical, Legal) has been applied to capture key external driving forces, which are the underlying reasons for changes in the magnitude of the probability, consequence, vulnerability, and velocity of the risks. The driving forces have been selected based on potential financial or strategic impact on our organization and the uncertainty involved. The time horizon considered in our scenario exercise extends to 2050, with a mid-point at 2030 to align with the goals of the Paris Agreement on global decarbonization by 2050. The scenario analysis

covers all business segments, geographic locations where LyondellBasell operates, and our major production sites. The development of scenarios, inputs, assumptions, and analytical methods used to substantiate each scenario were supported by an external consultant in collaboration with LyondellBasell stakeholders.

(5.1.1.11) Rationale for choice of scenario

We have used qualitative scenario analysis as part of our risk evaluation process on physical climate risk, both acute and chronic. We have used three different scenarios referencing IPCC RCP 2.6, 4.5 and 8.5 to represent the evolution of climate and its physical impact on our manufacturing operations and our supply chain under a 1.5 / well below 2oC world, an intermediate scenario, and a worst case scenario.

Water

(5.1.1.1) Scenario used

Physical climate scenarios

RCP 4.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

No SSP used

(5.1.1.3) Approach to scenario

Select from:

Qualitative

(5.1.1.4) Scenario coverage

Select from:

Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

- Acute physical
- Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

- 2.5°C - 2.9°C

(5.1.1.7) Reference year

2020

(5.1.1.8) Timeframes covered

Select all that apply

- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Number of ecosystems impacted
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

We have used qualitative scenario analysis for the further development of our climate strategy and as part of our regular risk evaluation process. We developed two scenarios until 2050. The first scenario is a future state up to 2050 with limiting global warming to well below 2C, and the second scenario looks to a state in line with 2.5C – 2.9C global warming (the business as usual scenario), and the third scenario looks to a future state in line with 4C global warming (the worst case scenario). All scenarios have been developed based on input and models from IRENA World Energy Transitions Outlook (1.5C pathway), IPCC RCP 2.6 (well below 2C), IPCC RCP 4.5 (2.5C – 2.9C), IPCC RCP 8.5 (4C global warming), as well as the IEA Sustainable Development Scenario 2020. These scenarios are also supported by relevant sector-specific publications. The PESTEL framework (Political, Environmental, Social, Technological, Economical, Legal) has been applied to capture key external driving forces, which are the underlying reasons for changes in the magnitude of the probability, consequence, vulnerability, and velocity of the risks. The driving forces have been selected based on potential financial or strategic impact on our organization and the uncertainty involved. The time horizon considered in our scenario exercise extends to 2050, with a mid-point at 2030 to align with the goals of the Paris Agreement on global decarbonization by 2050. The scenario analysis covers all business segments, geographic locations where LyondellBasell operates, and our major production sites. The development of scenarios, inputs, assumptions, and analytical methods used to substantiate each scenario were supported by an external consultant in collaboration with LyondellBasell stakeholders.

(5.1.1.11) Rationale for choice of scenario

We have used qualitative scenario analysis as part of our risk evaluation process on physical climate risk, both acute and chronic. We have used three different scenarios referencing IPCC RCP 2.6, 4.5 and 8.5 to represent the evolution of climate and its physical impact on our manufacturing operations and our supply chain under a 1.5 / well below 2oC world, an intermediate scenario, and a worst case scenario.

Water

(5.1.1.1) Scenario used

Physical climate scenarios

RCP 8.5

(5.1.1.2) Scenario used SSPs used in conjunction with scenario

Select from:

No SSP used

(5.1.1.3) Approach to scenario

Qualitative

(5.1.1.4) Scenario coverage

Select from:

- Organization-wide

(5.1.1.5) Risk types considered in scenario

Select all that apply

- Acute physical
- Chronic physical

(5.1.1.6) Temperature alignment of scenario

Select from:

- 4.0°C and above

(5.1.1.7) Reference year

2020

(5.1.1.8) Timeframes covered

Select all that apply

- 2030
- 2050

(5.1.1.9) Driving forces in scenario

Local ecosystem asset interactions, dependencies and impacts

- Changes to the state of nature
- Number of ecosystems impacted
- Speed of change (to state of nature and/or ecosystem services)
- Climate change (one of five drivers of nature change)

(5.1.1.10) Assumptions, uncertainties and constraints in scenario

We have used qualitative scenario analysis for the further development of our climate strategy and as part of our regular risk evaluation process. We developed three scenarios until 2050. The first scenario is a future state up to 2050 with limiting global warming to well below 2C, and the second scenario looks to a state in line with 2.5C – 2.9C global warming (the business as usual scenario), and the third scenario looks to a future state in line with 4C global warming (the worst case scenario). All scenarios have been developed based on input and models from IRENA World Energy Transitions Outlook (1.5C pathway), IPCC RCP 2.6 (well below 2C), IPCC RCP 4.5 (2.5C – 2.9C), IPCC RCP 8.5 (4C global warming), as well as the IEA Sustainable Development Scenario 2020. These scenarios are also supported by relevant sector-specific publications. The PESTEL framework (Political, Environmental, Social, Technological, Economical, Legal) has been applied to capture key external driving forces, which are the underlying reasons for changes in the magnitude of the probability, consequence, vulnerability, and velocity of the risks. The driving forces have been selected based on potential financial or strategic impact on our organization and the uncertainty involved. The time horizon considered in our scenario exercise extends to 2050, with a mid-point at 2030 to align with the goals of the Paris Agreement on global decarbonization by 2050. The scenario analysis covers all business segments, geographic locations where LyondellBasell operates, and our major production sites. The development of scenarios, inputs, assumptions, and analytical methods used to substantiate each scenario were supported by an external consultant in collaboration with LyondellBasell stakeholders.

(5.1.1.11) Rationale for choice of scenario

We have used qualitative scenario analysis as part of our risk evaluation process on physical climate risk, both acute and chronic. We have used three different scenarios referencing IPCC RCP 2.6, 4.5 and 8.5 to represent the evolution of climate and its physical impact on our manufacturing operations and our supply chain under a 1.5 / well below 2oC world, an intermediate scenario, and a worst case scenario.

[Add row]

(5.1.2) Provide details of the outcomes of your organization’s scenario analysis.

Climate change

(5.1.2.1) Business processes influenced by your analysis of the reported scenarios

Select all that apply

- Risk and opportunities identification, assessment and management
- Strategy and financial planning
- Resilience of business model and strategy
- Capacity building
- Target setting and transition planning

(5.1.2.2) Coverage of analysis

Select from:

- Organization-wide

(5.1.2.3) Summarize the outcomes of the scenario analysis and any implications for other environmental issues

Our risk management process analyzed several transition and physical risks including increase in temperature, low water level, water stress, extreme weather events, regulations and standards on carbon emissions and other environmental regulations, low carbon technologies, electrification and green hydrogen, replacement of energy-intensive technology, feedstock availability, shift in expectations from business partners, potential changing market demand, insurance capacity, cost of capital and market demand for transparency. The analysis has been used to classify risks in terms of likelihood and as input into our long-term business planning process. The qualitative insights from these scenarios are a starting point for use as inputs into wider business strategy and will continue to be enriched with a range of inputs. The scenarios we ran showed that, with respect to physical risk, although we have preparedness plans in place, should an event occur, it could have the potential to disrupt our supply chain and operations. Several of our facilities are located on the U.S. Gulf Coast, which has been impacted by hurricanes. Landslides occurring near key supply arteries could create disruptions to rail networks. Our sites rely on rivers for transportation that may experience restrictions in times of drought or other unseasonal weather variation. In addition, scarcity of water and drought conditions due to climate change could reduce the availability of fresh water needed to produce our products, which could increase our costs of operations. The scenarios we ran showed that, with respect to transition risk, international climate change policy may result in increases in carbon pricing with an indirect impact on the costs of our operations and price of goods. Low carbon technologies may not be commercially mature or available in sufficient capacity to reduce the GHG footprint of our operations. Similarly, alternative feedstocks, whether renewable-based or derived from plastic waste, may also not be available in volumes necessary to sufficiently reduce feedstock-related emissions. The scenario analysis informed our decision to revise our corporate targets for 2030 and increase our scope 1 and 2 target to a 42% reduction in absolute emissions from 2020 levels. As we continue to focus on the future beyond, and to meet growing customer demands for low carbon products, we took action in 2022 to establish a Circular and Low Carbon Solutions (CLCS) business to deliver on our ambition to produce and market 2 million metric tons of recycled and renewable-based polymers annually by 2030. CLCS is also responsible for securing access to renewable and circular (plastic waste) feedstock. For example, in 2022, we formed a joint venture with 23 Oaks Investment to build an energy efficient, advanced plastic waste sorting facility in Germany for waste mostly incinerated today that will secure a source of plastic waste feedstock for our advanced recycling plant that we are planning in our Wesseling site.

Water

(5.1.2.1) Business processes influenced by your analysis of the reported scenarios

Select all that apply

- Risk and opportunities identification, assessment and management

(5.1.2.2) Coverage of analysis

Select from:

- Organization-wide

(5.1.2.3) Summarize the outcomes of the scenario analysis and any implications for other environmental issues

We refreshed our baseline water risk assessments in 2023, using the World Resources Institute Aqueduct Tool (Aqueduct), version 3.0. Aqueduct rates geographic locations worldwide on a scale from low to extremely high overall water risk based on watershed data related to water quantity stress, quality, and regional factors. Our sites located in extremely high or high water risk areas of the world comprised less than 0.06% of our estimated total water consumption. We committed to completing water risk management plans at our large sites and facilities in high water risk areas as defined by the outcome of the Aqueduct assessment no later than 2030. We plan to prioritize the site-specific plans for high water risk sites and prepare the plans in a sequenced way to allow learnings to be applied for subsequent plans. We address specific climate-related risks, including severe weather water-related risks, through structured response plans, which are shared with our Sustainability Council Committee, with input and alignment from the Executive Committee.

[Fixed row]

(5.2) Does your organization's strategy include a climate transition plan?

(5.2.1) Transition plan

Select from:

- Yes, we have a climate transition plan which aligns with a 1.5°C world

(5.2.3) Publicly available climate transition plan

Select from:

- Yes

(5.2.4) Plan explicitly commits to cease all spending on, and revenue generation from, activities that contribute to fossil fuel expansion

Select from:

- No, and we do not plan to add an explicit commitment within the next two years

(5.2.6) Explain why your organization does not explicitly commit to cease all spending on and revenue generation from activities that contribute to fossil fuel expansion

We have a commitment to reach net zero scope 1 and 2 GHG emissions for our global operations by 2050. Our core business currently runs on fossil feedstocks for which there does not exist any commercial alternative at scale today. We are working on the development of technologies, and pathways to secure availability of alternative feedstock volumes at scale, for example through the deployment of our MoReTec technology, which aims to bring back plastic waste in the value chain displacing fossil feedstocks.

(5.2.7) Mechanism by which feedback is collected from shareholders on your climate transition plan

Select from:

- We have a different feedback mechanism in place

(5.2.8) Description of feedback mechanism

We recognize the vital role that stakeholders play in our business operations and the importance of fostering positive, collaborative relationships with them. We engage daily with stakeholders globally covering a wide variety of topics and issues. We know that our stakeholders have a broad range of interests, and we strive to seek their input, listen to their perspectives and expertise, and prioritize and integrate their feedback in a strategic and sustainable manner. LYB believes that systematically engaging with stakeholders will allow us to better understand, address, and manage stakeholder expectations, interests and concerns, identify emerging trends and opportunities; gather external input and expertise to inform strategy, promote innovation and collaboration on solutions to challenges; increase transparency; discover and reduce risk; efficiently allocate resources; and better serve our stakeholders. On an ongoing basis, LYB receives feedback from stakeholders in a variety of ways, including investor events, telephone and in-person conversations, employee discussions and surveys, customer discussions and surveys, community and local engagements, and social media interactions. We are committed to open and two-way communication with our stakeholders. We actively seek and listen to feedback, concerns, and suggestions from our stakeholders. The method and frequency of engagement with our stakeholders may change according to their needs and priorities. In 2023, our Board adopted a Stakeholder Engagement Policy, which is available on our website, to outline our values and approach to stakeholder engagement, including shareholders.

(5.2.9) Frequency of feedback collection

Select from:

- More frequently than annually

(5.2.10) Description of key assumptions and dependencies on which the transition plan relies

Our ability to achieve these goals depends on many factors, including the availability of technology, our ability to secure permits and emissions credits, evolving regulatory requirements, competitor actions, customer preferences, and our ability to reduce emissions from our operations through modernization and innovation, reduce the emissions intensity of the electricity we buy, and invest in renewables and low carbon energy. We may also not timely adapt to changes or methods in carbon pricing that could increase our costs and reduce our competitiveness.

(5.2.11) Description of progress against transition plan disclosed in current or previous reporting period

In 2023, we progressed in several areas of our transition plan towards our long term climate targets: (1) progress in our site reduction efforts: we have continued to progress in the analysis, planning and execution of site reduction projects that will contribute towards our 2030 and long term scope 1 and 2 targets. (2) progress in the procurement of renewable electricity, achieving 90% of our 2030 renewable energy target in 2023, (3) further pursuing our engagement with policymakers, directly and through trade associations, to share our thinking on the policy elements needed to enable the net zero transition, (4) reviewing our processes to define a more uniform use of our internal carbon pricing through our operations for all decisions that impact our scope 1 and 2 emissions.

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

2023 Sustainability Report - LYB.pdf

(5.2.13) Other environmental issues that your climate transition plan considers

Select all that apply

- Water

(5.2.14) Explain how the other environmental issues are considered in your climate transition plan

We have developed climate-related scenarios to assess physical risks, including those related to water. These pathways represent varying expectations of global temperature rise in the medium (2030) and long term (2050). Severe weather events and climatic factors pose an acute physical risk to our operations, especially in vulnerable regions like the U.S. Gulf Coast. Climate change intensifies this risk, increasing the frequency and severity of events like hurricanes, flooding, and drought. While we maintain preparedness and business continuity plans aimed at minimizing potential disruptions and enhancing safety, these events still have the potential to interrupt our supply chain and operations. Our facilities on the U.S. Gulf Coast, a region that has previously encountered hurricanes, have experienced such

interruptions in the past, necessitating temporary shutdowns. Long-term climate changes bring about chronic physical risks to our operations, notably global sea level rise and persistent drought conditions. For instance, we have witnessed feedstock shipping restrictions caused by unseasonal weather variations in Germany, affecting the Rhine River's water levels. We address specific climate-related risks through structured response plans, which are shared with our Sustainability Council Committee, with input and alignment from the Executive Committee and the HSE&S Committee of the Board.

[Fixed row]

(5.3) Have environmental risks and opportunities affected your strategy and/or financial planning?

(5.3.1) Environmental risks and/or opportunities have affected your strategy and/or financial planning

Select from:

- Yes, both strategy and financial planning

(5.3.2) Business areas where environmental risks and/or opportunities have affected your strategy

Select all that apply

- Products and services
- Upstream/downstream value chain
- Investment in R&D
- Operations

[Fixed row]

(5.3.1) Describe where and how environmental risks and opportunities have affected your strategy.

Products and services

(5.3.1.1) Effect type

Select all that apply

- Risks
- Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

- Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

LyondellBasell believes that there may be an increase in demand for more sustainable products in the future due to an increasing interest in carbon reduction and circularity from our customers and wider society. In the second half of 2022, we established our Circular and Low Carbon Solutions (CLCS) business unit to address the rapidly growing demand for recycled and renewable-based products. As we build up our CLCS business, we are making investments to secure feedstock supply, expand our recycling footprint, and develop scalable technologies to grow our Circulen family of polymers. These polymers are produced using raw materials derived from mechanical recycling (CirculenRecover), advanced recycling (CirculenRevive), or renewable materials (CirculenRenew). In 2023, we introduced a new product range called LC (Low Carbon) solutions, which uses alternative sources of carbon from recycled and renewable, bio-based materials. These products offer our customers a lower carbon footprint compared to the fossil-based equivalent. LC products include core offerings from our Intermediates and Derivatives segment, such as styrene monomer and propylene oxide (PO) with end applications including insulation materials, automotive, and consumer goods.

Upstream/downstream value chain

(5.3.1.1) Effect type

Select all that apply

- Risks
- Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

- Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

In 2023, we completed an extensive supplier sustainability risk mapping project using the EcoVadis IQ platform to evaluate risks in the areas of environment, social standards, and ethics. Based on the risk mapping, certain suppliers were asked to complete EcoVadis sustainability assessments or TFS audits, with mandatory corrective actions for those scoring below 45. Over 1,500 suppliers with a spend threshold of 150,000 in 2022 were assessed, a 120% increase from the previous year. Our Global Supplier Engagement Team also reached out to 27 suppliers with low scores to provide training and support. Additionally, we rolled out a supplier

carbon reduction program, engaged with main feedstock suppliers to discuss GHG emissions reductions, conducted a survey to develop a supplier GHG engagement strategy, and involved selected suppliers in a pilot test of Tfs' PCF data sharing solution using Siemens' SiGreen technology. We have also successfully collaborated with a number of our customers on the development of products with a lower carbon footprint. Successful collaborations with our customers include our collaboration with crisps brand Lay's whereby our CirculenRenew polymers helped create Lay's first plant-based packaging in France. We also collaborated with Wellspect HealthCare, a Swedish medical technology company, to create a female urinary catheter, called LoFric Elle using CirculenRenew polymers. In another example, LYB collaborated with value chain partners Neste, Berry Global, Pactiv Evergreen, and Dart Container to produce cold beverage cups that reduce the use of fossil resources and contribute to the circular economy. These cups also use our CirculenRenew polymers. Finally, we partnered with Berry Global and a global food brand to provide a polymer sourced from advanced recycled plastic waste for use in the packaging for snack crackers.

Investment in R&D

(5.3.1.1) Effect type

Select all that apply

- Risks
- Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

- Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

International organizations, such as the International Energy Agency, recognize the hard-to-abate nature of GHG emissions in the chemical industry, largely due to the immaturity of necessary technologies for large-scale deployment. Emerging technologies like low emission hydrogen, CCUS, and process electrification are critical for reducing GHG emissions in the chemical sector and driving transformational changes for larger-scale emission reductions. We are pursuing R&D investments to support these technologies. In evaluating the abatement potential of these technologies, we consider short-, medium-, and long-term impacts on our business objectives. We have been actively pursuing R&D investments to support these technologies. For instance, in 2023 we reached a final investment decision to build a first-of-its-kind, commercial-scale advanced recycling plant, MoReTec-1. The plant will be located at our Wesseling, Germany site and will use our proprietary MoReTec technology. Once operational, this 50KTA unit will convert hard-to-recycle, post-consumer plastic waste into feedstock for new polymers, marketed under our CirculenRevive brand. We are considering investing in additional projects like this in the near future. In 2023, we invested in Lombard Odier Investment Managers (LOIM) Plastic Circularity Fund SCSp. The fund's investment objective is to provide solutions to reduce pollution from plastic waste and decrease GHG emissions in the plastic value chain. The fund is targeting to raise up to 500 million. We also invested in a new Carbon Neutrality Fund led by Chrysalix Venture Capital. The fund will support emerging companies developing and deploying new low-carbon technologies, focusing on hard-to-abate sectors such as the chemicals industry.

Operations

(5.3.1.1) Effect type

Select all that apply

- Risks
- Opportunities

(5.3.1.2) Environmental issues relevant to the risks and/or opportunities that have affected your strategy in this area

Select all that apply

- Climate change

(5.3.1.3) Describe how environmental risks and/or opportunities have affected your strategy in this area

Our European sites subject to the EU ETS incorporate carbon pricing in their business and financial planning. Similar carbon pricing mechanisms are being implemented in other regions where we operate. We consider the short-, medium-, and long-term impacts of existing and emerging carbon pricing regulations in our analyses. In 2023, we followed a multidisciplinary approach to review our processes through which we define our internal carbon price, with the objective of having a more uniform use across our operations and strategic decisions. Implementation of our revised ICP will place greater emphasis on low carbon alternatives in growth projects and influence considerations around new projects. As part of our approach to reducing our scope 1 and 2 emissions, we are evaluating different projects including on energy efficiency, renewable electricity and electrification, hydrogen, and carbon capture and storage/utilization (CCS/CCU). Additionally, the cessation of refining operations at our Houston Refinery by the first quarter of 2025 will further contribute to reducing GHG emissions. We committed to completing water risk management plans at our large sites and facilities in high water risk areas no later than 2030. We will prioritize completing the site-specific plans for high water risk sites and prepare the plans in a sequenced way to allow learnings to be applied for subsequent plans. Additionally, we signed the UN CEO Water Mandate, which commits us to continuous improvement in water stewardship.

[Add row]

(5.3.2) Describe where and how environmental risks and opportunities have affected your financial planning.

Row 1

(5.3.2.1) Financial planning elements that have been affected

Select all that apply

- Assets
- Revenues
- Liabilities
- Direct costs
- Indirect costs
- Access to capital
- Capital allocation
- Capital expenditures
- Acquisitions and divestments

(5.3.2.2) Effect type

Select all that apply

- Risks
- Opportunities

(5.3.2.3) Environmental issues relevant to the risks and/or opportunities that have affected these financial planning elements

Select all that apply

- Climate change

(5.3.2.4) Describe how environmental risks and/or opportunities have affected these financial planning elements

Our financial planning considers climate-related risks and opportunities related to revenues, costs, capital expenditures, acquisitions and divestments, access to capital, and assets and liabilities over the short, medium and long terms. Our commitment to sustainability and climate action has continued to evolve and is an important consideration in setting corporate strategy. This has led to the development of our climate transition plan for LyondellBasell to achieve its interim and long-term climate targets. To achieve our targets, we expect capital spending in the future will include investments to support lowering emissions in our operations. We also anticipate incurring costs for environmental compliance, including compliance with potential legislation and potential regulation related to climate change. We expect capital spending to support sustainability ambitions, including climate, will represent approximately 20% of total capital expenditures over the next two years.

While many of the GHG emissions reduction projects are still in the early stages of development, we will evaluate, pursue and prioritize our GHG emission investments based on a rate of return for the project. Case study on direct costs: Our energy-related costs are a significant portion of our direct operating costs, and, for our European sites under the EU ETS, include the cost of allowances. As such, we saw value in identifying projects that could reduce our energy use and at the same time reduce our CO2 emissions. Our Value Enhancement Program aims in part to optimize the use of feedstock, energy, and other raw materials with the potential to have a significant impact on our operating costs. Projects under this program can also have a direct impact on our scope 1 and 2 emissions, which can allow us to mitigate our risk of increased costs under the EU ETS. Examples include minimizing losses from flaring operations and using advanced controls and energy optimizers to minimize energy use in our sites. Through this program, we continue to optimize our overall energy consumption and minimize CO2e emissions. In 2023, projects under this program reduced energy use by 3.9 million gigajoules and scope 1 emissions by approximately 238,000 metric tons of CO2e.
 [Add row]

(5.4) 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	Methodology or framework used to assess alignment with your organization’s climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
	Select from: <input checked="" type="checkbox"/> Yes	Select all that apply <input checked="" type="checkbox"/> A sustainable finance taxonomy	Select from: <input checked="" type="checkbox"/> At the organization level only

[Fixed row]

(5.4.1) Quantify the amount and percentage share of your spending/revenue that is aligned with your organization's climate transition.

Row 1

(5.4.1.1) Methodology or framework used to assess alignment

Select from:

- A sustainable finance taxonomy

(5.4.1.2) Taxonomy under which information is being reported

Select from:

- EU Taxonomy for Sustainable Activities

(5.4.1.3) Objective under which alignment is being reported

Select from:

- Climate change mitigation

(5.4.1.4) Indicate whether you are reporting eligibility information for the selected objective

Select from:

- No

(5.4.1.5) Financial metric

Select from:

- CAPEX

(5.4.1.6) Amount of selected financial metric that is aligned in the reporting year (currency)

71000000

(5.4.1.7) Percentage share of selected financial metric aligned in the reporting year (%)

4.6

(5.4.1.12) Details of the methodology or framework used to assess alignment with your organization’s climate transition

Estimates of the associated expenditures are built into the company's long-range plan, and as of December 31, 2024, we estimated capital spending to support our sustainability goals, including climate and circularity ambitions, will represent approximately 20% of our total capital expenditures over the next two years, with approximately 400 million estimated to be spent in 2024. We also anticipate incurring costs for environmental compliance, including compliance with potential legislation and potential regulation related to climate change in subsequent periods. Several of these projects involve collaboration with external stakeholders, and are dependent on a number of enablers including the construction of relevant infrastructure. In this regard, we have been working in close collaboration with different project participants, for example, with grid operators and our utility providers, for the successful execution of these projects.

[Add row]

(5.5) 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
	Select from: <input checked="" type="checkbox"/> Yes	

[Fixed row]

(5.5.3) Provide details of your organization's investments in low-carbon R&D for chemical production activities over the last three years.

Row 1

(5.5.3.1) Technology area

Select from:

Other, please specify :Molecular recycling and low carbon technologies

(5.5.3.2) Stage of development in the reporting year

Select from:

Applied research and development

(5.5.3.3) Average % of total R&D investment over the last 3 years

0.61

(5.5.3.4) R&D investment figure in the reporting year (unit currency as selected in 1.2) (optional)

0.84

(5.5.3.5) Average % of total R&D investment planned over the next 5 years

12.53

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

We are active in R&D activities to further develop sustainable and circular solutions such as advanced recycling and other technologies for polymer production which minimize resource use and result in products with an improved carbon footprint. Our advanced recycling plant, which uses MoReTec technology can be operated at net zero emissions, further aligning our technology development with our climate commitments and supporting our transition to a low-carbon economy.

Row 2

(5.5.3.1) Technology area

Select from:

Other, please specify :Molecular recycling and other initiatives for circular polymers

(5.5.3.2) Stage of development in the reporting year

Select from:

Full/commercial-scale demonstration

(5.5.3.3) Average % of total R&D investment over the last 3 years

0

(5.5.3.4) R&D investment figure in the reporting year (unit currency as selected in 1.2) (optional)

0

(5.5.3.5) Average % of total R&D investment planned over the next 5 years

10.11

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

We are currently engaged in several large-scale demonstrations of sustainable and circular technologies developed which minimize resource use and result in products with an improved carbon footprint. In November 2023, we made the final investment decision to build a first of its kind, commercial-scale advanced recycling plant at our Wesseling, Germany, site. Using LyondellBasell's proprietary MoReTec technology, this plant single-train advanced recycling plant will convert post-consumer plastic waste into feedstock for production of new plastic materials. The new plant is expected to have an annual capacity of 50,000 tons per year and is designed to recycle the amount of plastic packaging waste generated by over 1.2 million German citizens per year. In addition, our MoReTec plant can be operated at net zero emissions. Construction is planned to be completed by the end of 2025.

Row 3

(5.5.3.1) Technology area

Select from:

Other, please specify :Molecular recycling and other initiatives for circular polymers and low carbon technologies

(5.5.3.2) Stage of development in the reporting year

Select from:

Large scale commercial deployment

(5.5.3.3) Average % of total R&D investment over the last 3 years

0

(5.5.3.4) R&D investment figure in the reporting year (unit currency as selected in 1.2) (optional)

0

(5.5.3.5) Average % of total R&D investment planned over the next 5 years

6.12

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

By 2030, we expect to have progressed towards commercial deployment of these technologies and expand our commercial-level production capacity for circular and low carbon products since our MoReTec plant can be operated at net zero emissions.

Row 4

(5.5.3.1) Technology area

Select from:

Other, please specify :Molecular recycling and other initiatives for circular polymers and low carbon technologies

(5.5.3.2) Stage of development in the reporting year

Select from:

Pilot demonstration

(5.5.3.3) Average % of total R&D investment over the last 3 years

5.53

(5.5.3.4) R&D investment figure in the reporting year (unit currency as selected in 1.2) (optional)

12.81

(5.5.3.5) Average % of total R&D investment planned over the next 5 years

0

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

In 2017, we began focusing on advanced recycling as a complementary solution to mechanical recycling. We then developed our proprietary MoReTec technology and in 2021, we launched our MoReTec pilot plant in Ferrara, Italy, to demonstrate the potential of this advanced recycling technology.

[Add row]

(5.9) What is the trend in your organization's water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

(5.9.1) Water-related CAPEX (+/- % change)

-37

(5.9.2) Anticipated forward trend for CAPEX (+/- % change)

0

(5.9.3) Water-related OPEX (+/- % change)

4141

(5.9.4) Anticipated forward trend for OPEX (+/- % change)

0

(5.9.5) Please explain

The decreased CAPEX spending in 2023 can be attributed to normal fluctuations in global projects activity. From time to time we undertake large water-related asset replacements which drive significant CAPEX spending changes. Changes of this magnitude are not expected to continue year over year, but may happen as major assets age. For example, we replaced 2 large cooling towers at our Channelview Complex with much of the CAPEX spend in 2022. Thus the CAPEX for 2023 was lower compared to 2022, a high spend year. We also note a decision to change to cash CAPEX for these estimates going forward from an accrual approach used in prior years. This change allows the CAPEX spending in CDP to align with our annual financial report (10-K). OPEX spending increased in 2023 primarily because of the increased number of projects globally and a major improvement project conducted by one of our utilities service providers.

[Fixed row]

(5.10) Does your organization use an internal price on environmental externalities?

	Use of internal pricing of environmental externalities	Environmental externality priced
	Select from: <input checked="" type="checkbox"/> Yes	Select all that apply <input checked="" type="checkbox"/> Carbon

[Fixed row]

(5.10.1) Provide details of your organization's internal price on carbon.

Row 1

(5.10.1.1) Type of pricing scheme

Select from:

- Shadow price

(5.10.1.2) Objectives for implementing internal price

Select all that apply

- Drive energy efficiency
- Drive low-carbon investment
- Navigate regulations

(5.10.1.3) Factors considered when determining the price

Select all that apply

- Alignment with the price of allowances under an Emissions Trading Scheme
- Benchmarking against peers
- Scenario analysis

(5.10.1.4) Calculation methodology and assumptions made in determining the price

Our key objectives in setting up an internal carbon pricing mechanism were to (1) support executive decisions to drive low carbon investment, (2) drive efficiency projects, and (3) meet regulatory requirements. We consider several dimensions in our approach to setting price levels, including (1) regional differences, especially when considering regulatory requirements in specific regions such as the EU ETS (2) GHG emission coverage, (3) and the time periods over which our price levels will evolve. Our price levels for our EU manufacturing operations take into account price levels for EU ETS EUAs and our assumptions for their evolution over time, with scenarios that cover the impact of dynamic allocation, the inclusion of chemicals and polymers under CBAM, and global economic conditions that affect the EU market.

(5.10.1.5) Scopes covered

Select all that apply

- Scope 1
- Scope 2

(5.10.1.6) Pricing approach used – spatial variance

Select from:

- Differentiated

(5.10.1.7) Indicate how and why the price is differentiated

We use an internal price on carbon as part of our capital allocation processes, maintaining a regional differentiated approach, with price levels defined in line with the Emissions Trading System (ETS) carbon market in the EU and through benchmarking of the industry in the U.S. and for the rest of our global operations. In 2023, we followed a multidisciplinary approach to review our processes through which we define our internal carbon price, with the objective of having a more uniform use across our operations and strategic decisions. Implementation of our revised ICP will place greater emphasis on low carbon alternatives in growth projects and influence considerations around new projects.

(5.10.1.8) Pricing approach used – temporal variance:

Evolutionary

(5.10.1.9) Indicate how you expect the price to change over time

As the energy transition progresses, we anticipate an increased value for carbon, driven by expected increases in global carbon regulations and growing customer willingness to pay a premium for low carbon products.

(5.10.1.10) Minimum actual price used (currency per metric ton CO2e)

40

(5.10.1.11) Maximum actual price used (currency per metric ton CO2e)

94.74

(5.10.1.12) Business decision-making processes the internal price is applied to

Select all that apply

- Capital expenditure
- Procurement

(5.10.1.13) Internal price is mandatory within business decision-making processes

Yes, for some decision-making processes, please specify :capital expenditures and procurement

(5.10.1.14) % total emissions in the reporting year in selected scopes this internal price covers

100

(5.10.1.15) Pricing approach is monitored and evaluated to achieve objectives

Yes

(5.10.1.16) Details of how the pricing approach is monitored and evaluated to achieve your objectives

In 2023, we followed a multidisciplinary approach to review our processes through which we define our internal carbon price, with the objective of having a more uniform use across our operations and strategic decisions. As part of this approach, we established a monitoring process to (1) assess needed evolutions in price, and (2) the impact of the internal carbon pricing in realizing our objectives. Through this process, we monitor several sources of information, including scenario models for ETS EUA prices, peer data, and climate ambition levels and targets in our customer segments. In addition, we monitor the impact of the use of internal carbon pricing against project IRR and our progress in achieving our scope 1 and 2 targets.

[Add row]

(5.11) Do you engage with your value chain on environmental issues?

Suppliers

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

Yes

(5.11.2) Environmental issues covered

Select all that apply

Climate change

Forests

Water

Plastics

Smallholders

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

No, and we do not plan to within the next two years

(5.11.3) Primary reason for not engaging with this stakeholder on environmental issues

Select from:

- Judged to be unimportant or not relevant

(5.11.4) Explain why you do not engage with this stakeholder on environmental issues

We purchase bio-based feedstock and additives products commercially. We are not aware of any sourcing from smallholders.

Customers

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

- Yes

(5.11.2) Environmental issues covered

Select all that apply

- Climate change
- Plastics

Investors and shareholders

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

- Yes

(5.11.2) Environmental issues covered

Select all that apply

- Climate change
- Plastics

Other value chain stakeholders

(5.11.1) Engaging with this stakeholder on environmental issues

Select from:

- No, and we do not plan to within the next two years

(5.11.3) Primary reason for not engaging with this stakeholder on environmental issues

Select from:

- Judged to be unimportant or not relevant

(5.11.4) Explain why you do not engage with this stakeholder on environmental issues

The stakeholders above cover the majority of stakeholders we engage with.

[Fixed row]

(5.11.1) Does your organization assess and classify suppliers according to their dependencies and/or impacts on the environment?

Climate change

(5.11.1.1) Assessment of supplier dependencies and/or impacts on the environment

Select from:

- Yes, we assess the dependencies and/or impacts of our suppliers

(5.11.1.2) Criteria for assessing supplier dependencies and/or impacts on the environment

Select all that apply

- Contribution to supplier-related Scope 3 emissions

(5.11.1.3) % Tier 1 suppliers assessed

Select from:

- 100%

(5.11.1.4) Define a threshold for classifying suppliers as having substantive dependencies and/or impacts on the environment

Our assessment of our supplier-related scope 3 emissions covers our entire supplier base. In 2023, we deployed an automated dashboard pulling supplier data from our ERP to estimate emissions. Feedstocks account for over 90% of reported scope 3.1 emissions. Based on this, we launched a supplier engagement program focused on high-impact suppliers. Suppliers with spend over 150,000 USD are asked to share the PCF of materials and explore potential emission reduction collaboration with us.

(5.11.1.5) % Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

Select from:

- 1-25%

(5.11.1.6) Number of Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

4597

Forests

(5.11.1.1) Assessment of supplier dependencies and/or impacts on the environment

- No, we do not currently assess the dependencies and/or impacts of our suppliers, but we plan to do so within the next two years

Water

(5.11.1.1) Assessment of supplier dependencies and/or impacts on the environment

Select from:

- Yes, we assess the dependencies and/or impacts of our suppliers

(5.11.1.2) Criteria for assessing supplier dependencies and/or impacts on the environment

Select all that apply

- Impact on water availability
- Impact on pollution levels

(5.11.1.3) % Tier 1 suppliers assessed

Select from:

- 100%

(5.11.1.4) Define a threshold for classifying suppliers as having substantive dependencies and/or impacts on the environment

To establish a threshold for classifying suppliers with potential substantial environmental dependencies and/or impacts, we base our criteria on procurement spend. Suppliers are deemed strategic if their annual spend is at least 150,000 USD.

(5.11.1.5) % Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

Select from:

- 1-25%

(5.11.1.6) Number of Tier 1 suppliers meeting the thresholds for substantive dependencies and/or impacts on the environment

(5.11.2) Does your organization prioritize which suppliers to engage with on environmental issues?

Climate change

(5.11.2.1) Supplier engagement prioritization on this environmental issue

Select from:

- Yes, we prioritize which suppliers to engage with on this environmental issue

(5.11.2.2) Criteria informing which suppliers are prioritized for engagement on this environmental issue

Select all that apply

- Procurement spend
- Regulatory compliance
- Business risk mitigation
- Strategic status of suppliers
- Supplier performance improvement
- In line with the criteria used to classify suppliers as having substantive dependencies and/or impacts relating to climate change

(5.11.2.4) Please explain

In 2023, we completed an extensive supplier sustainability risk mapping project following an initial application of risk criteria the prior year. We leveraged the EcoVadis IQ platform to gain a detailed view of risks in the areas of environment, social standards, and ethics. From this analysis, we obtained valuable insights into potential risks in our supply chain allowing us to take proactive measures to mitigate potential impacts if necessary. Also in 2023, our Global Supplier Engagement Team reached out to 27 suppliers whose EcoVadis score did not meet our minimum requirements to provide the training needed to help them improve. In 2023, we advanced our Scope 3 supplier engagement program to support sustainable procurement and reduce carbon emissions across the value chain, aligned with the Paris Agreement goals. Recognizing that feedstocks and raw materials contribute significantly to our Scope 3 emissions, we implemented a supplier carbon reduction program, targeting suppliers with the highest impact on our product carbon footprint (PCF). We engaged suppliers to share their PCF data, held discussions with key feedstock suppliers on reducing Scope 1 and 2 GHG emissions, and conducted a survey to understand their emissions reduction ambitions. Additionally, we piloted TfS' PCF data sharing solution using Siemens' SiGreen technology with selected suppliers to facilitate upstream PCF information sharing.

Forests

(5.11.2.1) Supplier engagement prioritization on this environmental issue

Select from:

- Yes, we prioritize which suppliers to engage with on this environmental issue

(5.11.2.2) Criteria informing which suppliers are prioritized for engagement on this environmental issue

Select all that apply

- Business risk mitigation
- Procurement spend
- Regulatory compliance
- Strategic status of suppliers
- Supplier performance improvement

(5.11.2.4) Please explain

We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Water

(5.11.2.1) Supplier engagement prioritization on this environmental issue

Select from:

- Yes, we prioritize which suppliers to engage with on this environmental issue

(5.11.2.2) Criteria informing which suppliers are prioritized for engagement on this environmental issue

Select all that apply

- Procurement spend
- Regulatory compliance
- Business risk mitigation
- Strategic status of suppliers
- Supplier performance improvement
- In line with the criteria used to classify suppliers as having substantive dependencies and/or impacts relating to water

(5.11.2.4) Please explain

In 2023, we committed to the UN CEO Water Mandate which drives continual progress for our water stewardship practice across the areas of direct operations, supply chain and watershed management, collective action, community engagement, public policy, and transparency. In 2023, we completed an extensive supplier sustainability risk mapping project following an initial application of risk criteria the prior year. We leveraged the EcoVadis IQ platform to gain a detailed view of risks in the areas of environment, social standards, and ethics. From this analysis, we obtained valuable insights into potential risks in our supply chain allowing us to take proactive measures to mitigate potential impacts if necessary. Based on the risk mapping, we request certain suppliers to complete an EcoVadis sustainability assessment or a TfS audit. If the assessment or audit identifies a need to improve, we may request that the supplier implements corrective actions. For suppliers with an EcoVadis score below 45, corrective actions are mandatory. In 2023, more than 1,500 suppliers with a spend threshold of 150,000 in 2022 were assessed, which represents a 120% increase over 2022. Also in 2023, our Global Supplier Engagement Team reached out to 27 suppliers whose EcoVadis score did not meet our minimum requirements to provide the training needed to help them improve.

[Fixed row]

(5.11.5) Do your suppliers have to meet environmental requirements as part of your organization's purchasing process?

Climate change

(5.11.5.1) Suppliers have to meet specific environmental requirements related to this environmental issue as part of the purchasing process

Select from:

- Yes, environmental requirements related to this environmental issue are included in our supplier contracts

(5.11.5.2) Policy in place for addressing supplier non-compliance

Select from:

- Yes, we have a policy in place for addressing non-compliance

(5.11.5.3) Comment

Sustainability is an important element of our procurement strategy and is incorporated in our supplier relationship management processes. As a responsible business, we expect our suppliers to comply with applicable laws and internationally recognized standards, conduct business ethically and share the principles set out in our Supplier Code of Conduct. We have also embedded a sustainable procurement clause which references our Supplier Code of Conduct in our General Terms and Conditions. Our contractual terms and conditions also include requirements for suppliers to participate in ESG assessments and/or be audited by third parties as requested, share the assessment results with TfS and its members. For suppliers with an EcoVadis score below 45, corrective actions are mandatory. In 2023, more than 1,500 suppliers with a spend threshold of 150,000 in 2022 were assessed, which represents a 120% increase over 2022. Also in 2023, our Global Supplier Engagement Team reached out to 27 suppliers whose EcoVadis score did not meet our minimum requirements to provide the training needed to help them improve.

Forests

(5.11.5.1) Suppliers have to meet specific environmental requirements related to this environmental issue as part of the purchasing process

Select from:

- No, and we do not plan to introduce environmental requirements related to this environmental issue within the next two years

Water

(5.11.5.1) Suppliers have to meet specific environmental requirements related to this environmental issue as part of the purchasing process

Select from:

- Yes, environmental requirements related to this environmental issue are included in our supplier contracts

(5.11.5.2) Policy in place for addressing supplier non-compliance

Select from:

- Yes, we have a policy in place for addressing non-compliance

(5.11.5.3) Comment

Sustainability is an important element of our procurement strategy and is incorporated in our supplier relationship management processes. As a responsible business, we expect our suppliers to comply with applicable laws and internationally recognized standards, conduct business ethically and share the principles set out in our Supplier Code of Conduct. We have also embedded a sustainable procurement clause which references our Supplier Code of Conduct in our General Terms and Conditions. Our contractual terms and conditions also include requirements for suppliers to participate in ESG assessments and/or be audited by third parties as requested, share the assessment results with TfS and its members. For suppliers with an EcoVadis score below 45, corrective actions are mandatory. In 2023, more than 1,500 suppliers with a spend threshold of 150,000 in 2022 were assessed, which represents a 120% increase over 2022. Also in 2023, our Global Supplier Engagement Team reached out to 27 suppliers whose EcoVadis score did not meet our minimum requirements to provide the training needed to help them improve.

(5.11.6) Provide details of the environmental requirements that suppliers have to meet as part of your organization's purchasing process, and the compliance measures in place.

Climate change

(5.11.6.1) Environmental requirement

Select from:

- Environmental disclosure through a non-public platform

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

- Certification
- On-site third-party audit
- Supplier self-assessment
- Off-site third-party audit
- Supplier scorecard or rating
- Grievance mechanism/ Whistleblowing hotline
- Other, please specify :LYB surveys

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

51-75%

(5.11.6.7) % tier 1 supplier-related scope 3 emissions attributable to the suppliers required to comply with this environmental requirement

Select from:

76-99%

(5.11.6.8) % tier 1 supplier-related scope 3 emissions attributable to the suppliers in compliance with this environmental requirement

Select from:

1-25%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

1-25%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

- Providing information on appropriate actions that can be taken to address non-compliance

(5.11.6.12) Comment

Note on data availability and traceability in supplier engagements: We strive to provide accurate and auditable data regarding our supplier engagements, particularly in relation to sustainability assessments and due diligence activities. However, the data we can report is inherently limited by the traceability capabilities of our current due diligence platforms. Many initial engagements with suppliers begin through direct communication methods, such as email. In cases where a supplier declines an assessment request, such as an EcoVadis assessment, via email and does not register on the platform, these interactions are not captured within the platform's metrics. Consequently, the data provided represents only the engagements we can systematically audit and account for through our platforms. Therefore, the number of recorded supplier engagements in the data provided is a conservative estimate. The actual number of engagement activities, including those not captured by our due diligence systems, is substantially higher in practice. As a responsible business, we expect our suppliers to comply with applicable laws and internationally recognized standards, conduct business ethically and share the principles set out in our Supplier Code of Conduct. To support this endeavor, we utilize EcoVadis assessments and Together for Sustainability (TfS) audits, which offer transparency and valuable insights into our suppliers' sustainability performance and supply chain.

Water

(5.11.6.1) Environmental requirement

Select from:

- Environmental disclosure through a non-public platform

(5.11.6.2) Mechanisms for monitoring compliance with this environmental requirement

Select all that apply

- Certification
- On-site third-party audit
- Supplier self-assessment
- Off-site third-party audit
- Supplier scorecard or rating
- Grievance mechanism/ Whistleblowing hotline
- Other, please specify :LYB surveys

(5.11.6.3) % tier 1 suppliers by procurement spend required to comply with this environmental requirement

Select from:

100%

(5.11.6.4) % tier 1 suppliers by procurement spend in compliance with this environmental requirement

Select from:

51-75%

(5.11.6.5) % tier 1 suppliers with substantive environmental dependencies and/or impacts related to this environmental issue required to comply with this environmental requirement

Select from:

100%

(5.11.6.6) % tier 1 suppliers with substantive environmental dependencies and/or impacts related to this environmental issue that are in compliance with this environmental requirement

Select from:

51-75%

(5.11.6.9) Response to supplier non-compliance with this environmental requirement

Select from:

Retain and engage

(5.11.6.10) % of non-compliant suppliers engaged

Select from:

1-25%

(5.11.6.11) Procedures to engage non-compliant suppliers

Select all that apply

- Providing information on appropriate actions that can be taken to address non-compliance

(5.11.6.12) Comment

Note on data availability and traceability in supplier engagements: We strive to provide accurate and auditable data regarding our supplier engagements, particularly in relation to sustainability assessments and due diligence activities. However, the data we can report is inherently limited by the traceability capabilities of our current due diligence platforms. Many initial engagements with suppliers begin through direct communication methods, such as email. In cases where a supplier declines an assessment request, such as an EcoVadis assessment, via email and does not register on the platform, these interactions are not captured within the platform's metrics. Consequently, the data provided represents only the engagements we can systematically audit and account for through our platforms. Therefore, the number of recorded supplier engagements in the data provided is a conservative estimate. The actual number of engagement activities, including those not captured by our due diligence systems, is substantially higher in practice. As a responsible business, we expect our suppliers to comply with applicable laws and internationally recognized standards, conduct business ethically and share the principles set out in our Supplier Code of Conduct. To support this endeavor, we utilize EcoVadis assessments and Together for Sustainability (TfS) audits, which offer transparency and valuable insights into our suppliers' sustainability performance and supply chain.

[Add row]

(5.11.7) Provide further details of your organization's supplier engagement on environmental issues.

Climate change

(5.11.7.2) Action driven by supplier engagement

Select from:

- Other, please specify :Emissions reduction and Product Carbon Footprint (PCF) sharing

(5.11.7.3) Type and details of engagement

Capacity building

- Provide training, support and best practices on how to measure GHG emissions
- Provide training, support and best practices on how to mitigate environmental impact
- Support suppliers to set their own environmental commitments across their operations

Information collection

- Collect environmental risk and opportunity information at least annually from suppliers
- Collect GHG emissions data at least annually from suppliers
- Collect targets information at least annually from suppliers

Innovation and collaboration

- Collaborate with suppliers on innovations to reduce environmental impacts in products and services
- Facilitate adoption of a unified climate transition approach with suppliers

(5.11.7.4) Upstream value chain coverage

Select all that apply

- Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

- 76-99%

(5.11.7.6) % of tier 1 supplier-related scope 3 emissions covered by engagement

Select from:

- 76-99%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

Measure of success: Our engagement focuses on Product Carbon Footprint (PCF) data collection and building stronger relationships with our suppliers. Our key measure of success is achieving 100% PCF data collection from all suppliers. Our current status is less than 1%. We aim to drive meaningful progress in our sustainability efforts by prioritizing collaboration and data transparency. Impact of engagement: By pursuing this goal and our engagement with suppliers, we support the objectives of the Paris Agreement and strengthen our relationship with our suppliers to work towards a low carbon value chain. With emissions from procured goods representing a material portion of our overall product carbon footprint, obtaining primary PCF data from our suppliers allows us to better understand the baseline footprint of our products and develop strategies to best reduce that footprint. With emissions from our suppliers an important share of our overall scope 3 emissions, engaging with our suppliers in this way supports our work towards fulfilling our commitment to reducing our scope 3 emissions by 30% by using different levers.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

- Yes, please specify the environmental requirement :Aligning with the Paris Agreement targets.

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

- Unknown

Forests

(5.11.7.1) Commodity

Select from:

- Palm oil

(5.11.7.2) Action driven by supplier engagement

Select from:

- No deforestation and/or conversion of other natural ecosystems

(5.11.7.3) Type and details of engagement

Capacity building

- Develop or distribute resources on how to map upstream value chain

Information collection

- Other information collection activity, please specify :Collect origins of forest risk commodities

(5.11.7.4) Upstream value chain coverage

Select all that apply

Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

Unknown

(5.11.7.7) % tier 1 suppliers with substantive impacts and/or dependencies related to this environmental issue covered by engagement

Select from:

Unknown

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

Unknown

Water

(5.11.7.2) Action driven by supplier engagement

Select from:

Waste and resource reduction and improved end-of-life management

(5.11.7.3) Type and details of engagement

Information collection

- Collect targets information at least annually from suppliers
- Collect water quality information at least annually from suppliers (e.g., discharge quality, pollution incidents, hazardous substances)

(5.11.7.4) Upstream value chain coverage

Select all that apply

- Tier 1 suppliers

(5.11.7.5) % of tier 1 suppliers by procurement spend covered by engagement

Select from:

- 76-99%

(5.11.7.7) % tier 1 suppliers with substantive impacts and/or dependencies related to this environmental issue covered by engagement

Select from:

- 1-25%

(5.11.7.9) Describe the engagement and explain the effect of your engagement on the selected environmental action

By leveraging platforms like EcoVadis and conducting TfS audits, we actively engage with our suppliers on water-related issues. By integrating these information collection activities into our supplier risk assessment processes, we gain insights into suppliers' water management practices. This engagement helps identify areas where suppliers need to improve their water usage and pollution control measures. The effect of this engagement is enhanced transparency and accountability in water management, helping promote improved water quality, reduced environmental impact, and better resource management across our supply chain.

(5.11.7.10) Engagement is helping your tier 1 suppliers meet an environmental requirement related to this environmental issue

Select from:

- Yes, please specify the environmental requirement :Completing an EcoVadis assessment

(5.11.7.11) Engagement is helping your tier 1 suppliers engage with their own suppliers on the selected action

Select from:

- Unknown

[Add row]

(5.11.9) Provide details of any environmental engagement activity with other stakeholders in the value chain.

Climate change

(5.11.9.1) Type of stakeholder

Select from:

- Customers

(5.11.9.2) Type and details of engagement

Education/Information sharing

- Share information about your products and relevant certification schemes
- Share information on environmental initiatives, progress and achievements

Innovation and collaboration

- Align your organization's goals to support customers' targets and ambitions
- Collaborate with stakeholders on innovations to reduce environmental impacts in products and services

(5.11.9.3) % of stakeholder type engaged

Select from:

Unknown

(5.11.9.4) % stakeholder-associated scope 3 emissions

Select from:

Unknown

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

At LyondellBasell, our purpose is creating solutions for everyday sustainable living. In March of 2023, we announced our new company strategy focused on three pillars, one of which is building a profitable Circular & Low Carbon Solutions business. Engaging with our customers to create solutions that deliver sustainability benefits is central to our purpose and strategy. For example, we are collaborating with a number of customers to develop end products based on circular and renewable material. This has resulted in bringing to the market products that have a lower carbon footprint compared to products manufactured from fossil-based materials. We have a goal to produce and market at least two million metric tons of recycled and renewable-based polymers annually by 2030, which represents approximately 20% of our 2023 global sales of polyethylene and polypropylene. As we market and sell circular and low carbon solutions, we can reduce the carbon footprint of our products, and our customers' scope 3 emissions. Additionally, in 2022, we formed the Customer and Commercial Excellence group to enhance our customer focus and ensure the customer's experience from beginning to end is consistent in quality, service, and innovation. We engage regularly with customers to improve our products, respond to their needs and support sustainability commitments along the value chain. We also use customer surveys as a feedback mechanism. Our sales representatives and technical experts work closely with customers to address concerns and provide product stewardship information. According to their requirements, customers visit our manufacturing sites to review our operations and observe our compliance with international standards.

(5.11.9.6) Effect of engagement and measures of success

The success of our corporate strategy to build a profitable Circular & Low Carbon Solutions (CLCS) business can be measured by incremental EBITDA generated. We are expecting our CLCS business to grow to at least 1 billion USD in incremental EBITDA by 2030. CLCS incremental EBITDA is estimated EBITDA that is incremental to LyondellBasell's fossil-based Olefins & Polyolefins Americas and Olefins & Polyolefins Europe, Asia, International annual EBITDA. CLCS incremental EBITDA cannot be reconciled to net income due to the inherent difficulty in quantifying certain amounts that are necessary for such reconciliation at the strategic initiative and business unit level, including adjustments that could be made for interest expense (net), provision for (benefit from) income taxes and depreciation & amortization, the amounts of which, based on historical experience, could be significant. The roll-out of our corporate strategy and CLCS business supports low carbon innovation in close collaboration with our customers. As a result, we can reduce the carbon footprint of our products and our customers' scope 3 emissions. Successful collaborations with our customers include our collaboration with Nippon Paint China, a top household paint brand among Chinese consumers, creating packaging using our CirculenRecover mechanically recycled polymer resins, and our collaboration with TSL, a sports equipment specialist, on the creation of an innovative snowshoe with recycled content.

Climate change

(5.11.9.1) Type of stakeholder

Select from:

- Investors and shareholders

(5.11.9.2) Type and details of engagement

Education/Information sharing

- Share information about your products and relevant certification schemes
- Other education/information sharing, please specify

Innovation and collaboration

- Align your organization's goals to support customers' targets and ambitions
- Collaborate with stakeholders on innovations to reduce environmental impacts in products and services

(5.11.9.3) % of stakeholder type engaged

Select from:

- 26-50%

(5.11.9.4) % stakeholder-associated scope 3 emissions

Select from:

- None

(5.11.9.5) Rationale for engaging these stakeholders and scope of engagement

We engage with shareholders and potential investors on our climate change strategy as it is an integral part of the investment making decision for many investors. Engagement with shareholders occurs in one-on-one meetings and calls with shareholder representatives, at our annual general meeting of shareholders, and through our regular participation in industry conferences, investor road shows, and analyst meetings. Throughout the year, we discussed the company's strategy and environmental, social, and governance profile with multiple investors and engaged with their questions or concerns on these and other topics. Our Chief Sustainability

Officer regularly joins meetings to discuss our climate and sustainability ambitions. In addition, our independent Board Chair has joined these discussions when requested. Management updates the Board regularly on conversations with shareholders and feedback received. We are committed to remaining proactive in our engagement efforts and shareholder outreach. We engage with shareholders and potential investors on our climate change strategy to understand investors' emission reduction ambitions, and how they seek to align their own targets for emission reduction with the companies in which they invest. We seek and obtain feedback from shareholders and prospective investors on our climate change strategy in order to discuss our areas of strengths and opportunities for improvement.

(5.11.9.6) Effect of engagement and measures of success

The success of our engagement strategy with our shareholders is shown by the consistent and increasing holdings by investors with high sustainability hurdles for investment, and by shareholders with a mandate to invest in companies making a positive contribution to global emission reduction and achieving UN SDGs.

[Add row]

C6. Environmental Performance - Consolidation Approach

(6.1) Provide details on your chosen consolidation approach for the calculation of environmental performance data.

Climate change

(6.1.1) Consolidation approach used

Select from:

Operational control

(6.1.2) Provide the rationale for the choice of consolidation approach

We have used the same consolidation approach in this report as used in our 2023 Sustainability Report. Both reports cover the period from January 1 to December 31, 2023, and include sustainability performance information related to LyondellBasell Industries N.V. (LYB). We include consolidated data from the operations over which we, or one of our subsidiaries, have operational control. The narrative may include our non-operated joint ventures and global activities that occurred during the 2023 calendar year. Financial data includes our joint ventures to the extent appropriate under Generally Accepted Accounting Principles in the U.S. (U.S. GAAP). Consolidated Financial Statements are prepared from the books and records of LYB.

Forests

(6.1.1) Consolidation approach used

Select from:

Operational control

(6.1.2) Provide the rationale for the choice of consolidation approach

We have used the same consolidation approach in this report as used in our 2023 Sustainability Report. Both reports cover the period from January 1 to December 31, 2023, and include sustainability performance information related to LyondellBasell Industries N.V. (LYB). We include consolidated data from the operations over which we, or one of our subsidiaries, have operational control. The narrative may include our non-operated joint ventures and global activities that occurred during the 2023 calendar year. Financial data includes our joint ventures to the extent appropriate under Generally Accepted Accounting Principles in the U.S. (U.S. GAAP). Consolidated Financial Statements are prepared from the books and records of LYB.

Water

(6.1.1) Consolidation approach used

Select from:

Operational control

(6.1.2) Provide the rationale for the choice of consolidation approach

We have used the same consolidation approach in this report as used in our 2023 Sustainability Report. Both reports cover the period from January 1 to December 31, 2023, and include sustainability performance information related to LyondellBasell Industries N.V. (LYB). We include consolidated data from the operations over which we, or one of our subsidiaries, have operational control. The narrative may include our non-operated joint ventures and global activities that occurred during the 2023 calendar year. Financial data includes our joint ventures to the extent appropriate under Generally Accepted Accounting Principles in the U.S. (U.S. GAAP). Consolidated Financial Statements are prepared from the books and records of LYB.

Plastics

(6.1.1) Consolidation approach used

Select from:

Operational control

(6.1.2) Provide the rationale for the choice of consolidation approach

We have used the same consolidation approach in this report as used in our 2023 Sustainability Report. Both reports cover the period from January 1 to December 31, 2023, and include sustainability performance information related to LyondellBasell Industries N.V. (LYB). We include consolidated data from the operations over which we, or one of our subsidiaries, have operational control. The narrative may include our non-operated joint ventures and global activities that occurred during the 2023 calendar year. Financial data includes our joint ventures to the extent appropriate under Generally Accepted Accounting Principles in the U.S. (U.S. GAAP). Consolidated Financial Statements are prepared from the books and records of LYB.

Biodiversity

(6.1.1) Consolidation approach used

Select from:

Operational control

(6.1.2) Provide the rationale for the choice of consolidation approach

We have used the same consolidation approach in this report as used in our 2023 Sustainability Report. Both reports cover the period from January 1 to December 31, 2023, and include sustainability performance information related to LyondellBasell Industries N.V. (LYB). We include consolidated data from the operations over which we, or one of our subsidiaries, have operational control. The narrative may include our non-operated joint ventures and global activities that occurred during the 2023 calendar year. Financial data includes our joint ventures to the extent appropriate under Generally Accepted Accounting Principles in the U.S. (U.S. GAAP). Consolidated Financial Statements are prepared from the books and records of LYB.

[Fixed row]

C7. Environmental performance - Climate Change

(7.1.1) 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?

(7.1.1.1) Has there been a structural change?

Select all that apply

Yes, an acquisition

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

Quality Circular Polymers (QCP) BV, Mepol Group

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

In April 2023, we acquired 100% ownership of Quality Circular Polymers (QCP) BV with mechanical recycling locations in Belgium and the Netherlands. QCP is an industry-leading mechanical recycling company with a production capacity of 55,000 metric tons per year. The QCP site in Geleen, the Netherlands, produces high-quality high-density polyethylene (HDPE) and polypropylene (PP) polymers from post-consumer plastic waste. In July 2023, we also completed the acquisition of Mepol Group, a manufacturer of recycled, high-performing technical compounds located in Italy and Poland, which will operate under our APS business unit. By combining Mepol's deep expertise in recycled compounds with the strategy and scale of LYB, we see opportunities to accelerate the growth of our APS business. [Fixed row]

(7.1.2) 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?
	Select all that apply <input checked="" type="checkbox"/> No

[Fixed row]

(7.1.3) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in 7.1.1 and/or 7.1.2?

(7.1.3.1) Base year recalculation

Select from:

No, because we do not have the data yet and plan to recalculate next year

(7.1.3.3) Base year emissions recalculation policy, including significance threshold

We follow an operational control accounting approach in line with the GHG Protocol developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) for our emissions reporting and account for 100% of GHG emissions from assets under our operational control. Emissions from our non-operated assets are accounted for in our scope 3 (category 15). We recalculate our baseline emissions in the event of divestments and acquisitions. In 2023, we engaged an external auditing firm, PricewaterhouseCoopers LLP (PwC), to perform a limited assurance engagement over our scope 1 and 2 emissions data and our total energy consumption data. We are also working toward enhancing our data collection systems and data control processes for other climate and sustainability-related data to obtain assurance in future years.

(7.1.3.4) Past years' recalculation

Select from:

No

[Fixed row]

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

	Scope 2, location-based	Scope 2, market-based	Comment
	Select from: <input checked="" type="checkbox"/> We are reporting a Scope 2, location-based figure	Select from: <input checked="" type="checkbox"/> We are reporting a Scope 2, market-based figure	

[Fixed row]

(7.4.1) Provide details of the sources of Scope 1, Scope 2, or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure.

Row 1

(7.4.1.1) Source of excluded emissions

Small office facilities and service buildings

(7.4.1.2) Scope(s) or Scope 3 category(ies)

Select all that apply

- Scope 2 (location-based)
- Scope 2 (market-based)

(7.4.1.4) Relevance of location-based Scope 2 emissions from this source

Select from:

- Emissions are not relevant

(7.4.1.5) Relevance of market-based Scope 2 emissions from this source

Select from:

- Emissions are not relevant

(7.4.1.10) Explain why this source is excluded

These emissions are immaterial against total scope 1 and 2 emissions. There are no scope 1 emissions associated with these sites.

(7.4.1.11) Explain how you estimated the percentage of emissions this excluded source represents

We assessed energy consumption and associated scope 2 emissions from our small office facilities based on utility invoices and compared them with our total scope 2 emissions.

Row 2

(7.4.1.1) Source of excluded emissions

Combustion related to emissions from LyondellBasell owned or leased motor vehicles

(7.4.1.2) Scope(s) or Scope 3 category(ies)

- Scope 1

(7.4.1.3) Relevance of Scope 1 emissions from this source

Select from:

Emissions are not relevant

(7.4.1.10) Explain why this source is excluded

These emissions are immaterial against total scope 1 emissions from the combustion of fuel used in our manufacturing processes.

(7.4.1.11) Explain how you estimated the percentage of emissions this excluded source represents

We assessed fuel consumption volumes for non-stationary equipment at our largest European site and compared them with our total fuel consumption figures for our production assets and associated scope 1 emissions.

Row 3

(7.4.1.1) Source of excluded emissions

Combustion related to emissions from non-stationary leased and rented equipment such as temporary air compressors and pumps, welding machines, and mobile light plants used onsite

(7.4.1.2) Scope(s) or Scope 3 category(ies)

Select all that apply

Scope 1

(7.4.1.3) Relevance of Scope 1 emissions from this source

Select from:

Emissions are not relevant

(7.4.1.10) Explain why this source is excluded

These emissions are immaterial against total scope 2 emissions from the procurement of steam and electricity.

(7.4.1.11) Explain how you estimated the percentage of emissions this excluded source represents

We assessed fuel consumption volumes for non-stationary equipment at our largest European site and compared them with our total fuel consumption figures for our production assets and associated scope 1 emissions.

Row 4

(7.4.1.1) Source of excluded emissions

District heating and cooling

(7.4.1.2) Scope(s) or Scope 3 category(ies)

Select all that apply

- Scope 2 (location-based)
- Scope 2 (market-based)

(7.4.1.4) Relevance of location-based Scope 2 emissions from this source

Select from:

- Emissions are not relevant

(7.4.1.5) Relevance of market-based Scope 2 emissions from this source

Select from:

- Emissions are not relevant

(7.4.1.10) Explain why this source is excluded

These emissions are immaterial against total scope 2 emissions from the procurement of steam and electricity.

(7.4.1.11) Explain how you estimated the percentage of emissions this excluded source represents

LyondellBasell does not purchase district heating or cooling.

Row 5

(7.4.1.1) Source of excluded emissions

Cooling water and chilled water purchased from third party suppliers

(7.4.1.2) Scope(s) or Scope 3 category(ies)

Select all that apply

- Scope 2 (location-based)
- Scope 2 (market-based)

(7.4.1.4) Relevance of location-based Scope 2 emissions from this source

Select from:

- Emissions are not relevant

(7.4.1.5) Relevance of market-based Scope 2 emissions from this source

Select from:

- Emissions are not relevant

(7.4.1.10) Explain why this source is excluded

These emissions are immaterial against total scope 2 emissions from the procurement of steam and electricity.

(7.4.1.11) Explain how you estimated the percentage of emissions this excluded source represents

We assessed the number of sites with no cooling water onsite facilities and used as proxy the associated fuel consumption from our own cooling facilities. Given the number of sites with no cooling water onsite facilities, associated emissions were found immaterial against total scope 2 emissions.

Row 6

(7.4.1.1) Source of excluded emissions

Compressed air or nitrogen purchased from third party suppliers

(7.4.1.2) Scope(s) or Scope 3 category(ies)

Select all that apply

- Scope 2 (location-based)
- Scope 2 (market-based)

(7.4.1.4) Relevance of location-based Scope 2 emissions from this source

Select from:

- Emissions are not relevant

(7.4.1.5) Relevance of market-based Scope 2 emissions from this source

Select from:

- Emissions are not relevant

(7.4.1.10) Explain why this source is excluded

These emissions are immaterial against total scope 2 emissions from the procurement of steam and electricity.

(7.4.1.11) Explain how you estimated the percentage of emissions this excluded source represents

We assessed the number of sites with no compressed air onsite facilities, and used as proxy the associated fuel consumption from our own compressed air facilities. Given the number of sites with no compressed air onsite facilities, associated emissions were found immaterial against total scope 2 emissions.

Row 7

(7.4.1.1) Source of excluded emissions

Procurement of services and packaging

(7.4.1.2) Scope(s) or Scope 3 category(ies)

Select all that apply

Scope 3: Purchased goods and services

(7.4.1.6) Relevance of Scope 3 emissions from this source

Select from:

Emissions are not relevant

(7.4.1.9) Estimated percentage of total Scope 3 emissions this excluded source represents

0

(7.4.1.10) Explain why this source is excluded

These emissions are immaterial against total scope 3 category 1 emissions, in particular from the procurement of feedstocks.

(7.4.1.11) Explain how you estimated the percentage of emissions this excluded source represents

We assessed spend volumes for procurement of services which were found to be immaterial against larger spend areas such as feedstock procurement.

Row 8

(7.4.1.1) Source of excluded emissions

Category 3 emissions linked to scope 2 exclusions

(7.4.1.2) Scope(s) or Scope 3 category(ies)

Select all that apply

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

(7.4.1.6) Relevance of Scope 3 emissions from this source

Select from:

- Emissions are not relevant

(7.4.1.9) Estimated percentage of total Scope 3 emissions this excluded source represents

0

(7.4.1.10) Explain why this source is excluded

Associated scope 3 emissions linked to excluded scope 2 emission sources were not included in our scope 3 inventory.

(7.4.1.11) Explain how you estimated the percentage of emissions this excluded source represents

We assessed scope 2 emission sources against our total emissions for several sites and found them to be immaterial. This follows the logic of excluding these emissions sources from our scope 2 inventory.

Row 9

(7.4.1.1) Source of excluded emissions

Transportation of non feedstock related raw materials

(7.4.1.2) Scope(s) or Scope 3 category(ies)

Select all that apply

- Scope 3: Upstream transportation and distribution

(7.4.1.6) Relevance of Scope 3 emissions from this source

Select from:

Emissions are not relevant

(7.4.1.9) Estimated percentage of total Scope 3 emissions this excluded source represents

0

(7.4.1.10) Explain why this source is excluded

These emissions are immaterial against total scope 3 emissions.

(7.4.1.11) Explain how you estimated the percentage of emissions this excluded source represents

Estimates were conducted for the emissions linked to the transportation of non feedstock related raw materials which was found to be immaterial against total scope 3 emissions.

Row 10

(7.4.1.1) Source of excluded emissions

Business travel linked to use of personal vehicles, rail and bus

(7.4.1.2) Scope(s) or Scope 3 category(ies)

Select all that apply

Scope 3: Business travel

(7.4.1.6) Relevance of Scope 3 emissions from this source

Select from:

Emissions are not relevant

(7.4.1.9) Estimated percentage of total Scope 3 emissions this excluded source represents

0

(7.4.1.10) Explain why this source is excluded

These emissions are immaterial against total scope 3 emissions.

(7.4.1.11) Explain how you estimated the percentage of emissions this excluded source represents

Estimates were conducted for the amount of fuel spent on business travel and was found to be immaterial against total scope 3 emissions.

[Add row]

(7.5) Provide your base year and base year emissions.

Scope 1

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO₂e)

15556728

(7.5.3) Methodological details

Scope 1 emission inventory covering all greenhouse gases including emissions from the onsite combustion of fuels for energy and process-related emissions. Accounting principles and methodology are in line with the GHG Protocol Corporate Standard – see exclusions listed in C7.4.1 for scope 1, and methodology frameworks used in 7.2. Heating values and emission factors are referenced from the API Compendium of GHG Emission Methodologies for procured fuels. Heating values and emission factors for site-specific fuels produced as a by-product of our manufacturing processes are referenced and compiled using site-specific data.

Scope 2 (location-based)

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

7112280

(7.5.3) Methodological details

Scope 2 emission inventory covers emissions from purchased steam and electricity. Accounting principles and methodology are in line with the GHG Protocol Corporate Standard and associated Scope 2 guidance - see exclusions listed in C7.4.1 for scope 2 (location-based), and methodology frameworks used in 7.2. Location-based emission factors are sourced from the International Energy Agency Emission Factors 2023.

Scope 2 (market-based)

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

7623272

(7.5.3) Methodological details

Scope 2 emission inventory covers emissions from purchased steam and electricity. Accounting principles and methodology are in line with the GHG Protocol Corporate Standard and associated Scope 2 guidance - see exclusions listed in C7.4.1 for scope 2 (market-based), and methodology frameworks used in 7.2. Market-based emission factors are obtained directly from utility suppliers if possible, and substituted with location-based emission factors otherwise. Coverage of supplier-specific emission factors

Scope 3 category 1: Purchased goods and services

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

26972024

(7.5.3) Methodological details

Average data: Data Quantity (mass and volume) of the goods and services, namely refining and petrochemical feedstocks, additives, chemicals, and catalysts were obtained from our internal management systems. Emission factors were sourced from internal and customer LCA studies, and complemented by different commercial and public data sources, includingecoinvent, Gabi, PlasticsEurope, and regional regulatory databases.

Scope 3 category 2: Capital goods

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

1380110

(7.5.3) Methodological details

Spend based: Data relating to capital expenditures for property, plant and equipment for the year ended December 31, 2022, was used as the calculation basis, reflecting the spend on capital projects, equipment upgrades and replacement.

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

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

1952074

(7.5.3) Methodological details

Average data: Data Quantity (mass and volume) of fuels used in our operations were obtained from our internal management systems. Emission factors were sourced from different commercial and public data sources, including ecoinvent, Gabi, PlasticsEurope, and regional regulatory databases.

Scope 3 category 4: Upstream transportation and distribution

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

959462

(7.5.3) Methodological details

Distance based: Data on the transportation of our purchased goods and finished goods, including transport mode, tonnage and distance data, was compiled for each region from our internal management systems. Emission factors were sourced primarily from the GLEC framework for the chemical industry that was developed in a joint study led by Cefic and the Smart Freight Centre.

Scope 3 category 5: Waste generated in operations

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

309599

(7.5.3) Methodological details

Average data: Waste tonnage data for each type of waste treatment (incineration, recycling, landfill, etc) was compiled from our internal management systems for all our operations. Emission factors were sourced from different commercial and public data sources, including ecoinvent, Gabi, PlasticsEurope, and regional regulatory databases.

Scope 3 category 6: Business travel

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

1055

(7.5.3) Methodological details

Distance based: Business travel emissions arising from business travel for our employees globally with a permanent or temporary employment relationship with LyondellBasell. Emissions from business air travel also include other non-CO2 radioactive forcing effects of aviation (including water vapor, contrails, nitrogen oxides (NOx), etc.). HFCs, PFCs, NF3, and SF6 are not emitted as a result of LyondellBasell's business-related air travel and rental car activities. Air travel booked through our third-party travel agency: GHG emissions as provided by our third-party travel agency, which were calculated based on distance travelled (i.e., haul categories: short, medium, and long-haul), class type (i.e., first, business, premium economy, economy, and other – promo), and the relevant emission factor. Air travel not booked through our third-party travel agency: Identified by comparing air travel spend between our third-party travel agency and our Travel and Expense system. These emissions are approximately 8% of reported Scope 3 emissions – category 6: business travel. Rental car travel GHG emissions were calculated with data from our third-party travel agency, which included the number of car rental days, car size (i.e., small, medium, and SUV/truck), and kilometers travelled per day. The total distance travelled was multiplied by the relevant emission factors. The kilometers per day was assumed to be 82 kilometers, regardless of car size, based on data from the Federal Highway Administration, 2022 NextGen National Household Travel Survey Core Data publication. Rental car travel not booked through our third-party travel agency: Identified by comparing rental car spend between our third-party travel agency and our Travel and Expense system. These emissions are approximately 2% of reported Scope 3 emissions – category 6: business travel. Excluded are emissions from hotel stays, rail travel, bus travel, and taxi / rideshare travel.

Scope 3 category 7: Employee commuting

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

59

(7.5.3) Methodological details

Average data: Data on regional employee numbers were compiled from our internal management systems. The approach taken was to estimate emissions based on regional average commuting modes, and applying emission factors specific to each commuting mode. Emission factors were sourced from regional databases.

Scope 3 category 8: Upstream leased assets

(7.5.3) Methodological details

Scope 3 category 9: Downstream transportation and distribution

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

587890

(7.5.3) Methodological details

Distance based: Data on the transportation of our finished goods, including transport mode, tonnage and distance data, was compiled for each region from our internal management systems. Emission factors were sourced from the GLEC framework for the chemical industry that was developed in a joint study led by Cefic and the Smart Freight Centre. For some transport modalities, we receive GHG data directly from our freight supplier, using the same GLEC methodology.

Scope 3 category 10: Processing of sold products

(7.5.3) Methodological details

Scope 3 category 11: Use of sold products

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

42994244

(7.5.3) Methodological details

Average data: Data Quantity (mass and volume) of fuel products from our refinery operations and oxyfuels business, was compiled from our internal management systems. Emission factors were sourced from different commercial and public data sources, including ecoinvent, Gabi, PlasticsEurope, and regional regulatory databases.

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

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

17248085

(7.5.3) Methodological details

Average data: Data Quantity (mass and volume) for our products, including sold-to region and application, was compiled from our internal management systems. Emission factors were sourced from different commercial and public data sources, including ecoinvent, Gabi, PlasticsEurope, and regional regulatory databases. We considered the product volumes sold in each region for specific applications to calculate emissions in this category. We then applied specific emission factors for each waste treatment type.

Scope 3 category 13: Downstream leased assets

(7.5.3) Methodological details

Scope 3 category 14: Franchises

(7.5.3) Methodological details

Scope 3 category 15: Investments

(7.5.1) Base year end

12/31/2020

(7.5.2) Base year emissions (metric tons CO2e)

2497208

(7.5.3) Methodological details

Spend based: Primary data relating to our equity investments was used as the calculation basis, reflecting our equity investments as of December 31, 2022. CO2 equivalent emissions were calculated on the basis of our equity investments using the GHG Protocol Scope 3 calculator.

Scope 3: Other (upstream)

(7.5.3) Methodological details

Scope 3: Other (downstream)

(7.5.3) Methodological details

[Fixed row]

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

Reporting year

(7.6.1) Gross global Scope 1 emissions (metric tons CO₂e)

15367353

(7.6.3) Methodological details

Scope 1 and 2 emissions are inclusive of the main gases considered under the Protocol and include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and industrial gases such as hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs). The other three gases considered – perfluorocarbons (PFCs), nitrogen trifluoride (NF₃), and sulfur hexafluoride (SF₆) – are not emitted at LyondellBasell's sites. The CO₂ equivalent (CO₂e) emissions utilize Global Warming Potentials (GWPs) defined by the Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report (AR5 – 100 year). CO₂ equivalent emissions are calculated by multiplying actual or estimated energy and fuel usage or refrigerant gas loss by the relevant emission factor and/or GWP. All emission factors are updated annually where applicable. Included in scope 1 GHG emissions are: Emissions resulting from the combustion of fossil fuels used in stationary equipment and machinery at LyondellBasell sites (natural gas, refinery gas, light fuel oil/diesel, heavy fuel oil/diesel, hydrogen, coal, lignite, butene, pitch, and the site-generated fuels of fuel gas/tail gas (a blend of process gases used as fuel onsite), fuel A xTBE (manufacturing of tertiary butyl ethers), fuel A POTBA (propylene oxide/tertiary butyl alcohol), and fuel B). Emissions resulting from venting and flaring activities as well as other process-related GHG emissions which include, but are not limited to, emissions from wastewater treatment (WWT) activities and peroxide decomposition byproducts, at LyondellBasell's sites. Fugitive emissions related to volatile organic compounds (VOCs), including methane, are measured per environmental requirements in CFR Title 40 Chapter I Subchapter C and converted to CO₂e using GWPs from the IPCC Fifth Assessment Report. HCFCs and HFCs are related to replenishment of refrigerants. Refrigerant gases (including refrigerants other than HCFCs and HFCs) are calculated on a loss replenishment basis using site-specific refrigerant management records. The GWP of the individual refrigerant from the IPCC

Fifth Assessment Report is used to convert the losses into CO2e. Direct emissions associated with the sale of energy generated from our own operations to another company are not deducted/netted from Scope 1, in accordance with the recommendations of the Protocol.

[Fixed row]

(7.7) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

(7.7.1) Gross global Scope 2, location-based emissions (metric tons CO2e)

7147799

(7.7.2) Gross global Scope 2, market-based emissions (metric tons CO2e) (if applicable)

6972842

(7.7.4) Methodological details

Scope 1 and 2 emissions are inclusive of the main gases considered under the Protocol and include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and industrial gases such as hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs). The other three gases considered – perfluorocarbons (PFCs), nitrogen trifluoride (NF₃), and sulfur hexafluoride (SF₆) – are not emitted at LyondellBasell's sites. The CO₂e emissions utilize Global Warming Potentials (GWPs) defined by the Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report (AR5 – 100 year). CO₂e emissions are calculated by multiplying actual or estimated energy and fuel usage or refrigerant gas loss by the relevant emission factor and/or GWP. All emission factors are updated annually where applicable. Included in scope 2 GHG emissions are: Emissions resulting from the purchase of energy in the form of electricity or steam used at LyondellBasell sites. Emission factors for steam are provided by the third-party steam supplier. Emission factors for electricity (location-based): In 2023, LyondellBasell changed the source of the emission factors applied for its U.S. and European sites from the International Energy Agency (IEA) to the sources included below. o United States sites: United States (U.S.) Energy Information Administration (EIA), Energy-Related CO₂ Emission Data Tables, Table 6 Carbon intensity of the energy supply by State (1970-2021), release date July 12, 2023 o European sites: European Environment Agency, Greenhouse gas emission intensity of electricity generation in Europe, published October 24, 2023 o Middle East and Asia sites: IEA, Emissions Factors Database, 2023 edition, published September 2023 Emission factors for electricity (market-based): o LyondellBasell used Energy Attribute Certificates (EACs) procured through power purchase agreements during 2023 to procure renewable energy for our manufacturing sites in North America, Europe, Brazil, and Sweden. Any remaining electricity not associated with a contracted and retired EAC was converted to emissions using the emission factor hierarchy described below. o After application of EACs, the emission factors were applied based on the Protocol hierarchy and availability of data, including the factors below listed from highest to lowest precision: 1. Utility-specific market-based emission factors provided by the utility suppliers. 2. Other grid-average emission factors – same as location-based.

[Fixed row]

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

Purchased goods and services

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

29696640

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0.55

(7.8.5) Please explain

Data Quantity (mass and volume) of the goods and services, namely refining and petrochemical feedstocks, additives, chemicals, and catalysts were obtained from our internal management systems. Emission factors were sourced from internal and customer LCA studies, and complemented by different commercial and public data sources, including ecoinvent, Gabi, PlasticsEurope, and regional regulatory databases. While we recognize the materiality, and importance of procured goods and services, and feedstocks in particular, on our scope 3 and overall emissions, it is important to note that the chemical industry lacks today a rigorous emission accounting methodology for scope 3 emissions, a prerequisite for the calculation of emissions in all 15 categories of scope 3, and for the definition of a reliable baseline. LyondellBasell has participated alongside our industry peers in Together for Sustainability in the development of the Product Carbon Footprint Guideline, which we are working to deploy with our suppliers today. LyondellBasell is engaged alongside our industry peers in several initiatives, including in Together for Sustainability, to further understand, and act upon, the common challenges of the chemical industry in accurately quantifying and dealing with scope 3 emissions.

Capital goods

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

1085183

(7.8.3) Emissions calculation methodology

Select all that apply

Spend-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Data relating to capital expenditures for property, plant and equipment for the year ended December 31, 2022, was used as the calculation basis, reflecting the spend on capital projects, equipment upgrades and replacement.

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

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

2374122

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Data Quantity (mass and volume) of fuels used in our operations were obtained from our internal management systems. Emission factors were sourced from different commercial and public data sources, including ecoinvent, Gabi, PlasticsEurope, and regional regulatory databases

Upstream transportation and distribution

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

1075778

(7.8.3) Emissions calculation methodology

Select all that apply

Distance-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

6.66

(7.8.5) Please explain

Data on the transportation of our purchased goods and sold products, including transport mode, tonnage and distance data, was compiled for each region from our internal management systems. Emission factors were sourced primarily from the GLEC framework for the chemical industry that was developed in a joint study led by Cefic and the Smart Freight Centre.

Waste generated in operations

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

62862

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Waste tonnage data for each type of waste treatment (incineration, recycling, landfill, etc) was compiled from our internal management systems for all our operations. Emission factors were sourced from different commercial and public data sources, including ecoinvent, Gabi, PlasticsEurope, and regional regulatory databases.

Business travel

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

12149

(7.8.3) Emissions calculation methodology

Select all that apply

Distance-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

91

(7.8.5) Please explain

Distance based: Business travel emissions arising from business travel for our employees globally with a permanent or temporary employment relationship with LyondellBasell. Emissions from business air travel also include other non-CO₂ radioactive forcing effects of aviation (including water vapor, contrails, nitrogen oxides (NO_x), etc.). HFCs, PFCs, NF₃, and SF₆ are not emitted as a result of LyondellBasell's business-related air travel and rental car activities. Air travel booked through our third-party travel agency: GHG emissions as provided by our third-party travel agency, which were calculated based on distance travelled (i.e., haul categories: short, medium, and long-haul), class type (i.e., first, business, premium economy, economy, and other – promo), and the relevant emission factor. Air travel not booked through our third-party travel agency: Identified by comparing air travel spend between our third-party travel agency and our Travel and Expense system. These emissions are approximately 8% of reported Scope 3 emissions – category 6: business travel. Rental car travel GHG emissions were calculated with data from our third-party travel agency, which included the number of car rental days, car size (i.e., small, medium, and SUV/truck), and kilometers travelled per day. The total distance travelled was multiplied by the relevant emission factors. The kilometers per day was assumed to be 82 kilometers, regardless of car size, based on data from the Federal Highway Administration, 2022 NextGen National Household Travel Survey Core Data publication. Rental car travel not booked through our third-party travel agency: Identified by comparing rental car spend between our third-party travel agency and our Travel and Expense system. These emissions are approximately 2% of reported Scope 3 emissions – category 6: business travel. Excluded are emissions from hotel stays, rail travel, bus travel, and taxi / rideshare travel.

Employee commuting

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

63

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Data on regional employee numbers was compiled from our internal management systems. The approach taken was to estimate emissions based on regional average commuting modes and applying emission factors specific to each commuting mode. Emission factors were sourced from regional databases.

Upstream leased assets

(7.8.1) Evaluation status

Select from:

Not relevant, explanation provided

(7.8.5) Please explain

LyondellBasell does not lease any significant upstream assets

Downstream transportation and distribution

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

588570

(7.8.3) Emissions calculation methodology

Select all that apply

Distance-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Data on the transportation of our finished goods, including transport mode, tonnage, and distance data, was compiled for each region from our internal management systems. Emission factors were sourced from the GLEC framework for the chemical industry that was developed in a joint study led by Cefic and the Smart Freight Centre. For some transport modalities, we receive GHG data directly from our freight supplier, using the same GLEC methodology.

Processing of sold products

(7.8.1) Evaluation status

Select from:

Relevant, not yet calculated

(7.8.5) Please explain

LyondellBasell does not calculate scope 3 emissions linked to the processing of sold products. Given the many end use applications for our products, and as stated in the WBCSD Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain, “chemical companies are not required to report scope 3, category 10 emissions, since reliable figures are difficult to obtain due to the diverse application and customer structure”. Our portfolio of products includes a diverse range of products, from polymers to different intermediate chemicals, with reliable data difficult to obtain. This absence of a standard methodology for accounting is a recognized gap that we are working towards addressing as part of industry led efforts through Cefic.

Use of sold products

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

47374053

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Data Quantity (mass and volume) of fuel products from our refinery operations, olefin operations and oxyfuels business, was compiled from our internal management systems. Emission factors were sourced from different commercial and public data sources, including ecoinvent, Gabi, PlasticsEurope, and regional regulatory databases

End of life treatment of sold products

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

14893835

(7.8.3) Emissions calculation methodology

Select all that apply

Average data method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Data Quantity (mass and volume) for our products, including sold-to region and application, was compiled from our internal management systems. Emission factors were sourced from different commercial and public data sources, including ecoinvent, Gabi, PlasticsEurope, and regional regulatory databases. We considered the product volumes sold in each region for specific applications to calculate emissions in this category. We then applied specific emission factors for each waste treatment type.

Downstream leased assets

(7.8.1) Evaluation status

Select from:

Not relevant, explanation provided

(7.8.5) Please explain

LyondellBasell does not lease any significant downstream assets

Franchises

(7.8.1) Evaluation status

Select from:

Not relevant, explanation provided

(7.8.5) Please explain

LyondellBasell has no franchised businesses or assets

Investments

(7.8.1) Evaluation status

Select from:

Relevant, calculated

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

2122947

(7.8.3) Emissions calculation methodology

Select all that apply

Spend-based method

(7.8.4) Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

(7.8.5) Please explain

Primary data relating to our equity investments was used as the calculation basis, reflecting our equity investments as of December 31, 2022. CO2 equivalent emissions were calculated on the basis of our equity investments using the GHG Protocol Scope 3 calculator.

Other (upstream)

(7.8.1) Evaluation status

Select from:

Not relevant, explanation provided

(7.8.5) Please explain

LyondellBasell does not have any further upstream emissions to report.

Other (downstream)

(7.8.1) Evaluation status

Select from:

Not relevant, explanation provided

(7.8.5) Please explain

LyondellBasell does not have any further downstream emissions to report.

[Fixed row]

(7.9) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Select from: <input checked="" type="checkbox"/> Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Select from: <input checked="" type="checkbox"/> Third-party verification or assurance process in place
Scope 3	Select from: <input checked="" type="checkbox"/> Third-party verification or assurance process in place

[Fixed row]

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

Row 1

(7.9.1.1) Verification or assurance cycle in place

Select from:

Annual process

(7.9.1.2) Status in the current reporting year

Select from:

Complete

(7.9.1.3) Type of verification or assurance

Select from:

Limited assurance

(7.9.1.4) Attach the statement

2023 Sustainability Report - LYB.pdf

(7.9.1.5) Page/section reference

The Report of Independent Accounts can be found on page 101 of our 2023 Sustainability Report, followed by Management Assertion on pages 102-107. For location-based Scope 1 emissions, see "Related to Scope 1 emissions" on page 103.

(7.9.1.6) Relevant standard

Select from:

Attestation standards established by AICPA (AT105)

(7.9.1.7) Proportion of reported emissions verified (%)

100

[Add row]

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

Row 1

(7.9.2.1) Scope 2 approach

Select from:

Scope 2 location-based

(7.9.2.2) Verification or assurance cycle in place

Select from:

Annual process

(7.9.2.3) Status in the current reporting year

Select from:

Complete

(7.9.2.4) Type of verification or assurance

Select from:

Limited assurance

(7.9.2.5) Attach the statement

2023 Sustainability Report - LYB.pdf

(7.9.2.6) Page/ section reference

The Report of Independent Accounts can be found on page 101 of our 2023 Sustainability Report, followed by Management Assertion on pages 102-107. For location-based Scope 2 emissions, see "Related to Scope 2 emissions" on page 103.

(7.9.2.7) Relevant standard

Select from:

- Attestation standards established by AICPA (AT105)

(7.9.2.8) Proportion of reported emissions verified (%)

100

Row 2

(7.9.2.1) Scope 2 approach

Select from:

- Scope 2 market-based

(7.9.2.2) Verification or assurance cycle in place

Select from:

- Annual process

(7.9.2.3) Status in the current reporting year

Select from:

- Complete

(7.9.2.4) Type of verification or assurance

Select from:

- Limited assurance

(7.9.2.5) Attach the statement

(7.9.2.6) Page/ section reference

The Report of Independent Accounts can be found on page 101 of our 2023 Sustainability Report, followed by Management Assertion on pages 102-107. For market-based Scope 2 emissions, see "Related to Scope 2 emissions" on page 103.

(7.9.2.7) Relevant standard

Select from:

Attestation standards established by AICPA (AT105)

(7.9.2.8) Proportion of reported emissions verified (%)

100

[Add row]

(7.9.3) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Row 1

(7.9.3.1) Scope 3 category

Select all that apply

Scope 3: Business travel

(7.9.3.2) Verification or assurance cycle in place

Select from:

Annual process

(7.9.3.3) Status in the current reporting year

Select from:

Complete

(7.9.3.4) Type of verification or assurance

Select from:

Limited assurance

(7.9.3.5) Attach the statement

LYB 2023 Scope 3 Category 6 ESG Limited Assurance Report.pdf

(7.9.3.6) Page/section reference

The Report of Independent Accountants is on pages 1-2, followed by the Management Assertion on pages 3-5.

(7.9.3.7) Relevant standard

Select from:

Attestation standards established by AICPA (AT105)

(7.9.3.8) Proportion of reported emissions verified (%)

100

Row 3

(7.9.3.1) Scope 3 category

Select all that apply

- Scope 3: Investments
- Scope 3: Use of sold products
- Scope 3: Purchased goods and services
- Scope 3: End-of-life treatment of sold products
- Scope 3: Upstream transportation and distribution
- Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)

(7.9.3.2) Verification or assurance cycle in place

Select from:

- Annual process

(7.9.3.3) Status in the current reporting year

Select from:

- Underway but not complete for current reporting year – first year it has taken place

(7.9.3.4) Type of verification or assurance

Select from:

- Limited assurance

(7.9.3.7) Relevant standard

Select from:

- Attestation standards established by AICPA (AT105)

(7.9.3.8) Proportion of reported emissions verified (%)

100

[Add row]

(7.10.1) 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 renewable energy consumption

(7.10.1.1) Change in emissions (metric tons CO2e)

152721

(7.10.1.2) Direction of change in emissions

Select from:

Decreased

(7.10.1.3) Emissions value (percentage)

0.69

(7.10.1.4) Please explain calculation

*Four projects from our North America portfolio of PPAs became operational in 2023 resulting in 422 GWh of renewable electricity delivered to LYB. These projects allowed us to reduce GHG emissions from our operations by 152,721 metric tons. Our 2022 total market-based scope 1 and 2 footprint was 22,106,789 metric tons. This decrease in emissions corresponded to a 0.69% decrease ($152,721 / 22,106,789 * 100$).*

Other emissions reduction activities

(7.10.1.1) Change in emissions (metric tons CO2e)

321284

(7.10.1.2) Direction of change in emissions

Select from:

Decreased

(7.10.1.3) Emissions value (percentage)

1.45

(7.10.1.4) Please explain calculation

*LyondellBasell avoided 321,284 metric tons of GHG emissions through the implementation of energy saving and GHG emission reduction initiatives. Our 2022 total market-based scope 1 and 2 footprint was 22,106,789 metric tons. The decrease in emissions linked to the implementation of these initiatives corresponded to a 1.45% decrease ($321,284 / 22,106,789 * 100$).*

Change in output

(7.10.1.1) Change in emissions (metric tons CO2e)

707412

(7.10.1.2) Direction of change in emissions

Select from:

Increased

(7.10.1.3) Emissions value (percentage)

3.2

(7.10.1.4) Please explain calculation

*Increases in production volumes in 2023 compared to 2022 resulted in an emission increase of 707,411 metric tons. Our 2022 total scope 1 and 2 footprint was 22,106,789 metric tons. This led to an increase in emissions of 3.2% ($707,411/22,106,789 * 100$).*

[Fixed row]

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

Row 1

(7.15.1.1) Greenhouse gas

Select from:

CO2

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

15327796

(7.15.1.3) GWP Reference

Select from:

IPCC Fifth Assessment Report (AR5 – 100 year)

Row 2

(7.15.1.1) Greenhouse gas

Select from:

CH4

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

43473

(7.15.1.3) GWP Reference

Select from:

IPCC Fifth Assessment Report (AR5 – 100 year)

Row 3

(7.15.1.1) Greenhouse gas

Select from:

N2O

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

24857

(7.15.1.3) GWP Reference

Select from:

IPCC Fifth Assessment Report (AR5 – 100 year)

Row 4

(7.15.1.1) Greenhouse gas

Select from:

HFCs

(7.15.1.2) Scope 1 emissions (metric tons of CO₂e)

39557

(7.15.1.3) GWP Reference

Select from:

IPCC Fifth Assessment Report (AR5 – 100 year)

Row 5

(7.15.1.1) Greenhouse gas

Select from:

PFCs

(7.15.1.2) Scope 1 emissions (metric tons of CO₂e)

0

(7.15.1.3) GWP Reference

Select from:

IPCC Fifth Assessment Report (AR5 – 100 year)

Row 6

(7.15.1.1) Greenhouse gas

Select from:

SF6

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

0

(7.15.1.3) GWP Reference

Select from:

IPCC Fifth Assessment Report (AR5 – 100 year)

Row 7

(7.15.1.1) Greenhouse gas

Select from:

NF3

(7.15.1.2) Scope 1 emissions (metric tons of CO2e)

0

(7.15.1.3) GWP Reference

Select from:

IPCC Fifth Assessment Report (AR5 – 100 year)

[Add row]

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

Belgium

(7.16.1) Scope 1 emissions (metric tons CO2e)

1065

(7.16.2) Scope 2, location-based (metric tons CO2e)

2350

(7.16.3) Scope 2, market-based (metric tons CO2e)

133

Brazil

(7.16.1) Scope 1 emissions (metric tons CO2e)

5

(7.16.2) Scope 2, location-based (metric tons CO2e)

850

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

China

(7.16.1) Scope 1 emissions (metric tons CO2e)

55

(7.16.2) Scope 2, location-based (metric tons CO2e)

30429

(7.16.3) Scope 2, market-based (metric tons CO2e)

14604

Egypt

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

France

(7.16.1) Scope 1 emissions (metric tons CO2e)

1199123

(7.16.2) Scope 2, location-based (metric tons CO2e)

80608

(7.16.3) Scope 2, market-based (metric tons CO2e)

57322

Germany

(7.16.1) Scope 1 emissions (metric tons CO2e)

2243111

(7.16.2) Scope 2, location-based (metric tons CO2e)

389504

(7.16.3) Scope 2, market-based (metric tons CO2e)

641984

Hong Kong SAR, China

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

India

(7.16.1) Scope 1 emissions (metric tons CO2e)

49

(7.16.2) Scope 2, location-based (metric tons CO2e)

10283

(7.16.3) Scope 2, market-based (metric tons CO2e)

4923

Indonesia

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

Italy

(7.16.1) Scope 1 emissions (metric tons CO2e)

54259

(7.16.2) Scope 2, location-based (metric tons CO2e)

99322

(7.16.3) Scope 2, market-based (metric tons CO2e)

131139

Japan

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

Luxembourg

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

Malaysia

(7.16.1) Scope 1 emissions (metric tons CO2e)

171

(7.16.2) Scope 2, location-based (metric tons CO2e)

5346

(7.16.3) Scope 2, market-based (metric tons CO2e)

5600

Mexico

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

11242

(7.16.3) Scope 2, market-based (metric tons CO2e)

13019

Netherlands

(7.16.1) Scope 1 emissions (metric tons CO2e)

663194

(7.16.2) Scope 2, location-based (metric tons CO2e)

508603

(7.16.3) Scope 2, market-based (metric tons CO2e)

511212

Philippines

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

Poland

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

1041

(7.16.3) Scope 2, market-based (metric tons CO2e)

1227

Republic of Korea

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

Saudi Arabia

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

Singapore

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

Spain

(7.16.1) Scope 1 emissions (metric tons CO2e)

2097

(7.16.2) Scope 2, location-based (metric tons CO2e)

31081

(7.16.3) Scope 2, market-based (metric tons CO2e)

24218

Sweden

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

10

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

Taiwan, China

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

Thailand

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

2804

(7.16.3) Scope 2, market-based (metric tons CO2e)

2852

Turkey

(7.16.1) Scope 1 emissions (metric tons CO2e)

662

(7.16.2) Scope 2, location-based (metric tons CO2e)

473

(7.16.3) Scope 2, market-based (metric tons CO2e)

717

United Arab Emirates

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

United Kingdom of Great Britain and Northern Ireland

(7.16.1) Scope 1 emissions (metric tons CO2e)

26690

(7.16.2) Scope 2, location-based (metric tons CO2e)

16418

(7.16.3) Scope 2, market-based (metric tons CO2e)

15108

United States of America

(7.16.1) Scope 1 emissions (metric tons CO2e)

11108543

(7.16.2) Scope 2, location-based (metric tons CO2e)

5942417

(7.16.3) Scope 2, market-based (metric tons CO2e)

5533770

Viet Nam

(7.16.1) Scope 1 emissions (metric tons CO2e)

0

(7.16.2) Scope 2, location-based (metric tons CO2e)

0

(7.16.3) Scope 2, market-based (metric tons CO2e)

0

[Fixed row]

(7.17.1) Break down your total gross global Scope 1 emissions by business division.

	Business division	Scope 1 emissions (metric ton CO2e)
Row 1	<i>O&P Americas</i>	<i>7602105</i>
Row 2	<i>O&P EAI</i>	<i>3592643</i>
Row 3	<i>I&D</i>	<i>2134919</i>
Row 4	<i>Refining</i>	<i>1962573</i>
Row 5	<i>APS</i>	<i>4259</i>
Row 6	<i>Technology</i>	<i>2524</i>

[Add row]

(7.17.2) Break down your total gross global Scope 1 emissions by business facility.

Row 2

(7.17.2.1) Facility

Lake Charles JV

(7.17.2.3) Latitude

30.24622

(7.17.2.4) Longitude

-93.2877

Row 3

(7.17.2.1) Facility

Jackson

(7.17.2.3) Latitude

35.627401

(7.17.2.4) Longitude

-88.777608

Row 4

(7.17.2.1) Facility

Rio Claro, Brazil

(7.17.2.3) Latitude

-22.368499

(7.17.2.4) Longitude

-47.554095

Row 5

(7.17.2.1) Facility

Seevetal, Germany

(7.17.2.3) Latitude

53.424034

(7.17.2.4) Longitude

10.03541

Row 6

(7.17.2.1) Facility

Fairport Harbor

(7.17.2.3) Latitude

41.754874

(7.17.2.4) Longitude

-81.277955

Row 7

(7.17.2.1) Facility

Pinda

(7.17.2.3) Latitude

-22.934222

(7.17.2.4) Longitude

-45.395899

Row 8

(7.17.2.1) Facility

Equistar Pipeline

(7.17.2.3) Latitude

29.573915

(7.17.2.4) Longitude

-95.113165

Row 9

(7.17.2.1) Facility

Kerpen, Germany

(7.17.2.3) Latitude

50.895219

(7.17.2.4) Longitude

6.652803

Row 10

(7.17.2.1) Facility

Carrington

(7.17.2.3) Latitude

53.430217

(7.17.2.4) Longitude

-2.397428

Row 11

(7.17.2.1) Facility

Warrington, UK

(7.17.2.3) Latitude

53.406197

(7.17.2.4) Longitude

-2.533082

Row 12

(7.17.2.1) Facility

Vadodara, India

(7.17.2.3) Latitude

22.438352

(7.17.2.4) Longitude

73.210025

Row 13

(7.17.2.1) Facility

Exeter, OH, US

(7.17.2.3) Latitude

41.030021

(7.17.2.4) Longitude

-81.479169

Row 14

(7.17.2.1) Facility

Clinton

(7.17.2.3) Latitude

41.807367

(7.17.2.4) Longitude

-90.285637

Row 15

(7.17.2.1) Facility

Bayport - Underwood

(7.17.2.3) Latitude

29.629006

(7.17.2.4) Longitude

-95.086683

Row 16

(7.17.2.1) Facility

Bay City, MI, US

(7.17.2.3) Latitude

43.59068

(7.17.2.4) Longitude

-84.00077

Row 17

(7.17.2.1) Facility

Guangzhou/Nansha(BAPG)

(7.17.2.3) Latitude

22.771534

(7.17.2.4) Longitude

113.54372

Row 18

(7.17.2.1) Facility

Lake Charles

(7.17.2.3) Latitude

30.191308

(7.17.2.4) Longitude

-93.323954

Row 19

(7.17.2.1) Facility

Botlek

(7.17.2.3) Latitude

51.932054

(7.17.2.4) Longitude

4.140827

Row 20

(7.17.2.1) Facility

Evansville, O'Hara, IN, US

(7.17.2.3) Latitude

38.024291

(7.17.2.4) Longitude

-87.519999

Row 21

(7.17.2.1) Facility

Carpentersville, IL, US

(7.17.2.3) Latitude

42.113637

(7.17.2.4) Longitude

-88.280577

Row 22

(7.17.2.1) Facility

Bayport - Polyolefins

(7.17.2.3) Latitude

29.631784

(7.17.2.4) Longitude

-95.046348

Row 23

(7.17.2.1) Facility

Castellon, Spain

(7.17.2.3) Latitude

39.957251

(7.17.2.4) Longitude

-0.076519

Row 24

(7.17.2.1) Facility

Astorp, Sweden

(7.17.2.3) Latitude

56.124747

(7.17.2.4) Longitude

12.913611

Row 25

(7.17.2.1) Facility

Grand Junction, TN, US

(7.17.2.3) Latitude

35.048337

(7.17.2.4) Longitude

-89.189319

Row 26

(7.17.2.1) Facility

Dalian

(7.17.2.3) Latitude

38.91222

(7.17.2.4) Longitude

121.60222

Row 27

(7.17.2.1) Facility

Matagorda

(7.17.2.3) Latitude

28.793661

(7.17.2.4) Longitude

-95.943373

Row 28

(7.17.2.1) Facility

Frankfurt

(7.17.2.3) Latitude

50.095245

(7.17.2.4) Longitude

8.535962

Row 29

(7.17.2.1) Facility

Plymouth, IN, US

(7.17.2.3) Latitude

41.350982

(7.17.2.4) Longitude

-86.322454

Row 30

(7.17.2.1) Facility

Evansville, Columbia, IN, US

(7.17.2.3) Latitude

37.986475

(7.17.2.4) Longitude

-87.55064

Row 31

(7.17.2.1) Facility

Victoria, Australia

(7.17.2.3) Latitude

-37.9887

(7.17.2.4) Longitude

145.1042

Row 32

(7.17.2.1) Facility

Allentown, PA, US

(7.17.2.3) Latitude

40.59111

(7.17.2.4) Longitude

-75.601806

Row 33

(7.17.2.1) Facility

Munchsmunster

(7.17.2.3) Latitude

48.755734

(7.17.2.4) Longitude

11.703499

Row 34

(7.17.2.1) Facility

Milton Keynes

(7.17.2.3) Latitude

52.007188

(7.17.2.4) Longitude

-0.728571

Row 35

(7.17.2.1) Facility

Berre

(7.17.2.3) Latitude

43.4781

(7.17.2.4) Longitude

5.1704

Row 36

(7.17.2.1) Facility

East Java, Indonesia

(7.17.2.3) Latitude

-7.595665

(7.17.2.4) Longitude

112.690506

Row 37

(7.17.2.1) Facility

s'Gravendeel, Holland

(7.17.2.3) Latitude

51.783154

(7.17.2.4) Longitude

4.621429

Row 38

(7.17.2.1) Facility

Geelong

(7.17.2.3) Latitude

-38.077027

(7.17.2.4) Longitude

144.379651

Row 39

(7.17.2.1) Facility

Bornem, Belgium

(7.17.2.3) Latitude

51.087365

(7.17.2.4) Longitude

4.260994

Row 40

(7.17.2.1) Facility

Houston Office

(7.17.2.3) Latitude

29.756449

(7.17.2.4) Longitude

-95.362397

Row 41

(7.17.2.1) Facility

Akron, OH, US

(7.17.2.3) Latitude

41.103721

(7.17.2.4) Longitude

-81.487345

Row 42

(7.17.2.1) Facility

Cincinatti Technical Centre

(7.17.2.3) Latitude

39.276971

(7.17.2.4) Longitude

-84.345252

Row 43

(7.17.2.1) Facility

Altamira

(7.17.2.3) Latitude

22.39215

(7.17.2.4) Longitude

-97.93867

Row 44

(7.17.2.1) Facility

Mansfield

(7.17.2.3) Latitude

32.558912

(7.17.2.4) Longitude

-97.110507

Row 45

(7.17.2.1) Facility

Ludwigshafen

(7.17.2.3) Latitude

49.514995

(7.17.2.4) Longitude

8.420576

Row 46

(7.17.2.1) Facility

Oyonnax, France

(7.17.2.3) Latitude

46.233143

(7.17.2.4) Longitude

5.624624

Row 47

(7.17.2.1) Facility

Bayport - Choate

(7.17.2.3) Latitude

29.62001

(7.17.2.4) Longitude

-95.041931

Row 48

(7.17.2.1) Facility

Gorla, Italy

(7.17.2.3) Latitude

45.659755

(7.17.2.4) Longitude

8.899144

Row 49

(7.17.2.1) Facility

Opglabbeek, Belgium

(7.17.2.3) Latitude

51.041632

(7.17.2.4) Longitude

5.543732

Row 50

(7.17.2.1) Facility

Crumlin, UK

(7.17.2.3) Latitude

51.677005

(7.17.2.4) Longitude

-3.162651

Row 51

(7.17.2.1) Facility

Bayreuth

(7.17.2.3) Latitude

49.96958

(7.17.2.4) Longitude

11.60368

Row 52

(7.17.2.1) Facility

Fos-Caban

(7.17.2.3) Latitude

43.425387

(7.17.2.4) Longitude

4.847112

Row 53

(7.17.2.1) Facility

Ferrara

(7.17.2.3) Latitude

45.523611

(7.17.2.4) Longitude

9.231148

Row 54

(7.17.2.1) Facility

Mexico City, Mexico

(7.17.2.3) Latitude

19.509305

(7.17.2.4) Longitude

-99.152983

Row 55

(7.17.2.1) Facility

San Luis Potosi, Mexico

(7.17.2.3) Latitude

22.063946

(7.17.2.4) Longitude

-100.878546

Row 56

(7.17.2.1) Facility

Givet, France

(7.17.2.3) Latitude

50.157619

(7.17.2.4) Longitude

4.821837

Row 57

(7.17.2.1) Facility

Newark

(7.17.2.3) Latitude

40.722974

(7.17.2.4) Longitude

-74.123066

Row 58

(7.17.2.1) Facility

Tarragona

(7.17.2.3) Latitude

41.113317

(7.17.2.4) Longitude

1.162662

Row 59

(7.17.2.1) Facility

Tuscola

(7.17.2.3) Latitude

39.792375

(7.17.2.4) Longitude

-88.350139

Row 60

(7.17.2.1) Facility

China, TX

(7.17.2.3) Latitude

30.043333

(7.17.2.4) Longitude

-94.375128

Row 61

(7.17.2.1) Facility

Dongguan, China

(7.17.2.3) Latitude

23.009454

(7.17.2.4) Longitude

114.027025

Row 62

(7.17.2.1) Facility

Evansville 1800 Lynch, IN, US

(7.17.2.3) Latitude

38.01699

(7.17.2.4) Longitude

-87.532564

Row 63

(7.17.2.1) Facility

Gainsborough, UK

(7.17.2.3) Latitude

53.391176

(7.17.2.4) Longitude

-0.745247

Row 64

(7.17.2.1) Facility

La Porte

(7.17.2.3) Latitude

29.720803

(7.17.2.4) Longitude

-95.069126

Row 65

(7.17.2.1) Facility

Channelview - North

(7.17.2.3) Latitude

29.789498

(7.17.2.4) Longitude

-95.124701

Row 66

(7.17.2.1) Facility

Chennai

(7.17.2.3) Latitude

12.84831

(7.17.2.4) Longitude

79.705073

Row 67

(7.17.2.1) Facility

Brindisi

(7.17.2.3) Latitude

40.6321

(7.17.2.4) Longitude

17.9361

Row 68

(7.17.2.1) Facility

Batu Pahat, Malaysia

(7.17.2.3) Latitude

1.853898

(7.17.2.4) Longitude

102.993484

Row 69

(7.17.2.1) Facility

Changshu, China

(7.17.2.3) Latitude

31.656613

(7.17.2.4) Longitude

120.752454

Row 70

(7.17.2.1) Facility

North Kingsville, OH, US

(7.17.2.3) Latitude

41.919206

(7.17.2.4) Longitude

-80.666168

Row 71

(7.17.2.1) Facility

Chocolate Bayou - Polymers

(7.17.2.3) Latitude

29.423847

(7.17.2.4) Longitude

-95.2441

Row 72

(7.17.2.1) Facility

Suzhou (BAPS)

(7.17.2.3) Latitude

31.317678

(7.17.2.4) Longitude

120.802769

Row 73

(7.17.2.1) Facility

Evansville, Northbrook, IN, US

(7.17.2.3) Latitude

38.114618

(7.17.2.4) Longitude

-87.557262

Row 74

(7.17.2.1) Facility

Edison

(7.17.2.3) Latitude

40.493622

(7.17.2.4) Longitude

-74.385234

Row 75

(7.17.2.1) Facility

Channelview - South

(7.17.2.3) Latitude

29.789498

(7.17.2.4) Longitude

-95.124701

Row 76

(7.17.2.1) Facility

East Chicago, IN, US

(7.17.2.3) Latitude

41.634689

(7.17.2.4) Longitude

-87.454736

Row 77

(7.17.2.1) Facility

Senai, Malaysia

(7.17.2.3) Latitude

1.623914

(7.17.2.4) Longitude

103.670859

Row 78

(7.17.2.1) Facility

Knapsack

(7.17.2.3) Latitude

50.863739

(7.17.2.4) Longitude

6.872401

Row 79

(7.17.2.1) Facility

Houston Refinery

(7.17.2.3) Latitude

29.710227

(7.17.2.4) Longitude

-95.236299

Row 80

(7.17.2.1) Facility

Sumare, Brazil

(7.17.2.3) Latitude

-22.719558

(7.17.2.4) Longitude

-47.294468

Row 81

(7.17.2.1) Facility

Moerdijk

(7.17.2.3) Latitude

51.670417

(7.17.2.4) Longitude

4.576996

Row 82

(7.17.2.1) Facility

Wesseling

(7.17.2.3) Latitude

50.83317

(7.17.2.4) Longitude

6.966976

Row 83

(7.17.2.1) Facility

Victoria

(7.17.2.3) Latitude

28.687473

(7.17.2.4) Longitude

-96.941459

Row 84

(7.17.2.1) Facility

Rayong (BAPT)

(7.17.2.3) Latitude

13.011232

(7.17.2.4) Longitude

101.193333

Row 85

(7.17.2.1) Facility

Maasvlakte

(7.17.2.3) Latitude

51.965098

(7.17.2.4) Longitude

4.015599

Row 86

(7.17.2.1) Facility

Sinnar

(7.17.2.3) Latitude

19.968362

(7.17.2.4) Longitude

74.373642

Row 87

(7.17.2.1) Facility

Bedford, VA, US

(7.17.2.3) Latitude

37.344774

(7.17.2.4) Longitude

-79.494812

Row 88

(7.17.2.1) Facility

West Chicago, IL, US

(7.17.2.3) Latitude

41.914009

(7.17.2.4) Longitude

-88.235828

Row 89

(7.17.2.1) Facility

Corpus Christi

(7.17.2.3) Latitude

27.822545

(7.17.2.4) Longitude

-97.572225

Row 90

(7.17.2.1) Facility

Morris

(7.17.2.3) Latitude

41.447901

(7.17.2.4) Longitude

-88.309867

Row 91

(7.17.2.1) Facility

Plock, Poland

(7.17.2.3) Latitude

52.58749

(7.17.2.4) Longitude

19.649317

Row 92

(7.17.2.1) Facility

Perrysburg, OH, US

(7.17.2.3) Latitude

41.546921

(7.17.2.4) Longitude

-83.642284

Row 93

(7.17.2.1) Facility

Cerkezkoy, Turkey

(7.17.2.3) Latitude

41.296207

(7.17.2.4) Longitude

27.973264

Row 94

(7.17.2.1) Facility

Rotterdam Office

(7.17.2.3) Latitude

51.924784

(7.17.2.4) Longitude

4.473625

[Add row]

(7.19) 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	Comment
Chemicals production activities	13336450	

[Fixed row]

(7.20.1) Break down your total gross global Scope 2 emissions by business division.

	Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Row 1	O&P Americas	2612335	2368750
Row 2	O&P EAI	510042	721306
Row 3	I&D	2451446	2448418
Row 4	Refining	1337396	1224090
Row 5	APS	190411	153550
Row 6	Technology	31154	41713

[Add row]

(7.20.2) Break down your total gross global Scope 2 emissions by business facility.

Row 2

(7.20.2.1) Facility

Bayreuth

Row 3

(7.20.2.1) Facility

Evansville, Columbia, IN, US

Row 4

(7.20.2.1) Facility

Newark

Row 5

(7.20.2.1) Facility

Bornem, Belgium

Row 6

(7.20.2.1) Facility

Rayong (BAPT)

Row 7

(7.20.2.1) Facility

Tarragona

Row 8

(7.20.2.1) Facility

Oyonnax, France

Row 9

Suzhou (BAPS)

Row 10

(7.20.2.1) Facility

Equistar Pipeline

Row 11

(7.20.2.1) Facility

Bedford, VA, US

Row 12

(7.20.2.1) Facility

San Luis Potosi, Mexico

Row 13

(7.20.2.1) Facility

Victoria

Row 14

(7.20.2.1) Facility

Lake Charles JV

Row 15

(7.20.2.1) Facility

Sinnar

Row 16

(7.20.2.1) Facility

Carrington

Row 17

(7.20.2.1) Facility

Chennai

Row 18

(7.20.2.1) Facility

Vadodara, India

Row 19

(7.20.2.1) Facility

Evansville 1800 Lynch, IN, US

Row 20

(7.20.2.1) Facility

Ludwigshafen

Row 21

(7.20.2.1) Facility

Gainsborough, UK

Row 22

(7.20.2.1) Facility

Dalian

Row 23

(7.20.2.1) Facility

Pinda

Row 24

(7.20.2.1) Facility

Mansfield

Row 25

(7.20.2.1) Facility

Allentown, PA, US

Row 26

(7.20.2.1) Facility

La Porte

Row 27

(7.20.2.1) Facility

Bayport - Underwood

Row 28

(7.20.2.1) Facility

Altamira

Row 29

(7.20.2.1) Facility

Botlek

Row 30

(7.20.2.1) Facility

Dongguan, China

Row 31

(7.20.2.1) Facility

Frankfurt

Row 32

(7.20.2.1) Facility

Changshu, China

Row 33

(7.20.2.1) Facility

Rotterdam Office

Row 34

(7.20.2.1) Facility

Munchsmunster

Row 35

(7.20.2.1) Facility

Milton Keynes

Row 36

(7.20.2.1) Facility

Knapsack

Row 37

(7.20.2.1) Facility

Opglabbeek, Belgium

Row 38

(7.20.2.1) Facility

Victoria, Australia

Row 39

(7.20.2.1) Facility

Chocolate Bayou - Polymers

Row 40

(7.20.2.1) Facility

Kerpen, Germany

Row 41

(7.20.2.1) Facility

Berre

Row 42

(7.20.2.1) Facility

Ferrara

Row 43

(7.20.2.1) Facility

Tuscola

Row 44

(7.20.2.1) Facility

Cerkezkoy, Turkey

Row 45

(7.20.2.1) Facility

Astorp, Sweden

Row 46

(7.20.2.1) Facility

Senai, Malaysia

Row 47

(7.20.2.1) Facility

Brindisi

Row 48

(7.20.2.1) Facility

Perrysburg, OH, US

Row 49

(7.20.2.1) Facility

Wesseling

Row 50

(7.20.2.1) Facility

Clinton

Row 51

(7.20.2.1) Facility

Maasvlakte

Row 52

(7.20.2.1) Facility

Fos-Caban

Row 53

(7.20.2.1) Facility

Channelview - South

Row 54

(7.20.2.1) Facility

Evansville, O'Hara, IN, US

Row 55

(7.20.2.1) Facility

North Kingsville, OH, US

Row 56

(7.20.2.1) Facility

Morris

Row 57

(7.20.2.1) Facility

Warrington, UK

Row 58

(7.20.2.1) Facility

Evansville, Northbrook, IN, US

Row 59

(7.20.2.1) Facility

Jackson

Row 60

(7.20.2.1) Facility

West Chicago, IL, US

Row 61

(7.20.2.1) Facility

Houston Refinery

Row 62

(7.20.2.1) Facility

Edison

Row 63

(7.20.2.1) Facility

Mexico City, Mexico

Row 64

(7.20.2.1) Facility

Castellon, Spain

Row 65

(7.20.2.1) Facility

Cincinatti Technical Centre

Row 66

(7.20.2.1) Facility

Exeter, OH, US

Row 67

(7.20.2.1) Facility

Grand Junction, TN, US

Row 68

(7.20.2.1) Facility

Seevetal, Germany

Row 69

(7.20.2.1) Facility

Batu Pahat, Malaysia

Row 70

(7.20.2.1) Facility

East Chicago, IN, US

Row 71

(7.20.2.1) Facility

Rio Claro, Brazil

Row 72

(7.20.2.1) Facility

Fairport Harbor

Row 73

(7.20.2.1) Facility

Plock, Poland

Row 74

(7.20.2.1) Facility

Akron, OH, US

Row 75

(7.20.2.1) Facility

East Java, Indonesia

Row 76

(7.20.2.1) Facility

Guangzhou/Nansha(BAPG)

Row 77

(7.20.2.1) Facility

China, TX

Row 78

(7.20.2.1) Facility

Givet, France

Row 79

(7.20.2.1) Facility

Houston Office

Row 80

(7.20.2.1) Facility

Bayport - Polyolefins

Row 81

(7.20.2.1) Facility

Corpus Christi

Row 82

(7.20.2.1) Facility

Plymouth, IN, US

Row 83

(7.20.2.1) Facility

Carpentersville, IL, US

Row 84

(7.20.2.1) Facility

Sumare, Brazil

Row 85

(7.20.2.1) Facility

Gorla, Italy

Row 86

(7.20.2.1) Facility

s'Gravendeel, Holland

Row 87

(7.20.2.1) Facility

Matagorda

Row 88

(7.20.2.1) Facility

Geelong

Row 89

(7.20.2.1) Facility

Bay City, MI, US

Row 90

(7.20.2.1) Facility

Channelview - North

Row 91

(7.20.2.1) Facility

Crumlin, UK

Row 92

(7.20.2.1) Facility

Lake Charles

Row 93

(7.20.2.1) Facility

Bayport - Choate

Row 94

(7.20.2.1) Facility

Moerdijk
[Add row]

(7.21) 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
Chemicals production activities	5795388	5733737
Oil and gas production activities (downstream)	1337396	1224090

[Fixed row]

(7.22) Break down your gross Scope 1 and Scope 2 emissions between your consolidated accounting group and other entities included in your response.

Consolidated accounting group

(7.22.1) Scope 1 emissions (metric tons CO2e)

13948686

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

6560236

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

6380178

(7.22.4) Please explain

Our Consolidated Financial Statements have been prepared under accounting principles generally accepted in the United States (“U.S. GAAP”). We account for equity method investments using the equity method of accounting if we have the ability to exercise significant influence over, but do not control an investee.

All other entities

(7.22.1) Scope 1 emissions (metric tons CO2e)

1350336

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

572548

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

577650

(7.22.4) Please explain

*We account for and report the GHG emissions and energy consumption metrics under the operational control approach, which includes operations over which we, or one of our subsidiaries, have operational control. Other entities includes equity investments which we operate.
[Fixed row]*

(7.23.1) Break down your gross Scope 1 and Scope 2 emissions by subsidiary.

Row 1

(7.23.1.1) Subsidiary name

A Schulman Belgium BVBA

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

25

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

130

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

133

Row 2

(7.23.1.1) Subsidiary name

A Schulman Plastik Sanayi ve Ticaret Anonim Sirketi

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

662

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

473

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

717

Row 3

(7.23.1.1) Subsidiary name

A Schulman Polska Sp. z o.o.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

1041

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

1227

Row 4

(7.23.1.1) Subsidiary name

A. Schulman Castellon S.L

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

53

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

1110

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

0

Row 5

(7.23.1.1) Subsidiary name

A. Schulman de Mexico, S.A. de C.V.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

6683

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

7520

Row 6

(7.23.1.1) Subsidiary name

A. Schulman Gainsborough Ltd

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

865

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

834

Row 7

(7.23.1.1) Subsidiary name

A. Schulman Inc. Limited

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

1965

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

1179

Row 8

(7.23.1.1) Subsidiary name

A. Schulman Nordic AB

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

10

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

0

Row 9

(7.23.1.1) Subsidiary name

A. Schulman Plasticos do Brasil LTDA.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

5

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

850

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

0

Row 10

(7.23.1.1) Subsidiary name

A. Schulman Plastics BV

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

1040

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

2221

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

0

Row 11

(7.23.1.1) Subsidiary name

A. Schulman Plastics India Private Limited

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

49

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

3708

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

0

Row 12

(7.23.1.1) Subsidiary name

A. Schulman Plastics S.r.l.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

1870

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

2470

Row 13

(7.23.1.1) Subsidiary name

A. Schulman Plastics SAS

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

1711

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

1403

Row 14

(7.23.1.1) Subsidiary name

A. Schulman 's-Gravendeel B.V.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

2495

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

0

Row 15

(7.23.1.1) Subsidiary name

A. Schulman Thermoplastic Compounds Limited

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

864

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

832

Row 16

(7.23.1.1) Subsidiary name

Basell Advanced Polyolefins (Dalian) Co., Ltd

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

4891

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

5004

Row 17

(7.23.1.1) Subsidiary name

Basell Advanced Polyolefins (Thailand) Company Ltd.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

2804

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

2852

Row 18

(7.23.1.1) Subsidiary name

Basell Bayreuth Chemie GmbH

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

15006

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

24148

Row 19

(7.23.1.1) Subsidiary name

Basell Benelux B.V.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

280918

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

27990

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

0

Row 20

(7.23.1.1) Subsidiary name

Basell Poliolefinas Iberica S.L.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

2044

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

29971

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

24218

Row 21

(7.23.1.1) Subsidiary name

Basell Poliolefinas Ltda.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 22

(7.23.1.1) Subsidiary name

Basell Poliolefinas S. de R.L. de C.V

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

4559

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

5499

Row 23

(7.23.1.1) Subsidiary name

Basell Poliolefine Italia S.r.l.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

54259

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

97452

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

128668

Row 24

(7.23.1.1) Subsidiary name

Basell Polyolefine GmbH

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

2242334

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

368079

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

617836

Row 25

(7.23.1.1) Subsidiary name

Basell Polyolefines France S.A.S.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

990166

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

33603

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

17790

Row 26

(7.23.1.1) Subsidiary name

Basell Polyolefins India Private Limited

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

6575

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

4923

Row 27

(7.23.1.1) Subsidiary name

Basell Polyolefins UK Limited

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

26690

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

12724

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

12263

Row 28

(7.23.1.1) Subsidiary name

Basell Sales & Marketing Company B.V.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 29

(7.23.1.1) Subsidiary name

Bulk Molding Compounds Do Brasil Industria De Plasticos Reforcados LTDA

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 30

(7.23.1.1) Subsidiary name

Bulk Molding Compounds, Inc.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

35

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

1100

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

695

Row 31

(7.23.1.1) Subsidiary name

Elían S.A.S.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

215

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

316

Row 32

(7.23.1.1) Subsidiary name

Equistar Chemicals, LP

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

7707489

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

2949035

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

2666171

Row 33

(7.23.1.1) Subsidiary name

Guangzhou Basell Advanced Polyolefins Co., Ltd

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

9275

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

0

Row 34

(7.23.1.1) Subsidiary name

Houston Refining LP

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

1962573

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

1337396

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

1224090

Row 35

(7.23.1.1) Subsidiary name

LYB Premix LLC

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

2307

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

1457

Row 36

(7.23.1.1) Subsidiary name

Lyondell Chemical Company

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

1438411

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

1618622

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

1601971

Row 37

(7.23.1.1) Subsidiary name

Lyondell Chemie Nederland B.V.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

246813

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

205964

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

155543

Row 38

(7.23.1.1) Subsidiary name

Lyondell Chimie France SAS

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

208957

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

45080

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

37814

Row 39

(7.23.1.1) Subsidiary name

LyondellBasell Advanced Polymer (Changshu) Co., Ltd

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 40

(7.23.1.1) Subsidiary name

LyondellBasell Advanced Polymer (Dongguan) Co. Ltd

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

27

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

6879

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

0

Row 41

(7.23.1.1) Subsidiary name

LyondellBasell Advanced Polymers Inc.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

35

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

33218

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

38639

Row 42

(7.23.1.1) Subsidiary name

LyondellBasell Advanced Polyolefins (Malaysia) Sdn. Bhd.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

171

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

5346

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

5600

Row 43

(7.23.1.1) Subsidiary name

LyondellBasell Advanced Polyolefins Pty Lt

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 44

(7.23.1.1) Subsidiary name

LyondellBasell Australia Pty Limited

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 45

(7.23.1.1) Subsidiary name

LyondellBasell Covestro Manufacturing Maasvlakte VOF

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

135461

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

272155

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

355669

Row 46

(7.23.1.1) Subsidiary name

PT LyondellBasell Advanced Polyolefins

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 47

(7.23.1.1) Subsidiary name

Quantum Composites, Inc.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

739

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

746

Row 48

(7.23.1.1) Subsidiary name

tetra-DUR Kunststoff-Produktion GmbH

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

283

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

498

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

0

Row 49

(7.23.1.1) Subsidiary name

TIVACO

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 50

(7.23.1.1) Subsidiary name

Polar S.r.l.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 51

(7.23.1.1) Subsidiary name

Mepol S.r.l.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 52

(7.23.1.1) Subsidiary name

QCP B.V.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

2

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

0

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

0

Row 53

(7.23.1.1) Subsidiary name

A. Schulman GmbH

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

494

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

5921

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

0

Row 54

(7.23.1.1) Subsidiary name

Colortech de Amazonia Ltda.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 55

(7.23.1.1) Subsidiary name

LyondellBasell Polymers (Malaysia) Sdn. Bhd.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

0

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

0

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

0

Row 56

(7.23.1.1) Subsidiary name

Basell Advanced Polyolefins (Suzhou) Co., Ltd.

(7.23.1.12) Scope 1 emissions (metric tons CO2e)

28

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

9384

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

9600

[Add row]

(7.25) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Row 1

(7.25.1) Purchased feedstock

Select from:

Other (please specify) :Total feedstock mixture

(7.25.2) Percentage of Scope 3, Category 1 tCO2e from purchased feedstock

92

(7.25.3) Explain calculation methodology

We calculated the scope 3 emissions arising from purchased feedstocks as a portion of the total scope 3 emissions from purchased goods and services, which resulted in a total of 92% in 2023. We do not segregate between feedstock types as we consider this to be company sensitive information. We followed the following methodology to calculate our scope 3 category 1 emissions: Data Quantity (mass and volume) of the goods and services, namely refining and petrochemical feedstocks, additives, chemicals, and catalysts were obtained from our internal management systems. Emission factors were sourced from internal and customer LCA studies, and complemented by different commercial and public data sources, including ecoinvent, Gabi, PlasticsEurope, and regional regulatory databases. While we recognize the materiality, and importance of procured goods and services, and feedstocks in particular, on our scope 3 and overall emissions, it is important to note that the chemical industry lacks today a rigorous emission accounting methodology for scope 3 emissions, a prerequisite for the calculation of emissions in all 15 categories of scope 3, and for the definition of a reliable baseline. LyondellBasell has participated alongside our industry peers in Together for Sustainability to the development of the Product Carbon Footprint Guideline, which we are working to deploy with our suppliers today. LyondellBasell is engaged alongside our industry peers in several initiatives, including in Together for Sustainability, to further understand, and act upon, the common challenges of the chemical industry in accurately quantifying and dealing with scope 3 emissions.

[Add row]

(7.25.1) Disclose sales of products that are greenhouse gases.

Carbon dioxide (CO2)

(7.25.1.1) Sales, metric tons

0

(7.25.1.2) Comment

LyondellBasell does not sell carbon dioxide.

Methane (CH4)

(7.25.1.1) Sales, metric tons

(7.25.1.2) Comment

Nitrous oxide (N2O)

(7.25.1.1) Sales, metric tons

0

(7.25.1.2) Comment

LyondellBasell does not sell nitrous oxide.

Hydrofluorocarbons (HFC)

(7.25.1.1) Sales, metric tons

0

(7.25.1.2) Comment

LyondellBasell does not sell hydrofluorocarbons.

Perfluorocarbons (PFC)

(7.25.1.1) Sales, metric tons

0

(7.25.1.2) Comment

LyondellBasell does not sell perfluorocarbons.

Sulphur hexafluoride (SF6)

(7.25.1.1) Sales, metric tons

0

(7.25.1.2) Comment

LyondellBasell does not sell sulphur hexafluoride.

Nitrogen trifluoride (NF3)

(7.25.1.1) Sales, metric tons

0

(7.25.1.2) Comment

LyondellBasell does not sell nitrogen trifluoride.

[Fixed row]

(7.28) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

(7.28.1) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Select from:

No

(7.28.4) Explain why you do not plan to develop capabilities to allocate emissions to your customers

LyondellBasell is currently engaged on deploying an LCA automation software which would allow for the calculation of product carbon footprints for the majority of products in our portfolio that are sold to customers. Given the complexity of this deployment, we anticipate a go live period by the end of 2025. In the meantime, we have been engaged in developing several life cycle studies for some of our products, the results of which we share with in direct engagement with our customers.

[Fixed row]

(7.30) 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)	Select from: <input checked="" type="checkbox"/> Yes
Consumption of purchased or acquired electricity	Select from: <input checked="" type="checkbox"/> Yes
Consumption of purchased or acquired heat	Select from: <input checked="" type="checkbox"/> Yes
Consumption of purchased or acquired steam	Select from: <input checked="" type="checkbox"/> Yes
Consumption of purchased or acquired cooling	Select from: <input checked="" type="checkbox"/> No
Generation of electricity, heat, steam, or cooling	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(7.30.1) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

Consumption of fuel (excluding feedstock)

(7.30.1.1) Heating value

Select from:

- LHV (lower heating value)

(7.30.1.2) MWh from renewable sources

0

(7.30.1.3) MWh from non-renewable sources

75878838

(7.30.1.4) Total (renewable and non-renewable) MWh

75878838

Consumption of purchased or acquired electricity

(7.30.1.1) Heating value

Select from:

Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

427138

(7.30.1.3) MWh from non-renewable sources

8338037

(7.30.1.4) Total (renewable and non-renewable) MWh

8765175

Consumption of purchased or acquired heat

(7.30.1.1) Heating value

Select from:

Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

0

(7.30.1.3) MWh from non-renewable sources

0

(7.30.1.4) Total (renewable and non-renewable) MWh

0

Consumption of purchased or acquired steam

(7.30.1.1) Heating value

Select from:

Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

0

(7.30.1.3) MWh from non-renewable sources

19609396

(7.30.1.4) Total (renewable and non-renewable) MWh

19609396

Consumption of self-generated non-fuel renewable energy

(7.30.1.1) Heating value

Select from:

Unable to confirm heating value

(7.30.1.2) MWh from renewable sources

0

(7.30.1.4) Total (renewable and non-renewable) MWh

0

Total energy consumption

(7.30.1.1) Heating value

Select from:

LHV (lower heating value)

(7.30.1.2) MWh from renewable sources

427138

(7.30.1.3) MWh from non-renewable sources

103826271

(7.30.1.4) Total (renewable and non-renewable) MWh

104253409
[Fixed row]

(7.30.3) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

Consumption of fuel (excluding feedstocks)

(7.30.3.1) Heating value

Select from:

LHV (lower heating value)

(7.30.3.2) MWh consumed from renewable sources inside chemical sector boundary

0

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

27019519

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

40474565

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

67494084

Consumption of purchased or acquired electricity

(7.30.3.1) Heating value

Select from:

Unable to confirm heating value

(7.30.3.2) MWh consumed from renewable sources inside chemical sector boundary

427138

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

7313817

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

0

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

7740955

Consumption of purchased or acquired heat

(7.30.3.1) Heating value

Select from:

Unable to confirm heating value

(7.30.3.2) MWh consumed from renewable sources inside chemical sector boundary

0

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

0

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

0

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

0

Consumption of purchased or acquired steam

(7.30.3.1) Heating value

Select from:

Unable to confirm heating value

(7.30.3.2) MWh consumed from renewable sources inside chemical sector boundary

0

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

16462825

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

0

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

16462825

Consumption of self-generated non-fuel renewable energy

(7.30.3.1) Heating value

Select from:

Unable to confirm heating value

(7.30.3.2) MWh consumed from renewable sources inside chemical sector boundary

0

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

0

Total energy consumption

(7.30.3.1) Heating value

Select from:

LHV (lower heating value)

(7.30.3.2) MWh consumed from renewable sources inside chemical sector boundary

427138

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

50796161

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

40474565

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

91697864

[Fixed row]

(7.30.6) 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	Select from: <input checked="" type="checkbox"/> Yes
Consumption of fuel for the generation of heat	Select from: <input checked="" type="checkbox"/> Yes
Consumption of fuel for the generation of steam	Select from: <input checked="" type="checkbox"/> Yes
Consumption of fuel for the generation of cooling	Select from: <input checked="" type="checkbox"/> No
Consumption of fuel for co-generation or tri-generation	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(7.30.7) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.5) MWh fuel consumed for self-generation of steam

0

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

Other biomass

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.5) MWh fuel consumed for self-generation of steam

0

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

Other renewable fuels (e.g. renewable hydrogen)

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

0

(7.30.7.3) MWh fuel consumed for self-generation of electricity

0

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.5) MWh fuel consumed for self-generation of steam

0

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

Coal

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

2246392

(7.30.7.3) MWh fuel consumed for self-generation of electricity

673918

(7.30.7.4) MWh fuel consumed for self-generation of heat

0

(7.30.7.5) MWh fuel consumed for self-generation of steam

1572474

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

Oil

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

5991136

(7.30.7.3) MWh fuel consumed for self-generation of electricity

987978

(7.30.7.4) MWh fuel consumed for self-generation of heat

2697878

(7.30.7.5) MWh fuel consumed for self-generation of steam

2305281

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

0

Gas

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

54678059

(7.30.7.3) MWh fuel consumed for self-generation of electricity

35408

(7.30.7.4) MWh fuel consumed for self-generation of heat

44963607

(7.30.7.5) MWh fuel consumed for self-generation of steam

6542979

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

3136065

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

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

15116473

(7.30.7.3) MWh fuel consumed for self-generation of electricity

1474

(7.30.7.4) MWh fuel consumed for self-generation of heat

14842690

(7.30.7.5) MWh fuel consumed for self-generation of steam

272310

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

88384

Total fuel

(7.30.7.1) Heating value

Select from:

LHV

(7.30.7.2) Total fuel MWh consumed by the organization

78032060

(7.30.7.3) MWh fuel consumed for self-generation of electricity

1698777

(7.30.7.4) MWh fuel consumed for self-generation of heat

62504174

(7.30.7.5) MWh fuel consumed for self-generation of steam

10693044

(7.30.7.6) MWh fuel consumed for self-generation of cooling

0

(7.30.7.7) MWh fuel consumed for self- cogeneration or self-trigeneration

3224450

[Fixed row]

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

Electricity

(7.30.9.1) Total Gross generation (MWh)

964276

(7.30.9.2) Generation that is consumed by the organization (MWh)

964276

(7.30.9.3) Gross generation from renewable sources (MWh)

0

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

0

Heat

(7.30.9.1) Total Gross generation (MWh)

60350952

(7.30.9.2) Generation that is consumed by the organization (MWh)

60350952

(7.30.9.3) Gross generation from renewable sources (MWh)

0

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

0

Steam

(7.30.9.1) Total Gross generation (MWh)

15943920

(7.30.9.2) Generation that is consumed by the organization (MWh)

15943920

(7.30.9.3) Gross generation from renewable sources (MWh)

0

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

0

Cooling

(7.30.9.1) Total Gross generation (MWh)

0

(7.30.9.2) Generation that is consumed by the organization (MWh)

0

(7.30.9.3) Gross generation from renewable sources (MWh)

0

(7.30.9.4) Generation from renewable sources that is consumed by the organization (MWh)

0

[Fixed row]

(7.30.11) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

Electricity

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

964276

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

964276

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

0

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

426298

Heat

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

51966198

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

51966198

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

0

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

37622230

Steam

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

13900810

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

13900810

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

0

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

4603572

Cooling

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

0

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

0

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

0

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

0

[Fixed row]

(7.30.14) 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 7.7.

Row 1

(7.30.14.1) Country/area

Select from:

Sweden

(7.30.14.2) Sourcing method

Select from:

Retail supply contract with an electricity supplier (retail green electricity)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Hydropower (capacity unknown)

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

1479

(7.30.14.6) Tracking instrument used

Select from:

GO

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Sweden

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

Yes

(7.30.14.9) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

1926

(7.30.14.10) Comment

The electricity supply for our Astorp, Sweden site is produced in Vattenfall's Nordic hydro power plants. Vattenfall owns several hydro power plants, all with different commissioning years. The year disclosed in our report is provided as an example, using the Lilla Edet power plant, which is situated on the Göta Älv river.

Row 2

(7.30.14.1) Country/area

Select from:

Brazil

(7.30.14.2) Sourcing method

Select from:

Default delivered electricity from the grid (e.g. standard product offering by an energy supplier), supported by energy attribute certificates

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Hydropower (capacity unknown)

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

2402

(7.30.14.6) Tracking instrument used

Select from:

I-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

Brazil

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

Yes

(7.30.14.9) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2021

(7.30.14.10) Comment

Row 3

(7.30.14.1) Country/area

Select from:

United States of America

(7.30.14.2) Sourcing method

Select from:

Financial (virtual) power purchase agreement (VPPA)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Solar

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

210484

(7.30.14.6) Tracking instrument used

Select from:

US-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

United States of America

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

Yes

(7.30.14.9) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2023

(7.30.14.10) Comment

Row 4

(7.30.14.1) Country/area

Select from:

United States of America

(7.30.14.2) Sourcing method

Select from:

Financial (virtual) power purchase agreement (VPPA)

(7.30.14.3) Energy carrier

Select from:

Electricity

(7.30.14.4) Low-carbon technology type

Select from:

Wind

(7.30.14.5) Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

211412

(7.30.14.6) Tracking instrument used

Select from:

US-REC

(7.30.14.7) Country/area of origin (generation) of the low-carbon energy or energy attribute

Select from:

United States of America

(7.30.14.8) Are you able to report the commissioning or re-powering year of the energy generation facility?

Select from:

Yes

(7.30.14.9) Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2023

(7.30.14.10) Comment

[Add row]

(7.30.16) Provide a breakdown by country/area of your electricity/heat/steam/cooling consumption in the reporting year.

Belgium

(7.30.16.1) Consumption of purchased electricity (MWh)

16210

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

16210.00

Brazil

(7.30.16.1) Consumption of purchased electricity (MWh)

11378

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

11378.00

China

(7.30.16.1) Consumption of purchased electricity (MWh)

49966

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

49966.00

Egypt

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

France

(7.30.16.1) Consumption of purchased electricity (MWh)

749531

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

25224

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

146879

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

2249858

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

3171492.00

Germany

(7.30.16.1) Consumption of purchased electricity (MWh)

992850

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

430020

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

125969

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

1299086

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

2847925.00

Hong Kong SAR, China

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

India

(7.30.16.1) Consumption of purchased electricity (MWh)

14565

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

14565.00

Indonesia

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Italy

(7.30.16.1) Consumption of purchased electricity (MWh)

283426

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

0

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

170840

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

121834

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

576100.00

Japan

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Luxembourg

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Malaysia

(7.30.16.1) Consumption of purchased electricity (MWh)

8459

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

8459.00

Mexico

(7.30.16.1) Consumption of purchased electricity (MWh)

32057

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

32057.00

Netherlands

(7.30.16.1) Consumption of purchased electricity (MWh)

416118

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

0

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

1831560

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

815326

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

3063004.00

Philippines

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Poland

(7.30.16.1) Consumption of purchased electricity (MWh)

1645

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

1645.00

Republic of Korea

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Saudi Arabi

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Singapore

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Spain

(7.30.16.1) Consumption of purchased electricity (MWh)

133272

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

0

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

21862

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

155134.00

Sweden

(7.30.16.1) Consumption of purchased electricity (MWh)

1479

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

1479.00

Taiwan, China

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

Thailand

(7.30.16.1) Consumption of purchased electricity (MWh)

6031

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

6031.00

Turkey

(7.30.16.1) Consumption of purchased electricity (MWh)

1129

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

1129.00

United Arab Emirates

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

United Kingdom of Great Britain and Northern Ireland

(7.30.16.1) Consumption of purchased electricity (MWh)

81226

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

81226.00

United States of America

(7.30.16.1) Consumption of purchased electricity (MWh)

6390562

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

509033

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

17312286

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

11457815

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

35669696.00

Viet Nam

(7.30.16.1) Consumption of purchased electricity (MWh)

0

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

0

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

0

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

0

(7.30.16.6) Total electricity/heat/steam/cooling energy consumption (MWh)

0.00

[Fixed row]

(7.31.1) Disclose details on your organization's consumption of feedstocks for chemical production activities.

Row 1

(7.31.1.1) Fuels used as feedstocks

Select from:

Other, please specify :Total feedstock

(7.31.1.2) Total consumption

38120616

(7.31.1.3) Total consumption unit

Select from:

metric tons

(7.31.1.4) Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit

3

(7.31.1.5) Heating value of feedstock, MWh per consumption unit

12.23

(7.31.1.6) Heating value

Select from:

LHV

(7.31.1.7) Comment

Feedstock composition is considered to be confidential information, and therefore a total of all feedstock volumes has been provided. The heating value of the feedstock is based on a weighted average of heating values for the total feedstock mix. Please also note that the majority of our feedstock is converted into chemicals and polymer products, rather than combusted, and therefore there are no direct CO2 emissions associated with these products.

[Add row]

(7.31.2) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.

Oil

(7.31.2.1) Percentage of total chemical feedstock (%)

47.93

(7.31.2.2) Direction of change in percentage of total chemical feedstock from previous year

Select from:

Decreased

Natural Gas

(7.31.2.1) Percentage of total chemical feedstock (%)

49.99

(7.31.2.2) Direction of change in percentage of total chemical feedstock from previous year

Select from:

Increased

Coal

(7.31.2.1) Percentage of total chemical feedstock (%)

0

(7.31.2.2) Direction of change in percentage of total chemical feedstock from previous year

Select from:

No change

Biomass

(7.31.2.1) Percentage of total chemical feedstock (%)

2.08

(7.31.2.2) Direction of change in percentage of total chemical feedstock from previous year

Select from:

Decreased

Waste (non-biomass)

(7.31.2.1) Percentage of total chemical feedstock (%)

0

(7.31.2.2) Direction of change in percentage of total chemical feedstock from previous year

Select from:

No change

Fossil fuel (where coal, gas, oil cannot be distinguished)

(7.31.2.1) Percentage of total chemical feedstock (%)

0

(7.31.2.2) Direction of change in percentage of total chemical feedstock from previous year

Select from:

No change

Unknown source or unable to disaggregate

(7.31.2.1) Percentage of total chemical feedstock (%)

0

(7.31.2.2) Direction of change in percentage of total chemical feedstock from previous year

Select from:

No change

[Fixed row]

(7.39) Provide details on your organization's chemical products.

Row 1

(7.39.1) Output product

Select from:

Polymers

(7.39.2) Production (metric tons)

7981523

(7.39.3) Capacity (metric tons)

12893004

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

0

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

0

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

0

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

0

(7.39.8) Comment

Intensity ratios are not published as they are regarded as confidential business information. All cells completed with 0's are considered confidential.

Row 2

(7.39.1) Output product

Select from:

High Value Chemicals (Steam cracking)

(7.39.2) Production (metric tons)

9979839

(7.39.3) Capacity (metric tons)

14210894

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

0

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

0

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

0

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

0

(7.39.8) Comment

Intensity ratios are not published as they are regarded as confidential business information. All cells completed with 0's are considered confidential.

Row 3

(7.39.1) Output product

Select from:

Methanol

(7.39.2) Production (metric tons)

1148659

(7.39.3) Capacity (metric tons)

1443745

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

0

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

0

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

0

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

0

(7.39.8) Comment

Intensity ratios are not published as they are regarded as confidential business information. All cells completed with 0's are considered confidential.

Row 4

(7.39.1) Output product

Select from:

Other base chemicals

(7.39.2) Production (metric tons)

7963316

(7.39.3) Capacity (metric tons)

14748273

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

0

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

0

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

0

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

0

(7.39.8) Comment

Intensity ratios are not published as they are regarded as confidential business information. All cells completed with 0's are considered confidential.

Row 5

(7.39.1) Output product

Select from:

Other, please specify :Gasoline and distilate

(7.39.2) Production (metric tons)

9839198

(7.39.3) Capacity (metric tons)

13266768

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

0

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

0

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

0

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

0

(7.39.8) Comment

*Intensity ratios are not published as they are regarded as confidential business information. All cells completed with 0's are considered confidential.
[Add row]*

(7.45) 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.

Row 1

(7.45.1) Intensity figure

0.000543

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

22340195

(7.45.3) Metric denominator

Select from:

unit total revenue

(7.45.4) Metric denominator: Unit total

41107000000

(7.45.5) Scope 2 figure used

Select from:

Market-based

(7.45.6) % change from previous year

24

(7.45.7) Direction of change

Select from:

Increased

(7.45.8) Reasons for change

Select all that apply

Change in renewable energy consumption

Other emissions reduction activities

Change in revenue

(7.45.9) Please explain

In 2023, we continued to progress towards reaching our scope 1 and 2 2030 targets through the deployment of emission reduction activities at sites (deployment of projects to account for a reduction in scopes 1 and 2 emissions of 321kt), and through the procurement of renewable electricity via virtual power purchase agreements (reduction in our scope 2 emissions of 152kt). These are described in 7.10.1. From 2022 to 2023, our company revenue decreased by 19%, which resulted in our CO2e intensity by unit of revenue increasing in 2023.

[Add row]

(7.53.1) Provide details of your absolute emissions targets and progress made against those targets.

Row 1

(7.53.1.1) Target reference number

Select from:

Abs 3

(7.53.1.2) Is this a science-based target?

Select from:

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

(7.53.1.4) Target ambition

Select from:

1.5°C aligned

(7.53.1.5) Date target was set

09/28/2021

(7.53.1.6) Target coverage

Select from:

Organization-wide

(7.53.1.7) Greenhouse gases covered by target

Select all that apply

- Methane (CH4)
- Nitrous oxide (N2O)
- Carbon dioxide (CO2)
- Perfluorocarbons (PFCs)
- Hydrofluorocarbons (HFCs)
- Sulphur hexafluoride (SF6)
- Nitrogen trifluoride (NF3)

(7.53.1.8) Scopes

Select all that apply

- Scope 1
- Scope 2

(7.53.1.9) Scope 2 accounting method

Select from:

- Market-based

(7.53.1.11) End date of base year

12/30/2020

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

15556728

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

7623272

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

0.000

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

23180000.000

(7.53.1.33) Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

(7.53.1.34) Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

(7.53.1.53) Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

(7.53.1.54) End date of target

12/30/2050

(7.53.1.55) Targeted reduction from base year (%)

100

(7.53.1.56) Total emissions at end date of target covered by target in all selected Scopes (metric tons CO2e)

0.000

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

15367353

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

6972842

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

22340195.000

(7.53.1.78) Land-related emissions covered by target

Select from:

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

(7.53.1.79) % of target achieved relative to base year

3.62

(7.53.1.80) Target status in reporting year

Select from:

Underway

(7.53.1.82) Explain target coverage and identify any exclusions

The reporting boundary is company-wide.

(7.53.1.83) Target objective

The strategic objective of this target is to demonstrate our commitment to the objectives of the Paris Agreement and to set a science-based target on GHG emissions from our global operations to reach net zero by 2050. We show our commitment to delivering solutions which advance our customers' ambitions and support society's transition to a low carbon world.

(7.53.1.84) Plan for achieving target, and progress made to the end of the reporting year

Our 2050 net zero GHG emissions goal includes scope 1 and 2 emissions. Our pathway to net zero relies on four main reduction levers: optimizing energy efficiency in manufacturing, sourcing renewable electricity through power purchase agreements, increasing the use of hydrogen, and implementing carbon capture and storage/utilization (CCS/CCU) technologies. For our olefin plants, we aim to replace fossil fuels with low carbon hydrogen and renewable electricity, and to capture and utilize CO2 emissions. For our PO plants, which contribute 19% of our GHG footprint, we aim to improve steam and power supply efficiency, implement carbon capture, and find alternative uses for liquid by-product streams. The reporting boundary is company-wide. Our net zero 2050 target currently does not include scope 3 emissions in its coverage. There are many industry-wide challenges to the definition of scope 3 targets, including the lack of a uniform calculation methodology for scope 3 emissions, and the lack of sectoral guidance for target setting for the chemical industry. Rigorous emissions accounting is a prerequisite for the definition of a reliable baseline and the definition of a scope 3 target. LyondellBasell is part of several sectoral initiatives through its engagement with the World Economic Forum (WEF) and Together for Sustainability (TfS) to further understand and act upon the common challenges of the chemical industry in dealing with scope 3 emissions. The SBTi is developing a chemical sector-specific standard for defining science-based climate targets. Along with several industry peers, LYB is a member of the SBTi Expert Advisory Group (EAG) to support this development and provide input and feedback on this standard. This standard is expected to be published in 2024.

(7.53.1.85) Target derived using a sectoral decarbonization approach

Select from:

No

Row 2

(7.53.1.1) Target reference number

Select from:

Abs 2

(7.53.1.2) Is this a science-based target?

Select from:

Yes, we consider this a science-based target, and the target is currently being reviewed by the Science Based Targets initiative

(7.53.1.4) Target ambition

Select from:

Well-below 2°C aligned

(7.53.1.5) Date target was set

12/15/2022

(7.53.1.6) Target coverage

Select from:

- Organization-wide

(7.53.1.7) Greenhouse gases covered by target

Select all that apply

- Methane (CH4)
- Nitrous oxide (N2O)
- Carbon dioxide (CO2)
- Perfluorocarbons (PFCs)
- Hydrofluorocarbons (HFCs)
- Sulphur hexafluoride (SF6)
- Nitrogen trifluoride (NF3)

(7.53.1.8) Scopes

Select all that apply

- Scope 3

(7.53.1.10) Scope 3 categories

Select all that apply

- Scope 3, Category 1 – Purchased goods and services
- Scope 3, Category 3 – Fuel- and energy- related activities (not included in Scope 1 or 2)
- Scope 3, Category 4 – Upstream transportation and distribution
- Scope 3, Category 11 – Use of sold products
- Scope 3, Category 15 – Investments

(7.53.1.11) End date of base year

12/30/2020

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

26972024

(7.53.1.16) 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)

1952074

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

959462

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

42994244

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

2497208

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

75375012.000

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

75375012.000

(7.53.1.35) 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)

100.0

(7.53.1.37) 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)

100.0

(7.53.1.38) 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)

100.0

(7.53.1.45) 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)

100.0

(7.53.1.49) 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)

100.0

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

79

(7.53.1.53) Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

79

(7.53.1.54) End date of target

12/30/2030

(7.53.1.55) Targeted reduction from base year (%)

30

(7.53.1.56) Total emissions at end date of target covered by target in all selected Scopes (metric tons CO2e)

52762508.400

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

29696640

(7.53.1.61) 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)

2374122

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

1075778

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

47374053

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

2122947

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

82643540.000

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

82643540.000

(7.53.1.78) Land-related emissions covered by target

Select from:

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

(7.53.1.79) % of target achieved relative to base year

-32.14

(7.53.1.80) Target status in reporting year

Select from:

Underway

(7.53.1.82) Explain target coverage and identify any exclusions

The reporting boundary is companywide. Our company 2030 target is across scopes 1, 2, and 3. Our scope 3 target is reported separately here due to a different targeted reduction between scopes 1 and 2 (42% reduction and net zero commitment) and scope 3 (30% reduction).

(7.53.1.83) Target objective

The strategic objective of this target is to demonstrate our commitment to reducing GHG emissions from our value chain and to delivering solutions which advance our customers' climate ambitions and support society's transition to a low carbon world. As companies within our value chains increasingly set their own scope 3 goals, we believe our ambitious climate goals will be an advantage. We aim to deliver low carbon footprint materials that will meet increasing demand across our value chains.

(7.53.1.84) Plan for achieving target, and progress made to the end of the reporting year

In line with target setting requirements set forth by the SBTi, our target coverage of Scope 3 emissions corresponds to more than two thirds of estimated global scope 3 emissions, and includes emissions from our most material sources, including our feedstocks, our products, and our equity investments. Our approach to reducing scope 3 emissions is tied to the reduction levers listed below: Exit from our refining business: We estimate our exit from the sale of refined products, including gasoline, diesel and jet fuel, will represent a total reduction of approximately 40 million metric tons of scope 3 emissions annually. Use of circular feedstocks: We are increasing our use of renewable bio-based and recycled feedstocks, in line with our commitment to produce and market at least 2 million metric tons of recycled and renewable-based polymers annually by 2030. Engaging with suppliers: By engaging with suppliers, including those that supply our feedstocks and raw materials, we can better understand the product carbon footprint of the materials we procure from them and explore the potential for collaboration on emissions reduction opportunities. We utilize the product carbon footprint guidance from Together for Sustainability (TfS) to enable harmonization on scope 3 accounting approaches across the value chain. We also will stop procuring various raw materials, including crude oil, due to our exit from our refining business. Shifting to less carbon intensive fuels: Switching to the use of lower carbon intensive fuels in our operations may offer the potential to lower our scope 3 emissions, in addition to reducing our scope 1 and scope 2 emissions. Engaging with logistics providers: We are engaging with our logistics suppliers to better understand emissions linked to the transportation of our products to our customers and reviewing opportunities to optimize our distribution routes to reduce GHG emissions. We participated in the development of the Global Logistics Emissions Council (GLEC) guidance for the European Chemical Industry as part of the Smart Freight Centre and are working with logistics suppliers to improve the accuracy of emissions reporting to guide optimization efforts.

(7.53.1.85) Target derived using a sectoral decarbonization approach

Select from:

No

Row 3

(7.53.1.1) Target reference number

Select from:

Abs 1

(7.53.1.2) Is this a science-based target?

Select from:

- Yes, we consider this a science-based target, and the target is currently being reviewed by the Science Based Targets initiative

(7.53.1.4) Target ambition

Select from:

- 1.5°C aligned

(7.53.1.5) Date target was set

12/15/2022

(7.53.1.6) Target coverage

Select from:

- Organization-wide

(7.53.1.7) Greenhouse gases covered by target

Select all that apply

- Methane (CH₄)
- Nitrous oxide (N₂O)
- Carbon dioxide (CO₂)
- Perfluorocarbons (PFCs)
- Hydrofluorocarbons (HFCs)
- Sulphur hexafluoride (SF₆)
- Nitrogen trifluoride (NF₃)

(7.53.1.8) Scopes

Select all that apply

- Scope 1
- Scope 2

(7.53.1.9) Scope 2 accounting method

Select from:

Market-based

(7.53.1.11) End date of base year

12/30/2020

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

15556728

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

7623272

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

0.000

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

23180000.000

(7.53.1.33) Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100.0

(7.53.1.34) Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100.0

(7.53.1.53) Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

(7.53.1.54) End date of target

12/30/2030

(7.53.1.55) Targeted reduction from base year (%)

42

(7.53.1.56) Total emissions at end date of target covered by target in all selected Scopes (metric tons CO2e)

13444400.000

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

15367353

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

6972842

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

22340195.000

(7.53.1.78) Land-related emissions covered by target

Select from:

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

(7.53.1.79) % of target achieved relative to base year

8.63

(7.53.1.80) Target status in reporting year

Select from:

Underway

(7.53.1.82) Explain target coverage and identify any exclusions

The reporting boundary is companywide. Our company 2030 target is across Scopes 1, 2, and 3. Our Scope 3 target is reported separately here due to a different targeted reduction between Scopes 1 and 2 (42% reduction and net zero commitment) and Scope 3 (30% reduction).

(7.53.1.83) Target objective

The strategic objective of this target is to demonstrate progress by 2030 towards our long-term commitment to reaching a state of net zero GHG emissions in our global operations (Scopes 1 and 2) by 2050. By aligning our target ambition with a 1.5C pathway in line with the latest climate science, we commit to delivering solutions which advance our customers' ambitions and support society's transition to a low carbon world.

(7.53.1.84) Plan for achieving target, and progress made to the end of the reporting year

Our pathway to reach net zero scope 1 and 2 GHG emissions in our global operations by 2050 is based on four reduction levers that support our plans to reduce emissions from our portfolio. These are: energy efficiency, renewable electricity and electrification, hydrogen, and carbon capture and storage/utilization. Energy efficiency includes optimizing our use of energy in all of our manufacturing processes to lower our energy footprint, reduce GHG emissions, and reduce operational costs. Renewable electricity and electrification includes sourcing electricity from renewable electricity projects primarily through power purchase agreements, and electrifying processes to reduce our reliance on fossil fuels. Hydrogen includes increasing the use of hydrogen in our fuel mix used on-site for energy to replace other more carbon intensive fuels. Carbon capture and storage/utilization includes reducing direct emissions by enabling the capture and storage or reuse of CO₂ from our operations. We take into account organic growth and divestitures and previously announced closures of assets. We have accounted for the additional emissions from our new PO/TBA plant in Channelview, Texas, commissioned in March 2023. As announced in May 2023, we plan to cease refining operations at the Houston refinery no later than the end of first quarter 2025. This is expected to reduce scope 1 and scope 2 emissions by more than 3 million metric tons annually. As part of our efforts to reduce the emission footprint of our purchased electricity, we have committed to procure at least 50% of our electricity from renewable sources by 2030, based on 2020 procured levels. We signed several power purchase agreements (PPAs) in 2022 and 2023, the majority of which are virtual PPAs. As of December 2023, we have secured renewable electricity volumes through PPAs achieving almost 90% of our 2030 target. These agreements will generate an estimated 3.7 million megawatt hours of renewable electricity annually and reduce our scope 2 GHG emissions by more than 1.3 million metric tons of carbon emissions once projects are operational.

(7.53.1.85) Target derived using a sectoral decarbonization approach

Select from:

No

[Add row]

(7.54.1) Provide details of your targets to increase or maintain low-carbon energy consumption or production.

Row 1

(7.54.1.1) Target reference number

Select from:

Low 1

(7.54.1.2) Date target was set

09/28/2021

(7.54.1.3) Target coverage

Select from:

Organization-wide

(7.54.1.4) Target type: energy carrier

Select from:

Electricity

(7.54.1.5) Target type: activity

Select from:

Consumption

(7.54.1.6) Target type: energy source

Select from:

- Renewable energy source(s) only

(7.54.1.7) End date of base year

12/30/2020

(7.54.1.10) End date of target

12/30/2030

(7.54.1.11) % share of low-carbon or renewable energy at end date of target

50

(7.54.1.14) Target status in reporting year

Select from:

- Underway

(7.54.1.16) Is this target part of an emissions target?

The target to secure at least 50% of procured electricity volumes from renewable sources by 2030 is based on 2020 procured volumes. It aims to reduce the carbon emissions associated with procured electricity, which constitutes approximately 15% of the total scope 1 and 2 greenhouse gas (GHG) emissions. By increasing the use of renewable energy, we aim to lower the emissions derived from fossil fuel-generated electricity and steam, thus contributing to our overall emissions reduction efforts.

(7.54.1.17) Is this target part of an overarching initiative?

Select all that apply

- No, it's not part of an overarching initiative

[Add row]

(7.54.3) Provide details of your net-zero target(s).

Row 1

(7.54.3.1) Target reference number

Select from:

NZ1

(7.54.3.2) Date target was set

09/28/2021

(7.54.3.3) Target Coverage

Select from:

Organization-wide

(7.54.3.4) Targets linked to this net zero target

Select all that apply

Abs1

Abs3

(7.54.3.5) End date of target for achieving net zero

12/30/2050

(7.54.3.6) Is this a science-based target?

Select from:

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

(7.54.3.8) Scopes

Select all that apply

- Scope 1
- Scope 2

(7.54.3.9) Greenhouse gases covered by target

Select all that apply

- Methane (CH₄)
- Nitrous oxide (N₂O)
- Carbon dioxide (CO₂)
- Perfluorocarbons (PFCs)
- Hydrofluorocarbons (HFCs)
- Sulphur hexafluoride (SF₆)
- Nitrogen trifluoride (NF₃)

(7.54.3.10) Explain target coverage and identify any exclusions

We aim to achieve net zero GHG emissions from global operations under our control (scope 1 and scope 2) by 2050. The target coverage is company-wide. Our net zero 2050 target currently does not include scope 3. There are many industry-wide challenges to the definition of scope 3 targets, including the lack of a uniform calculation methodology for scope 3 emissions, and the lack of sectoral guidance for target setting for the chemical industry. Rigorous emissions accounting is a prerequisite for the definition of a reliable baseline and the definition of a scope 3 target. LyondellBasell is part of several sectoral initiatives through its engagement with the World Economic Forum (WEF) and Together for Sustainability (TfS) to further understand and act upon the common challenges of the chemical industry in dealing with scope 3 emissions. The SBTi is developing a chemical sector-specific standard for defining science-based climate targets. Along with several industry peers, LYB is a member of the SBTi Expert Advisory Group (EAG) to support this development and provide input and feedback on this standard. This standard is expected to be published in 2024.

(7.54.3.11) Target objective

We are committed to reducing GHG emissions from our global operations and value chain, and to delivering solutions which advance our customers' climate ambitions and support society's transition to a low carbon world. As companies within our value chains increasingly set their own scope 3 goals, we believe our ambitious climate goals will be an advantage. We aim to deliver low carbon footprint materials that will meet increasing demand across our value chains.

(7.54.3.12) Do you intend to neutralize any residual emissions with permanent carbon removals at the end of the target?

Select from:

Unsure

(7.54.3.13) Do you plan to mitigate emissions beyond your value chain?

Select from:

No, and we do not plan to within the next two years

(7.54.3.17) Target status in reporting year

Select from:

Underway

(7.54.3.19) Process for reviewing target

The Executive Committee is supported by the Sustainability Council, which was formed in 2023 and provides guidance in all matters related to sustainability, including on climate-related matters. The Net Zero Transition team, established in 2022, and reporting to our Executive Vice President of Operational Excellence and HSE, is responsible for the execution of our plans to reach our interim and long-term scope 1 and scope 2 GHG emission reduction goals. Since 2022, sustainability has been factored into our short-term incentive program for our CEO, Executive Committee and employees. The Health, Safety, Environmental, and Sustainability (HSE&S) Committee of our Board oversees risks and opportunities related to safety, sustainability and climate change. Management reports on key sustainability and climate topics and initiatives at each regularly scheduled HSE&S Committee meeting, and the Board participates in a deep dive on sustainability strategy and actions at least annually. During the Board's annual strategy meeting in July 2023, the Board reviewed the Company's strategy, progress, and programs related to its goals on sustainability, climate and the circular economy, and the HSE&S Committee reviewed updates to the Company's ESG dashboard, which summarizes key environmental, social and governance metrics and activities, at each of its regularly-scheduled meetings.

[Add row]

(7.55.1) 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	57	`Numeric input
To be implemented	4	270000
Implementation commenced	20	1872000
Implemented	37	321284
Not to be implemented	0	`Numeric input

[Fixed row]

(7.55.2) Provide details on the initiatives implemented in the reporting year in the table below.

Row 1

(7.55.2.1) Initiative category & Initiative type

Energy efficiency in production processes

Process optimization

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

321284

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

Select all that apply

Scope 1

(7.55.2.4) Voluntary/Mandatory

Select from:

Voluntary

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

31321943

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

7280000

(7.55.2.7) Payback period

Select from:

4-10 years

(7.55.2.8) Estimated lifetime of the initiative

Select from:

11-15 years

(7.55.2.9) Comment

[Add row]

(7.55.3) What methods do you use to drive investment in emissions reduction activities?

Row 1

(7.55.3.1) Method

Select from:

- Marginal abatement cost curve

(7.55.3.2) Comment

Our process to develop and implement an emission reduction program to reach our interim and long-term scope 1 and 2 targets starts with an ideation phase at all our larger manufacturing sites (olefins and I&D) to generate potential project ideas on how to reduce emissions at our sites. These ideas are assessed using Marginal Abatement Cost Curves (MACCs) to evaluate and compare the associated CO2e abatement cost.

Row 2

(7.55.3.1) Method

Select from:

- Internal price on carbon

(7.55.3.2) Comment

Integrating climate into our business planning is a crucial step in our journey to drive cost-effective climate action and achieve our ambitions. We use an internal price on carbon as part of our capital allocation processes, maintaining a regional differentiated approach, with price levels defined in line with the Emissions Trading System (ETS) carbon market in the EU and through benchmarking of the industry in the U.S. and for the rest of our global operations. The use of an internal carbon price (ICP) is a key enabler for us to progress toward our 2030 and 2050 scope 1 and scope 2 targets, allowing us to assign a monetary value to our GHG emissions and integrate this value into our business planning. As the energy transition progresses, we anticipate an increased value for carbon, driven by expected increases in global carbon regulations and growing customer willingness to pay a premium for low carbon products. In 2023, we followed a multidisciplinary approach to review our processes through which we define our internal carbon price, with the objective of having a more uniform use across our operations and strategic decisions. Implementation of our revised ICP will place greater emphasis on low carbon alternatives in growth projects and influence considerations around new projects.

Row 3

(7.55.3.1) Method

Select from:

- Financial optimization calculations

(7.55.3.2) Comment

Energy and CO2 reduction projects are subject to the standard LyondellBasell capital allocation and evaluation processes, which include a financial analysis of the project payback period as well as a sensitivity analysis.

Row 4

(7.55.3.1) Method

Select from:

- Compliance with regulatory requirements/standards

(7.55.3.2) Comment

Several LyondellBasell manufacturing sites operate under the EU ETS regulations. The increasing costs associated with compliance act as a financial driver for investment in low-carbon technology and R&D activities.

Row 5

(7.55.3.1) Method

Select from:

- Internal incentives/recognition programs

(7.55.3.2) Comment

To underscore our commitment to safety, accountability and timely delivery of our climate and circularity goals, ESG performance accounts for 30% of the total payout under the company's short-term incentive program (20% Safety and 10% Sustainability). Under our sustainability metric, payout is based on the accomplishment of key milestones approved by the C&TD Committee. For 2023, we focused on three milestones: (1) execute Power Purchase Agreements with cumulative volume from

January 1, 2022 of 700 GW of renewable electricity capacity; (2) leverage transformation projects to improve energy efficiency by 1% from a 2021 baseline; and (3) produce and market 150kt of recycled and renewable-based polymers in 2023. Target and actual performance levels for each milestone are summarized in our 2024 Proxy Statement. These climate-related performance metrics are directly tied to executive and employee remuneration through the short-term incentive program and contribute to driving investment in emission reduction activities.

[Add row]

(7.74.1) Provide details of your products and/or services that you classify as low-carbon products.

Row 1

(7.74.1.1) Level of aggregation

Select from:

Product or service

(7.74.1.2) Taxonomy used to classify product(s) or service(s) as low-carbon

Select from:

The EU Taxonomy for environmentally sustainable economic activities

(7.74.1.3) Type of product(s) or service(s)

Chemicals and plastics

Other, please specify :Propylene Oxide

(7.74.1.4) Description of product(s) or service(s)

We produce propylene oxide (PO) through two distinct technologies, one of which yields tertiary butyl alcohol (TBA) as the co-product and the other which yields styrene monomer (SM) as the co-product. The two technologies are mutually exclusive with dedicated assets for manufacturing. PO is an intermediate commodity chemical and is a precursor of polyols, propylene glycol, propylene glycol ethers, and butadienol. PO and derivatives are used in a variety of durable and consumable items with key applications such as polyurethanes used for insulation, automotive/furniture cushioning, coatings, surfactants, synthetic resins and several other household usages. CarbonMinds, an industry leader and provider of a TfS compliant background database, identifies POTBA and POSM as having the lowest carbon footprint amongst the existing commercial PO technologies, based on global average data for each commercial PO technology.

(7.74.1.5) Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Select from:

Yes

(7.74.1.6) Methodology used to calculate avoided emissions

Select from:

Other, please specify :LCA ISO 14040-44 & 14067

(7.74.1.7) Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Select from:

Cradle-to-gate

(7.74.1.8) Functional unit used

Metric ton of Propylene Oxide (PO) produced

(7.74.1.9) Reference product/service or baseline scenario used

Equivalent of publicly available data for PO from Sphera Solutions, LCA for Experts, database version 2022.2. Reference period for data collection 2020.

(7.74.1.10) Life cycle stage(s) covered for the reference product/service or baseline scenario

Select from:

Cradle-to-gate

(7.74.1.11) Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

1.42

(7.74.1.12) Explain your calculation of avoided emissions, including any assumptions

We finalized an ISO 14040/44 compliant life cycle assessment study for our PO and derivatives portfolio in December 2022. The estimated avoided emissions and generated revenue relate to our PO&D portfolio, which includes lower-carbon products produced via proprietary PO/TBA and POSM technology. When compared with publicly available LCA data averaged for other conventional production routes the difference in the cradle-to-gate product carbon footprint between the products is 1.42 metric tons per metric ton PO produced.

(7.74.1.13) Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

5.56

Row 2

(7.74.1.1) Level of aggregation

Select from:

- Group of products or services

(7.74.1.2) Taxonomy used to classify product(s) or service(s) as low-carbon

Select from:

- The EU Taxonomy for environmentally sustainable economic activities

(7.74.1.3) Type of product(s) or service(s)

Chemicals and plastics

- Other, please specify :Renewable-based and recycled polymers

(7.74.1.4) Description of product(s) or service(s)

Our product portfolio contains a number of recycled and renewable, bio-based polymers that provide GHG benefits through a lower cradle to gate carbon footprint compared to the equivalent fossil-based product, and/or climate benefits in the product's use. For example, our CirculenRenew polymers are made from renewable feedstocks based on waste and residue bio-based oils, using a mass balance approach, and have a wide range of end-use applications. Our manufacturing sites producing our CirculenRenew products maintain ISCC PLUS certification to ensure traceability along the supply chain and enable the renewable content to be attributed to the final polymer using a certified mass balance method.

(7.74.1.5) Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Select from:

Yes

(7.74.1.6) Methodology used to calculate avoided emissions

Select from:

Other, please specify :LCA ISO 14040-44 & 14067

(7.74.1.7) Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Select from:

Cradle-to-gate

(7.74.1.8) Functional unit used

Metric ton polymer produced

(7.74.1.9) Reference product/service or baseline scenario used

Equivalent fossil-based polymer from LyondellBasell manufacturing asset; reference period for data collection 2021.

(7.74.1.10) Life cycle stage(s) covered for the reference product/service or baseline scenario

Select from:

Cradle-to-gate

(7.74.1.11) Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

4.38

(7.74.1.12) Explain your calculation of avoided emissions, including any assumptions

We finalized an ISO 14040/44 compliant comparative life cycle assessment study for our CirculenRenew polymer grades with their fossil-based equivalents in 2023. Our CirculenRenew polymer grades are manufactured using a feedstock composed of bio-based waste and residue oils. We evaluated the avoided emissions for PP, LDPE, HDPE, and LLDPE. The highest avoided emissions were observed for HDPE, with up to 4.38 metric tons CO2e per metric ton of polymer produced, representing the difference in the cradle-to-gate product carbon footprint between the two products in both North America and Europe. The revenue disclosed is related to our total 2023 sales of recycled and renewable-based products and is equivalent to less than 1% of our global revenues. In addition to our CirculenRenew offering, we offer CirculenRecover and CirculenRevive products. CirculenRecover products are made from plastic waste through a mechanical recycling process, upgrading waste into usable materials for various applications. CirculenRevive products use an advanced recycling process to convert plastic waste back to its molecular level, suitable for highly regulated applications like food contact and healthcare.

(7.74.1.13) Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

1

[Add row]

C8. Environmental performance - Forests

(8.1) Are there any exclusions from your disclosure of forests-related data?

	Exclusion from disclosure
Timber products	<i>Select from:</i> <input checked="" type="checkbox"/> No
Palm oil	<i>Select from:</i> <input checked="" type="checkbox"/> No
Cattle products	<i>Select from:</i> <input checked="" type="checkbox"/> No
Soy	<i>Select from:</i> <input checked="" type="checkbox"/> No

[Fixed row]

(8.2) Provide a breakdown of your disclosure volume per commodity.

	Disclosure volume (metric tons)	Volume type	Sourced volume (metric tons)
Timber products	0	Select all that apply <input checked="" type="checkbox"/> Sourced	0
Palm oil	0	Select all that apply <input checked="" type="checkbox"/> Sourced	0
Cattle products	0	Select all that apply <input checked="" type="checkbox"/> Sourced	0
Soy	0	Select all that apply <input checked="" type="checkbox"/> Sourced	0

[Fixed row]

(8.5) Provide details on the origins of your sourced volumes.

Timber products

(8.5.1) Country/area of origin

Select from:

Unknown origin

(8.5.4) Volume sourced from country/area of origin (metric tons)

0

(8.5.5) Source

Select all that apply

Other, please specify :to be determined

(8.5.7) Please explain

We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Palm oil

(8.5.1) Country/area of origin

Select from:

Unknown origin

(8.5.4) Volume sourced from country/area of origin (metric tons)

0

(8.5.5) Source

Select all that apply

Other, please specify :to be determined

(8.5.7) Please explain

We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Cattle products

(8.5.1) Country/area of origin

Select from:

Unknown origin

(8.5.4) Volume sourced from country/area of origin (metric tons)

0

(8.5.5) Source

Select all that apply

Other, please specify :to be determined

(8.5.7) Please explain

We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Soy

(8.5.1) Country/area of origin

Select from:

Unknown origin

(8.5.4) Volume sourced from country/area of origin (metric tons)

0

(8.5.5) Source

Select all that apply

Other, please specify :to be determined

(8.5.7) Please explain

We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

[Add row]

(8.7) Did your organization have a no-deforestation or no-conversion target, or any other targets for sustainable production/ sourcing of your disclosed commodities, active in the reporting year?

Timber products

(8.7.1) Active no-deforestation or no-conversion target

Select from:

No, and we do not plan to have a no-deforestation or no-conversion target in the next two years

(8.7.3) Primary reason for not having an active no-deforestation or no-conversion target in the reporting year

Select from:

Not an immediate strategic priority

(8.7.4) Explain why you did not have an active no-deforestation or no-conversion target in the reporting year

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

(8.7.5) Other active targets related to this commodity, including any which contribute to your no-deforestation or no-conversion target

Select from:

No, and we do not plan to have other targets related to this commodity in the next two years

(8.7.6) Primary reason for not having other active targets in the reporting year

Select from:

Not an immediate strategic priority

(8.7.7) Explain why you did not have other active targets in the reporting year

We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Palm oil

(8.7.1) Active no-deforestation or no-conversion target

Select from:

No, and we do not plan to have a no-deforestation or no-conversion target in the next two years

(8.7.3) Primary reason for not having an active no-deforestation or no-conversion target in the reporting year

Select from:

- Not an immediate strategic priority

(8.7.4) Explain why you did not have an active no-deforestation or no-conversion target in the reporting year

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

(8.7.5) Other active targets related to this commodity, including any which contribute to your no-deforestation or no-conversion target

Select from:

- No, and we do not plan to have other targets related to this commodity in the next two years

(8.7.6) Primary reason for not having other active targets in the reporting year

Select from:

- Not an immediate strategic priority

(8.7.7) Explain why you did not have other active targets in the reporting year

We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Cattle products

(8.7.1) Active no-deforestation or no-conversion target

Select from:

- No, and we do not plan to have a no-deforestation or no-conversion target in the next two years

(8.7.3) Primary reason for not having an active no-deforestation or no-conversion target in the reporting year

Select from:

- Not an immediate strategic priority

(8.7.4) Explain why you did not have an active no-deforestation or no-conversion target in the reporting year

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

(8.7.5) Other active targets related to this commodity, including any which contribute to your no-deforestation or no-conversion target

Select from:

- No, and we do not plan to have other targets related to this commodity in the next two years

(8.7.6) Primary reason for not having other active targets in the reporting year

Select from:

- Not an immediate strategic priority

(8.7.7) Explain why you did not have other active targets in the reporting year

We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Soy

(8.7.1) Active no-deforestation or no-conversion target

Select from:

No, and we do not plan to have a no-deforestation or no-conversion target in the next two years

(8.7.3) Primary reason for not having an active no-deforestation or no-conversion target in the reporting year

Select from:

Not an immediate strategic priority

(8.7.4) Explain why you did not have an active no-deforestation or no-conversion target in the reporting year

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

(8.7.5) Other active targets related to this commodity, including any which contribute to your no-deforestation or no-conversion target

Select from:

No, and we do not plan to have other targets related to this commodity in the next two years

(8.7.6) Primary reason for not having other active targets in the reporting year

Select from:

- Not an immediate strategic priority

(8.7.7) Explain why you did not have other active targets in the reporting year

We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain additional information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

[Fixed row]

(8.8) Indicate if your organization has a traceability system to determine the origins of your sourced volumes and provide details of the methods and tools used.

Timber products

(8.8.1) Traceability system

Select from:

- No, but we plan to establish one within the next two years

(8.8.4) Primary reason your organization does not have a traceability system

Select from:

- No standardized procedure

(8.8.5) Explain why your organization does not have a traceability system

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Palm oil

(8.8.1) Traceability system

Select from:

Yes

(8.8.2) Methods/tools used in traceability system

Select all that apply

- Chain-of-custody certification
- Value chain mapping
- Supplier engagement/communication
- Internal traceability system

(8.8.3) Description of methods/tools used in traceability system

For our Circulen, LC and other I&D products, we use a Mass Balance approach as the chain of custody option where sustainable and fossil materials are segregated in bookkeeping in compliance with ISCC certification. We track incoming and outgoing transactions for ISCC certification including but not limited to the type of original raw material, such as palm fatty acid distillates (PFAD) or used cooking oil, the vegetable origin, the country of origin, compliance status, sustainability characteristics and the outgoing material type. The physical flow of materials throughout the supply chain is tracked including:

- Incoming and Outgoing Sustainability Declarations
- List of ISCC certified suppliers and recipients
- Weight/volume shipping records
- Purchase/sales documents
- Mass Balance tracking tool

We participate in annual third-party external audits as verification of compliance with ISCC EU 203 Traceability and Chain of Custody.

Cattle products

(8.8.1) Traceability system

Select from:

Yes

(8.8.2) Methods/tools used in traceability system

Select all that apply

- Chain-of-custody certification
- Value chain mapping
- Supplier engagement/communication
- Internal traceability system

(8.8.3) Description of methods/tools used in traceability system

For our Circulen, LC and other I&D products, we use a Mass Balance approach as the chain of custody option where sustainable and fossil materials are segregated in bookkeeping in compliance with ISCC certification. We track incoming and outgoing transactions for ISCC certification including but not limited to the type of original raw material, such as palm fatty acid distillates (PFAD) or used cooking oil, the vegetable origin, the country of origin, compliance status, sustainability characteristics and the outgoing material type. The physical flow of materials throughout the supply chain is tracked including:

- Incoming and Outgoing Sustainability Declarations
- List of ISCC certified suppliers and recipients
- Weight/volume shipping records
- Purchase/sales documents
- Mass Balance tracking tool

We participate in annual third-party external audits as verification of compliance with ISCC EU 203 Traceability and Chain of Custody.

Soy

(8.8.1) Traceability system

Select from:

No, but we plan to establish one within the next two years

(8.8.4) Primary reason your organization does not have a traceability system

Select from:

No standardized procedure

(8.8.5) Explain why your organization does not have a traceability system

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

[Fixed row]

(8.8.1) Provide details of the point to which your organization can trace its sourced volumes.

Palm oil

(8.8.1.1) % of sourced volume traceable to production unit

0

(8.8.1.2) % of sourced volume traceable to sourcing area and not to production unit

0

(8.8.1.3) % sourced volume traceable to country/area of origin and not to sourcing area or production unit

0

(8.8.1.4) % of sourced volume traceable to other point (i.e., processing facility/first importer) not in the country/area of origin

0

(8.8.1.5) % of sourced volume from unknown origin

100

(8.8.1.6) % of sourced volume reported

100.00

Cattle products

(8.8.1.1) % of sourced volume traceable to production unit

0

(8.8.1.2) % of sourced volume traceable to sourcing area and not to production unit

0

(8.8.1.3) % sourced volume traceable to country/area of origin and not to sourcing area or production unit

0

(8.8.1.4) % of sourced volume traceable to other point (i.e., processing facility/first importer) not in the country/area of origin

0

(8.8.1.5) % of sourced volume from unknown origin

100

(8.8.1.6) % of sourced volume reported

100.00

(8.9) Provide details of your organization's assessment of the deforestation-free (DF) or deforestation- and conversion-free (DCF) status of its disclosed commodities.

Timber products

(8.9.1) DF/DCF status assessed for this commodity

Select from:

No, but we plan to do so within the next two years

(8.9.6) Is a proportion of your disclosure volume certified through a scheme not providing full DF/DCF assurance?

Select from:

No

(8.9.7) Primary reason for not assessing DF/DCF status

Select from:

Judged to be unimportant or not relevant

(8.9.8) Explain why you have not assessed DF/DCF status

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Palm oil

(8.9.1) DF/DCF status assessed for this commodity

Select from:

No, but we plan to do so within the next two years

(8.9.6) Is a proportion of your disclosure volume certified through a scheme not providing full DF/DCF assurance?

Select from:

No

(8.9.7) Primary reason for not assessing DF/DCF status

Select from:

Judged to be unimportant or not relevant

(8.9.8) Explain why you have not assessed DF/DCF status

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally. We purchase bio-based feedstock and additives products commercially. We are not aware of any sourcing from smallholders.

Cattle products

(8.9.1) DF/DCF status assessed for this commodity

Select from:

No, but we plan to do so within the next two years

(8.9.6) Is a proportion of your disclosure volume certified through a scheme not providing full DF/DCF assurance?

Select from:

No

(8.9.7) Primary reason for not assessing DF/DCF status

Select from:

Judged to be unimportant or not relevant

(8.9.8) Explain why you have not assessed DF/DCF status

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally. We purchase bio-based feedstock and additives products commercially. We are not aware of any sourcing from smallholders.

Soy

(8.9.1) DF/DCF status assessed for this commodity

Select from:

No, but we plan to do so within the next two years

(8.9.6) Is a proportion of your disclosure volume certified through a scheme not providing full DF/DCF assurance?

Select from:

No

(8.9.7) Primary reason for not assessing DF/DCF status

Select from:

Judged to be unimportant or not relevant

(8.9.8) Explain why you have not assessed DF/DCF status

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally. We purchase bio-based feedstock and additives products commercially. We are not aware of any sourcing from smallholders.

[Fixed row]

(8.10) Indicate whether you have monitored or estimated the deforestation and conversion of other natural ecosystems footprint for your disclosed commodities.

Timber products

(8.10.1) Monitoring or estimating your deforestation and conversion footprint

Select from:

No, and we do not plan to monitor or estimate our deforestation and conversion footprint in the next two years

(8.10.2) Primary reason for not monitoring or estimating deforestation and conversion footprint

Select from:

Not an immediate strategic priority

(8.10.3) Explain why you do not monitor or estimate your deforestation and conversion footprint

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Palm oil

(8.10.1) Monitoring or estimating your deforestation and conversion footprint

Select from:

No, and we do not plan to monitor or estimate our deforestation and conversion footprint in the next two years

(8.10.2) Primary reason for not monitoring or estimating deforestation and conversion footprint

Select from:

Not an immediate strategic priority

(8.10.3) Explain why you do not monitor or estimate your deforestation and conversion footprint

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Cattle products

(8.10.1) Monitoring or estimating your deforestation and conversion footprint

Select from:

No, and we do not plan to monitor or estimate our deforestation and conversion footprint in the next two years

(8.10.2) Primary reason for not monitoring or estimating deforestation and conversion footprint

Select from:

Not an immediate strategic priority

(8.10.3) Explain why you do not monitor or estimate your deforestation and conversion footprint

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

Soy

(8.10.1) Monitoring or estimating your deforestation and conversion footprint

Select from:

No, and we do not plan to monitor or estimate our deforestation and conversion footprint in the next two years

(8.10.2) Primary reason for not monitoring or estimating deforestation and conversion footprint

Select from:

- Not an immediate strategic priority

(8.10.3) Explain why you do not monitor or estimate your deforestation and conversion footprint

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

[Fixed row]

(8.11) For volumes not assessed and determined as deforestation- and conversion-free (DCF), indicate if you have taken actions in the reporting year to increase production or sourcing of DCF volumes.

	Actions taken to increase production or sourcing of DCF volumes
Timber products	Select from: <input checked="" type="checkbox"/> No, and we do not plan to within the next two years
Palm oil	Select from: <input checked="" type="checkbox"/> No, and we do not plan to within the next two years
Cattle products	Select from: <input checked="" type="checkbox"/> No, and we do not plan to within the next two years
Soy	Select from: <input checked="" type="checkbox"/> No, and we do not plan to within the next two years

[Fixed row]

(8.14) Indicate if you assess your own compliance and/or the compliance of your suppliers with forest regulations and/or mandatory standards, and provide details.

(8.14.1) Assess legal compliance with forest regulations

Select from:

No, but we plan to within the next two years

(8.14.5) Please explain

We believe we have limited use of forest risk commodities. We plan to collect information from our suppliers on the products that we are sourcing in the European Union that are listed in Annex I of the EU Regulation 2023/1115 on Deforestation Free Products, including ingredient percentages. We anticipate that through this process we will obtain information from our suppliers on the origins of the commodities from which these products are sourced. We will also assess whether we can apply any new information gathering processes globally.

[Fixed row]

(8.15) Do you engage in landscape (including jurisdictional) initiatives to progress shared sustainable land use goals?

(8.15.1) Engagement in landscape/jurisdictional initiatives

Select from:

No, we do not engage in landscape/jurisdictional initiatives, and we do not plan to within the next two years

(8.15.2) Primary reason for not engaging in landscape/jurisdictional initiatives

Select from:

Not an immediate strategic priority

(8.15.3) Explain why your organization does not engage in landscape/jurisdictional initiatives

Engaging in landscape/jurisdictional approaches is not our immediate strategic priority.

[Fixed row]

C9. Environmental performance - Water security

(9.1.1) Provide details on these exclusions.

Row 1

(9.1.1.1) Exclusion

Select from:

Facilities

(9.1.1.2) Description of exclusion

We do not include our regional offices in the total water volumes reported. The water volumes from these offices are immaterial when compared to our overall water data.

(9.1.1.3) Reason for exclusion

Select from:

Small volume [rainwater]

(9.1.1.7) Percentage of water volume the exclusion represents

Select from:

Less than 1%

(9.1.1.8) Please explain

We analyzed water consumption data from our regional offices and compared it with our overall global water usage. The consumption at these facilities accounted for less than 1% of our total reported water use, making it immaterial from a global perspective.

[Add row]

(9.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

Water withdrawals – total volumes

(9.2.1) % of sites/facilities/operations

Select from:

100%

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

Water withdrawals are measured at the sites, typically by metering, either directly on site or via a municipal or local water supplier. Meters provide continuous, cumulative quantity output. Data is collected from meters by various methods such as direct manual readings or electronic means.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell collects and reports this data annually.

Water withdrawals – volumes by source

(9.2.1) % of sites/facilities/operations

Select from:

100%

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

We track water withdrawals by the following intake sources: freshwater, groundwater, brackish/seawater, and intake from third party sources. Water withdrawals are measured at the sites, typically by metering, either directly on site or via a municipal or local water supplier. Meters provide continuous, cumulative quantity output. Data is collected from meters by various methods such as direct manual readings or electronic means.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell collects and reports this data annually.

Water withdrawals quality

(9.2.1) % of sites/facilities/operations

Select from:

76-99

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

We measure and monitor withdrawal water quality as required by local regulations for potable water supply, as applicable, and also to assure suitability for specific industrial water uses. We confirm water supplies delivered from municipalities or other third party suppliers are monitored for quality before distribution to our sites. Withdrawal quality is typically analyzed using locally approved test methods.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell collects and reports this data annually. Our Operational Excellence systems support ongoing compliance with withdrawal water quality requirements.

Water discharges – total volumes

(9.2.1) % of sites/facilities/operations

Select from:

100%

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

Water discharges are measured at the sites, either directly on site or via a municipality. Measurement methods include frequent gauging of the water levels within discharge structures and metering. Meters provide continuous, cumulative quantity output. Volume data is calculated using water level data or collected from meters by various methods. In some cases, municipalities choose to estimate discharge volumes based on the volume of water supplied to their customers.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell collects and reports this data annually.

Water discharges – volumes by destination

(9.2.1) % of sites/facilities/operations

Select from:

100%

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

We track water discharge by the following destinations: fresh surface water, groundwater, offsite treatment, seawater/brackish water, and other destinations. Measurement methods include frequent gauging of the water levels within discharge structures and metering. Volume data is calculated using water level data or collected from meters by various methods. In some cases, municipalities choose to estimate discharge volumes based on the volume of water supplied to their customers.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell collects and reports this data annually.

Water discharges – volumes by treatment method

(9.2.1) % of sites/facilities/operations

Select from:

100%

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

LyondellBasell wastewaters are treated via one or more biological, physical, or chemical treatment methods before being discharged, or wastewater discharges are sent directly to a 3rd party facility for treatment. Some water is used for cooling but does not come into contact with production activity. Therefore, no treatment is required for these streams prior to discharge. Measurement methods include frequent gauging of the water levels within discharge structures.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell collects and reports this data annually. We manage water in accordance with permitted limits for discharge destination water quality, and our Operational Excellence system supports ongoing compliance. Operational Excellence is the management system we use to deliver safety, environmental responsibility and reliability in everything we do. It sets out clear requirements for how we work, includes explicit requirements for people, process and product safety, and applies to our employees and contractors.

Water discharge quality – by standard effluent parameters

(9.2.1) % of sites/facilities/operations

Select from:

51-75

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

Where applicable, sites monitor effluent condition and report on water treatment, monitoring, and pollution prevention at a frequency required by the jurisdiction. Where water is delivered to a third party, we confirm water quality testing before discharging treated water. Potential wastewater pollutants are identified and evaluated at the site-level. The percentage represents the proportion of sites that monitor standard effluent parameters. Discharge quality is analyzed using approved methods.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell collects and reports data on site monitoring of effluent parameters annually. LyondellBasell requires sites that analyze for Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) for wastewater discharges to a receiving water body provide the weighted-average results for these parameters annually. We manage water in accordance with permitted limits for discharge destination water quality, and our Operational Excellence system supports ongoing compliance.

Water discharge quality – emissions to water (nitrates, phosphates, pesticides, and/or other priority substances)

(9.2.1) % of sites/facilities/operations

Select from:

26-50

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

Where applicable, our sites monitor effluent conditions, including nitrates, phosphates, pesticides, at a frequency required by the jurisdiction. The percentage entered represents the proportion of our sites that monitor nitrates, phosphates, or pesticides. Discharge quality is typically analyzed using locally approved test methods.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell collects and reports data on site monitoring of effluent parameters annually. We manage water in accordance with permitted limits for discharge destination water quality, and our Operational Excellence system supports ongoing compliance.

Water discharge quality – temperature

(9.2.1) % of sites/facilities/operations

Select from:

26-50

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

Where applicable, our sites monitor effluent conditions, including temperature, and maintain and monitor pollution prevention measures, at a frequency required by the jurisdiction. The percentage entered represents the proportion of our sites that monitor temperature. Discharge quality is typically analyzed using locally approved test methods.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell collects and reports data on site monitoring of effluent parameters annually. We manage water in accordance with permitted limits for discharge destination water quality, and our Operational Excellence systems support ongoing compliance with water discharge quality requirements.

Water consumption – total volume

(9.2.1) % of sites/facilities/operations

Select from:

100%

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

LyondellBasell calculates total water consumption volume based on the annual site estimates of water withdrawals and water discharges. Water withdrawals are measured at the sites, typically by metering or via a municipal or local water supplier. Measurement methods for water discharges include frequent gauging of the water levels within structures and metering. In some cases, municipalities choose to estimate discharge volumes based on the volume of water supplied to their customers.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell calculates and reports this data annually.

Water recycled/reused

(9.2.1) % of sites/facilities/operations

51-75

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

Some sites are required by permit or other mechanism to measure and monitor recycled water use, such as for use in cooling water systems. In remaining cases, sites estimate the volumes based on assumptions about cycles, pump curve data, or other reasonable means to estimate. We ask sites to estimate volumes of water routed to recycle systems. The percentage entered represents the proportion of our sites that reported water volume routed to recycle systems in the period.

(9.2.4) Please explain

We recycle our supply of water, when feasible, to limit the amount we draw from regional supplies. LyondellBasell collects site-specific estimates of recycled/reused water on an annual basis.

The provision of fully-functioning, safely managed WASH services to all workers

(9.2.1) % of sites/facilities/operations

Select from:

100%

(9.2.2) Frequency of measurement

Select from:

Yearly

(9.2.3) Method of measurement

Water withdrawals for potable use are measured at the sites, typically by metering, either directly on site or via a municipal or local water supplier. We measure and monitor withdrawal water quality as required by local regulations for potable water supply. We confirm water supplies delivered from municipalities or other third-party suppliers are monitored for quality before distribution to our sites. Withdrawal quality is typically analyzed using locally approved test methods.

(9.2.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, LyondellBasell collects and reports this data annually. Our Operational Excellence systems support ongoing compliance with WASH services requirements.

[Fixed row]

(9.2.2) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, how do they compare to the previous reporting year, and how are they forecasted to change?

Total withdrawals

(9.2.2.1) Volume (megaliters/year)

279000

(9.2.2.2) Comparison with previous reporting year

Select from:

About the same

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.2.4) Five-year forecast

Select from:

About the same

(9.2.2.5) Primary reason for forecast

Increase/decrease in business activity

(9.2.2.6) Please explain

2023 withdrawals were about the same as 2022 total withdrawals of 272,500 megaliters. The variation between years can be attributed to normal fluctuations in global production. We anticipate future withdrawals to be about the same as current year withdrawals.

Total discharges

(9.2.2.1) Volume (megaliters/year)

163600

(9.2.2.2) Comparison with previous reporting year

Select from:

About the same

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.2.4) Five-year forecast

Select from:

About the same

(9.2.2.5) Primary reason for forecast

Select from:

Increase/decrease in business activity

(9.2.2.6) Please explain

2023 discharges were about the same as the 2022 total discharges of 161,200 megaliters. The variation between years can be attributed to normal fluctuations in global production. We anticipate future discharges to be about the same as current year withdrawals.

Total consumption

(9.2.2.1) Volume (megaliters/year)

115500

(9.2.2.2) Comparison with previous reporting year

Select from:

About the same

(9.2.2.3) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.2.4) Five-year forecast

Select from:

About the same

(9.2.2.5) Primary reason for forecast

Select from:

Increase/decrease in business activity

(9.2.2.6) Please explain

LyondellBasell calculates total consumption as the difference in withdrawals and discharges. Consumption was about the same in 2023 compared to 111,400 megaliters in 2022. The variation between years can be attributed to normal fluctuations in global production. We anticipate future consumption to be about the same as current year consumption.

[Fixed row]

(9.2.4) Indicate whether water is withdrawn from areas with water stress, provide the volume, how it compares with the previous reporting year, and how it is forecasted to change.

(9.2.4.1) Withdrawals are from areas with water stress

Select from:

Yes

(9.2.4.2) Volume withdrawn from areas with water stress (megaliters)

209

(9.2.4.3) Comparison with previous reporting year

Select from:

About the same

(9.2.4.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.4.5) Five-year forecast

Select from:

About the same

(9.2.4.6) Primary reason for forecast

Select from:

- Increase/decrease in business activity

(9.2.4.7) % of total withdrawals that are withdrawn from areas with water stress

0.07

(9.2.4.8) Identification tool

Select all that apply

- WRI Aqueduct

(9.2.4.9) Please explain

In 2020, we conducted a baseline water risk assessment of our manufacturing sites using the World Resources Institute (WRI) Aqueduct Water Risk Atlas tool. We refreshed our baseline water risk assessments in 2023, using the World Resources Institute Aqueduct TM Tool (AqueductT M), version 3.0. Aqueduct TM which rates geographic locations worldwide on a scale from low to extremely high overall water risk based on watershed data related to water quantity stress, quality and regional factors. Our sites located in extremely high or high water risk areas of the world comprised less than 0.06% of our estimated total water consumption. We engaged a third party expert to complete a water use and risk assessment as a supplement to the Aqueduct assessment. The assessment focused on our large manufacturing facilities encompassing over 98% of our global water consumption. None of these sites were identified as high or extremely high overall risk in the Aqueduct assessment. Results of the assessment will be used to help guide possible watershed-specific targets, approaches and improvements.

[Fixed row]

(9.2.7) Provide total water withdrawal data by source.

Fresh surface water, including rainwater, water from wetlands, rivers, and lakes

(9.2.7.1) Relevance

Select from:

- Relevant

(9.2.7.2) Volume (megaliters/year)

148200

(9.2.7.3) Comparison with previous reporting year

Select from:

Higher

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

Facility expansion

(9.2.7.5) Please explain

Fresh surface water withdrawals made up 53% of our 2023 water withdrawals across the enterprise. Surface water withdrawal was slightly higher in 2023 compared to 138,500 megaliters withdrawn in 2022. When comparing current data to prior year, we use a 5% change criteria. A change greater than 5% change is considered “higher” and a change less than 5% is lower. A much higher change would be a change +/- 10% from the prior year. In this case the amount is over the 5% threshold. The variation between years can be primarily attributed to the startup of a new POTBA unit at our Channelview site. We anticipate future withdrawals from fresh surface water to be about the same as current year withdrawals.

Brackish surface water/Seawater

(9.2.7.1) Relevance

Select from:

Relevant

(9.2.7.2) Volume (megaliters/year)

300

(9.2.7.3) Comparison with previous reporting year

Select from:

Much lower

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

Facility closure

(9.2.7.5) Please explain

Brackish surface and sea water made up

Groundwater – renewable

(9.2.7.1) Relevance

Select from:

Relevant

(9.2.7.2) Volume (megaliters/year)

22800

(9.2.7.3) Comparison with previous reporting year

Select from:

About the same

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.7.5) Please explain

Renewable groundwater withdrawals made up 8% of our 2023 water withdrawals. Renewable groundwater withdrawals in 2023 were about the same as the 2022 total renewable groundwater withdrawal of 23,200 megaliters. For this parameter, like others, LYB applies a 5% variance as an approximate threshold for higher or lower selections. The minor variation between years can be attributed to normal fluctuations in global production. We anticipate future withdrawals to be about the same as current year.

Groundwater – non-renewable

(9.2.7.1) Relevance

Select from:

Not relevant

(9.2.7.5) Please explain

We did not identify any of its existing groundwater withdrawals as non-renewable. Reviews of the classification of groundwater sources were completed by local site, environmental specialists for applicable sites, and in some cases, included inquiry with local authorities. We do not anticipate future changes to this initial assessment.

Produced/Entrained water

(9.2.7.1) Relevance

Select from:

Relevant

(9.2.7.2) Volume (megaliters/year)

100

(9.2.7.3) Comparison with previous reporting year

Select from:

Much lower

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.7.5) Please explain

2023 produced water withdrawals were about 33% lower than the 2022 total produced water withdrawal of 200, primarily due to a temporary idling of our Maasvlakte site. For this parameter, LYB applies a 5% variance as an approximate threshold for higher or lower selections. A much higher change would be a change +/- 10% from the prior year. We anticipate future withdrawals to be about the same as 2022. We report produced water withdrawals at two sites. Reviews of the classification of sources as produced/entrained water were completed by local site Environmental specialists and entries for this category will be reviewed for alignment in future data request cycles.

Third party sources

(9.2.7.1) Relevance

Select from:

Relevant

(9.2.7.2) Volume (megaliters/year)

106700

(9.2.7.3) Comparison with previous reporting year

Select from:

About the same

(9.2.7.4) Primary reason for comparison with previous reporting year

Select from:

- Increase/decrease in business activity

(9.2.7.5) Please explain

We received about the same amount of water from third party sources in 2023 as in 2022 (109,000 megaliters in 2022, based on adjusted reporting). For this parameter LYB applies 5% as an approximate threshold for higher or lower selections. The variation between years can be attributed to normal fluctuations in global production. This category of CDP-Water withdrawal by third party source includes water categorized as "Other Water" in our 2023 Sustainability Report, since waters in the "Other Water" category also originate from third party sources. All third-party sources data include a reclassification adjustment from the volume reported in the prior CDP-Water questionnaire, as previous data reported in the brackish/seawater category was corrected to third-party withdrawals.

[Fixed row]

(9.2.8) Provide total water discharge data by destination.

Fresh surface water

(9.2.8.1) Relevance

Select from:

- Relevant

(9.2.8.2) Volume (megaliters/year)

37800

(9.2.8.3) Comparison with previous reporting year

Select from:

- About the same

(9.2.8.4) Primary reason for comparison with previous reporting year

Select from:

- Increase/decrease in business activity

(9.2.8.5) Please explain

Fresh surface water discharge makes up about 23% of our total water discharge across the enterprise. LyondellBasell discharged about the same amount to freshwater surfaces in 2023 as compared to prior years. 2022 discharge was about the same (38,000 megaliters). For this parameter LYB applies 5% as an approximate threshold for higher or lower selections. The slight variation between years can be attributed to normal fluctuations in production. We anticipate future discharges to fresh surface water at the enterprise level to be about the same as current year discharges. We exclude rainwater from our industrial wastewater discharge volumes where reasonably possible.

Brackish surface water/seawater

(9.2.8.1) Relevance

Select from:

- Relevant

(9.2.8.2) Volume (megaliters/year)

9900

(9.2.8.3) Comparison with previous reporting year

Select from:

- Lower

(9.2.8.4) Primary reason for comparison with previous reporting year

Select from:

- Facility closure

(9.2.8.5) Please explain

LyondellBasell discharged lower seawater sources in 2023 (compared with 10,600 megaliters in 2022). For this parameter LYB applies 5% as an approximate threshold for higher or lower selections. The variation between years can be attributed to the a divestment of one of our sites, which had no operations in 2023 and thus reduced our discharges in this category. We anticipate future discharges to be about the same as current year discharges. All brackish/seawater intake data includes a reclassification adjustment from the volume reported in the prior CDP-Water questionnaire, as previous data reported in this category was corrected to third-party discharges.

Groundwater

(9.2.8.1) Relevance

Select from:

Relevant

(9.2.8.2) Volume (megaliters/year)

100

(9.2.8.3) Comparison with previous reporting year

Select from:

About the same

(9.2.8.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.8.5) Please explain

LyondellBasell water volume discharged to groundwater in 2023 was about the same as 2022 (100 megaliters). For this parameter LYB applies 5% as an approximate threshold for higher or lower selections. The variation between years can be attributed to normal fluctuations in production. We anticipate future discharges to groundwater to be about the same as current year discharges.

Third-party destinations

(9.2.8.1) Relevance

Select from:

Relevant

(9.2.8.2) Volume (megaliters/year)

115800

(9.2.8.3) Comparison with previous reporting year

Select from:

About the same

(9.2.8.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.8.5) Please explain

LyondellBasell discharged about the same amount of water to third-party destinations in 2023 compared with 112,500 megaliters in 2022. For this parameter LYB applies 5% as an approximate threshold for higher or lower selections. We anticipate future discharges at the enterprise level to be about the same as current year discharges. All third-party sources data includes a reclassification adjustment from the volume reported in the prior CDP-Water questionnaire, as previous data reported in the brackish/seawater category was corrected to third-party discharges.

[Fixed row]

(9.2.9) Within your direct operations, indicate the highest level(s) to which you treat your discharge.

Tertiary treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

Relevant

(9.2.9.2) Volume (megaliters/year)

25600

(9.2.9.3) Comparison of treated volume with previous reporting year

Select from:

About the same

(9.2.9.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.9.5) % of your sites/facilities/operations this volume applies to

Select from:

11-20

(9.2.9.6) Please explain

LyondellBasell wastewaters are typically treated via one or more biological, physical, or chemical treatment methods before being discharged, or wastewaters are discharged directly to a publicly-owned treatment works (POTW) facility for treatment. Our sites follow our Operational Excellence standards including requirements to appropriately select and modify water treatment methods). Sites also comply with applicable local regulatory requirements regarding water discharge, and apply the level of treatment necessary to reliably meet effluent discharge requirements. Tertiary treatment is needed for our more complex operating sites, due to the variety

and complexity of their wastewater discharges. The rationale for selecting the tertiary level of treatment is typically to provide for further, more efficient, organic and solids removals, including for pollutants impacting BOD and TSS (as identified in CDP question 2.5.1), to provide for removal of nutrients and/or toxic materials, or as required by the local authority based on wastewater characteristics. Sites track and monitor treatment systems and maintain treatment effectiveness records as necessary. Testing and monitoring methods and frequencies are based on local requirements and permit conditions that are in turn based on the characteristics of the wastewater and the receiving water body. Volumes from the previous year are about the same as this reporting year. For this parameter LYB considers a 10% threshold for higher or lower selections and 25% for much higher or much lower. The minor variation between years can be attributed to normal fluctuations in production, thus the comparison is most relevant to increases or decreases in business activity. We anticipate future treatment to be about the same as current year treatment.

Secondary treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

Relevant

(9.2.9.2) Volume (megaliters/year)

36700

(9.2.9.3) Comparison of treated volume with previous reporting year

Select from:

About the same

(9.2.9.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.9.5) % of your sites/facilities/operations this volume applies to

Select from:

11-20

(9.2.9.6) Please explain

LyondellBasell wastewaters are typically treated via one or more biological, physical, or chemical treatment methods before being discharged, or wastewaters are discharged directly to a publicly-owned treatment works (POTW) facility for treatment. LyondellBasell sites comply with our Operational Excellence standards including requirements to appropriately select and modify water treatment methods. Sites also comply with applicable local regulatory requirements regarding water discharge, and apply the level of treatment necessary to reliably meet effluent discharge requirements. Secondary treatment is needed for our moderately complex operating sites. The rationale for selecting the secondary level of treatment is typically to provide for organics removals and/or toxic materials, or is required by the local authority based on stream characteristics. Sites track and monitor treatment systems and maintain treatment effectiveness records as necessary based on local requirements and permit conditions that are in turn based on the characteristics of the wastewater and the receiving water body. Volumes from the previous year are about the same as this reporting year. For this parameter LYB considers a 10% threshold for higher or lower selections and 25% for much higher or much lower. The variation between years can be attributed to normal fluctuations in production, thus the comparison is most relevant to increases or decreases in business activity. We anticipate future treatment to be about the same as current year treatment.

Primary treatment only

(9.2.9.1) Relevance of treatment level to discharge

Select from:

Relevant

(9.2.9.2) Volume (megaliters/year)

2800

(9.2.9.3) Comparison of treated volume with previous reporting year

Select from:

About the same

(9.2.9.4) Primary reason for comparison with previous reporting year

Select from:

Increase/decrease in business activity

(9.2.9.5) % of your sites/facilities/operations this volume applies to

Select from:

11-20

(9.2.9.6) Please explain

LyondellBasell wastewaters are typically treated via one or more biological, physical, or chemical treatment methods before being discharged, or wastewaters are discharged directly to a publicly-owned treatment works (POTW) facility for treatment. Water treatment at a primary level is typically applied to simple wastewater streams. Primary treatment is needed for our less complex operating sites, due to the relative simplicity of their wastewater discharges, including low or absent organics content. The rationale for selecting the primary level of treatment is typically to provide for solids removal, or is required by the local authority based on stream characteristics. LyondellBasell sites comply with our Operational Excellence standards including requirements to appropriately select and modify water treatment methods. Sites also comply with applicable local regulatory requirements regarding water discharge, and apply the level of treatment necessary to reliably meet effluent discharge requirements. Sites track and monitor treatment systems and maintain treatment effectiveness records as necessary based on local requirements and permit conditions that are in turn based on the characteristics of the wastewater and the receiving water body. Volumes from the previous year are about the same as this reporting year. For this parameter LYB considers a 10% threshold for higher or lower selections and 25% for much higher or much lower. The variation between years can be attributed to normal fluctuations in production, thus the comparison is most relevant to increases or decreases in business activity. We anticipate future treatment to be about the same as current year treatment.

Discharge to the natural environment without treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

Relevant

(9.2.9.2) Volume (megaliters/year)

0

(9.2.9.3) Comparison of treated volume with previous reporting year

Select from:

Lower

(9.2.9.4) Primary reason for comparison with previous reporting year

Select from:

- Other, please specify :Solidification of classification methodology

(9.2.9.5) % of your sites/facilities/operations this volume applies to

Select from:

- Less than 1%

(9.2.9.6) Please explain

LyondellBasell wastewaters are typically treated via one or more biological, physical, or chemical treatment methods before being discharged, or wastewaters are discharged directly to a publicly-owned treatment works (POTW) facility for treatment. Water that is used for cooling but does not come into contact with production activity may not require treatment prior to discharge. There was no volume of this type of discharge reported by our sites this cycle. For this parameter, we selected lower since prior year volume was not zero, but was close to zero. Between 2022 and 2023, we have solidified our classification methodology across all sites and country-specific definitions to our sites report that no water is discharged before treatment, either by LYB operated treatment, or via treatment by third party.

Discharge to a third party without treatment

(9.2.9.1) Relevance of treatment level to discharge

Select from:

- Relevant

(9.2.9.2) Volume (megaliters/year)

98500

(9.2.9.3) Comparison of treated volume with previous reporting year

Select from:

- About the same

(9.2.9.4) Primary reason for comparison with previous reporting year

Select from:

- Increase/decrease in business activity

(9.2.9.5) % of your sites/facilities/operations this volume applies to

Select from:

- 61-70

(9.2.9.6) Please explain

LyondellBasell wastewaters are typically treated via one or more biological, physical, or chemical treatment methods before being discharged, or wastewaters are discharged directly to a publicly-owned treatment works (POTW) facility for treatment. Some of our sites direct wastewater to a third party for treatment. Third party treatment facilities are obligated to meet local regulatory requirements regarding water treatment and discharge. Treatment by the third party includes the level required by those local requirements, often to a tertiary level of treatment. Sites track and monitor wastewater as obligated by the third party and maintain compliance records based on local requirements. LyondellBasell- sites comply with our Operational Excellence standards including requirements to appropriately select and modify water treatment methods. Sites also comply with applicable local regulatory requirements regarding water discharge, and apply the level of treatment necessary to reliably meet effluent discharge requirements. Sites track and monitor treatment systems and maintain treatment effectiveness records as necessary based on local requirements. Volumes from the previous year are about the same as this reporting year. For this parameter LYB considers a 10% threshold for higher or lower selections and 25% for much higher or much lower. The variation between years can be attributed to normal fluctuations in production, thus the comparison is most relevant to increases or decreases in business activity. We anticipate future treatment to be about the same as current year treatment.

Other

(9.2.9.1) Relevance of treatment level to discharge

Select from:

- Not relevant

(9.2.9.6) Please explain

*LyondellBasell does not have another treatment method to disclose.
[Fixed row]*

(9.2.10) Provide details of your organization’s emissions of nitrates, phosphates, pesticides, and other priority substances to water in the reporting year.

(9.2.10.1) Emissions to water in the reporting year (metric tons)

0

(9.2.10.2) Categories of substances included

Select all that apply

- Nitrates
- Phosphates
- Pesticides

(9.2.10.4) Please explain

This water aspect is relevant to our operations. At the enterprise level, we collect information on parameters monitored, including for nitrates, phosphates, and pesticides, by site. Our sites comply with local regulatory requirements regarding discharges, and apply the level of monitoring and treatment necessary to reliably meet those requirements. Potential pollutants are identified and evaluated at the site level. We have begun assessing site emission data related to nitrates, phosphates, and pesticides, as well as other priority substances at the enterprise level.

[Fixed row]

(9.3) In your direct operations and upstream value chain, what is the number of facilities where you have identified substantive water-related dependencies, impacts, risks, and opportunities?

Direct operations

(9.3.1) Identification of facilities in the value chain stage

Select from:

- No, we have assessed this value chain stage but did not identify any facilities with water-related dependencies, impacts, risks, and opportunities

(9.3.4) Please explain

In 2020, we conducted a baseline water risk assessment of our manufacturing sites using the World Resources Institute (WRI) Aqueduct Water Risk Atlas tool. We refreshed our baseline water risk assessments in 2023, using the World Resources Institute Aqueduct TM Tool (Aqueduct TM), version 3.0. Aqueduct TM which rates geographic locations worldwide on a scale from low to extremely high overall water risk based on watershed data related to water quantity stress, quality and regional factors. We do not consider the 8 sites identified to have substantive impact since these sites located in extremely high or high water risk areas of the world comprised less than 0.06% of our estimated total water consumption. In 2022, we engaged a third party expert to complete a water use and risk assessment as a supplement to the Aqueduct assessment. The assessment focused on our large sites encompassing over 98% of our global water consumption, based on 2022 volumes. None of these sites were identified as high or extremely high overall risk in the Aqueduct assessment. We committed to completing water risk management plans at our large sites and facilities in high water risk areas no later than 2030. We will prioritize completing the site-specific plans for high water risk sites and preparing the plans in a sequenced way to allow learnings to be applied for subsequent plans, and incorporates the results of the 2022 assessment. We also will evolve our water-related risk management processes in the next two years for use in the creation of the prioritized and sequenced site-specific plans. Additionally, we signed the UN CEO Water Mandate, which commits us to continuous improvement in water stewardship.

Upstream value chain

(9.3.1) Identification of facilities in the value chain stage

Select from:

No, we have not assessed this value chain stage for facilities with water-related dependencies, impacts, risks, and opportunities, and are not planning to do so in the next 2 years

(9.3.4) Please explain

We utilize EcoVadis assessments and Together for Sustainability (TfS) audits to gain insights into our suppliers' sustainability performance. These sustainability assessments play a pivotal role in identifying potential risks and opportunities, driving ongoing sustainability enhancements and facilitating open and constructive dialogue with our suppliers to improve their sustainability practices. We completed a supplier sustainability risk mapping project in 2023 following an initial application of risk criteria the prior year. We leveraged the EcoVadis IQ platform to gain a view of risks in the areas of environment, social standards and ethics. Based on the risk mapping, we request certain suppliers to complete an EcoVadis sustainability assessment or a TfS audit. If the assessment or audit identifies a need to improve, we may request that the supplier implements corrective actions. We included as part of a new questionnaire to key feedstock suppliers questions to assess their water and biodiversity management ambitions and commitments. We will use their answers along with their EcoVadis water and biodiversity-related responses to assess their progress and further engage on topics such as facility-specific dependencies, impacts, and risks, to encourage and influence continuous improvement.
[Fixed row]

(9.5) Provide a figure for your organization's total water withdrawal efficiency.

(9.5.1) Revenue (currency)

41107000000

(9.5.2) Total water withdrawal efficiency

147336.92

(9.5.3) Anticipated forward trend

Our 2023 water withdrawal efficiency calculation was 13% lower in 2023 than in 2022. We anticipate future water withdrawal efficiency calculations to be within a similar range.

[Fixed row]

(9.6.1) For your top five products by production weight/volume, provide the following water intensity information associated with your activities in the chemical sector.

Row 1

(9.6.1.1) Product type

Bulk organic chemicals

Aromatics

(9.6.1.2) Product name

Included within enterprise calculation are the top 5 products.

(9.6.1.3) Water intensity value (m3/denominator)

2.74

(9.6.1.4) Numerator: water aspect

Select from:

Total water consumption

(9.6.1.5) Denominator

Select from:

Ton

(9.6.1.6) Comparison with previous reporting year

Select from:

About the same

(9.6.1.7) Please explain

We provide a response to this question using the total enterprise water consumption divided by the total tons of products produced, and select Aromatics as one of our most produced product type. The intensity is about the same as the 2022 cycle intensity (2.78 m3/mt), with the minor differences attributed to normal fluctuations in production. We expect future intensities to be about the same. We are undertaking life cycle assessment (LCA) studies for our product portfolio. Our LCAs are conducted according to ISO 14040/44. They undergo a critical review with an independent expert reviewer or a panel of experts (ISO/TS 14071), using recognized tools and databases, aligning with Together for Sustainability (TfS). The LCAs will be used to support customer information needs on the sustainability attributes of our products and technologies, including water use/intensity. We are collaborating to support the harmonization of product life cycle metrics and their application (e.g., ISO 14040/44, Product Environmental Footprint, GHG Protocol Product Standard) and share best practices within the chemical industry. Examples are our participation in TfS and the World Business Council for Sustainable Development (WBCSD) Partnership for Carbon Transparency (PACT) pathfinder framework project. We will continue to expand our capability to deliver life cycle metrics information in 2024 to support our customer information needs and sustainability ambitions, and further enhance the value proposition of sustainable solutions offerings. Water reuse is integral to our operations. We recycle our supply of water, when possible, to limit the amount we draw from regional supplies. We track the number of cooling water cycles, representing the number of times water is reused in these systems, at our large sites. It is expected this water intensity to remain similar next year.

[Add row]

(9.13) Do any of your products contain substances classified as hazardous by a regulatory authority?

	Products contain hazardous substances
	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(9.13.1) What percentage of your company's revenue is associated with products containing substances classified as hazardous by a regulatory authority?

(9.13.1.1) Regulatory classification of hazardous substances

Select from:

Annex XVII of EU REACH Regulation

(9.13.1.2) % of revenue associated with products containing substances in this list

Select from:

Less than 10%

(9.13.1.3) Please explain

In 2023, less than 2% of our revenue was generated from products containing substances in the scope of REACH Annex XVII restriction conditions. Similarly in 2023, less than 0.1% of our total number of products and representing less than 3% of revenue, contained substances in the candidate list of SVHC for authorization above 0.1wt%. Further, we note that these products were placed on the market almost exclusively (99.9 by revenue) for monomer or intermediate uses. In such industrial use settings, involving suitably qualified and trained individuals, exposure risk and use is rigorously controlled, for example via technical means and appropriate personal protective equipment as part of the operator's health and safety compliance obligations.

[Add row]

(9.14) Do you classify any of your current products and/or services as low water impact?

(9.14.1) Products and/or services classified as low water impact

Select from:

- No, and we do not plan to address this within the next two years

(9.14.3) Primary reason for not classifying any of your current products and/or services as low water impact

Select from:

- Judged to be unimportant, explanation provided

(9.14.4) Please explain

While we are undertaking life cycle assessment studies to support customer information needs on the sustainability attributes of our products and technologies, we do not classify low water impact as a primary sustainability driver for our products.

[Fixed row]

(9.15.1) Indicate whether you have targets relating to water pollution, water withdrawals, WASH, or other water-related categories.

Water pollution

(9.15.1.1) Target set in this category

Select from:

- Yes

Water withdrawals

(9.15.1.1) Target set in this category

- No, but we plan to within the next two years

(9.15.1.2) Please explain

We committed to completing water risk management plans at our large sites and facilities in high-risk areas by 2030. We will prioritize high-risk sites and sequence plans to apply learnings for subsequent plans. We plan to evolve our water-related risk management processes in the next two years for the creation of these plans. Sites in high water stress areas will consider water withdrawal and consumption, including reduction targets. Additionally, we signed the UN CEO Water Mandate, committing to continuous improvement in water stewardship. We track site-level instances of reductions in water use at the enterprise level, including at our sites in extremely high-risk regions, as part of water stewardship. For example, at our Vadodara India site, a resource conservation team meets regularly to identify resource savings. In 2023, the team implemented a project to combine the facility's water into a single system, expected to reduce water consumption and chemical treatment quantities.

Water, Sanitation, and Hygiene (WASH) services

(9.15.1.1) Target set in this category

Select from:

Yes

Other

(9.15.1.1) Target set in this category

Select from:

Yes

[Fixed row]

(9.15.2) Provide details of your water-related targets and the progress made.

Row 1

(9.15.2.1) Target reference number

Select from:

Target 1

(9.15.2.2) Target coverage

Select from:

Organization-wide (direct operations only)

(9.15.2.3) Category of target & Quantitative metric

Water pollution

Other water pollution, please specify :Zero instances of environmental incidents. An environmental incident includes instances of water pollution excursions related to water discharges and water quality.

(9.15.2.4) Date target was set

12/31/2022

(9.15.2.5) End date of base year

12/30/2022

(9.15.2.6) Base year figure

23

(9.15.2.7) End date of target year

12/30/2023

(9.15.2.8) Target year figure

0

(9.15.2.9) Reporting year figure

19

(9.15.2.10) Target status in reporting year

Select from:

Underway

(9.15.2.11) % of target achieved relative to base year

17

(9.15.2.12) Global environmental treaties/initiatives/ frameworks aligned with or supported by this target

Select all that apply

Other, please specify :UN CEO Water Mandate

(9.15.2.13) Explain target coverage and identify any exclusions

We classify environmental incidents on a scale from 0 to 5, with Level 5 having the highest impact. We report Level 2 environmental incidents, indicating a failure to meet a policy, standard, or applicable law due to an unplanned release or discharge into the environment. Any releases that cannot be immediately mitigated are managed with support from HSE professionals who direct the mitigation efforts, monitor conditions, and interact with appropriate local authorities. We also develop action plans and share learnings throughout the organization to prevent future incidents.

(9.15.2.14) Plan for achieving target, and progress made to the end of the reporting year

Although we work hard to ensure compliance, sometimes incidents can occur. Our emphasis on reliability and process safety improvements will positively impact our environmental compliance performance as will our commitment to environmental performance improvement.

(9.15.2.16) Further details of target

Although we work hard to ensure compliance, sometimes incidents can occur. Our emphasis on reliability and process safety improvements will positively impact our environmental compliance performance as will our commitment to environmental performance improvement.

Row 2

(9.15.2.1) Target reference number

Select from:

Target 2

(9.15.2.2) Target coverage

Select from:

Organization-wide (direct operations only)

(9.15.2.3) Category of target & Quantitative metric

Water recycling/reuse

Other water recycling/reuse, please specify :Number of cooling water cycles

(9.15.2.4) Date target was set

12/31/2022

(9.15.2.5) End date of base year

12/30/2022

(9.15.2.6) Base year figure

3

(9.15.2.7) End date of target year

12/30/2023

(9.15.2.8) Target year figure

3

(9.15.2.9) Reporting year figure

3

(9.15.2.10) Target status in reporting year

Select from:

Achieved

(9.15.2.12) Global environmental treaties/initiatives/ frameworks aligned with or supported by this target

Select all that apply

Other, please specify :UN CEO Water Mandate

(9.15.2.13) Explain target coverage and identify any exclusions

We track the number of cooling water cycles, representing the number of times water is reused in these systems, at our large sites. We target a minimum of 3 cycles for these systems.

(9.15.2.15) Actions which contributed most to achieving or maintaining this target

Support and emphasis from utilities managers at site and enterprise level.

(9.15.2.16) Further details of target

In 2023, we achieved our water use efficiency target at the relevant sites where we track cooling tower system cycles. This target is set for reliability and cost efficiency; however, it does impact the efficient use of water.

Row 3

(9.15.2.1) Target reference number

Select from:

Target 3

(9.15.2.2) Target coverage

Select from:

Organization-wide (direct operations only)

(9.15.2.3) Category of target & Quantitative metric

Water use efficiency

Other water use efficiency, please specify :Water quality parameters, rolling average at enterprise is always above 90% of specifications

(9.15.2.4) Date target was set

12/31/2022

(9.15.2.5) End date of base year

12/30/2022

(9.15.2.6) Base year figure

100

(9.15.2.7) End date of target year

12/30/2023

(9.15.2.8) Target year figure

100

(9.15.2.9) Reporting year figure

100

(9.15.2.10) Target status in reporting year

Select from:

Achieved

(9.15.2.12) Global environmental treaties/initiatives/ frameworks aligned with or supported by this target

Select all that apply

Other, please specify :UN CEO Water Mandate

(9.15.2.13) Explain target coverage and identify any exclusions

We monitor specific water quality targets for cooling water and steam generation, and track and report at the enterprise level on these parameters using our Global Water Quality Dashboard (GWQD). We calculate rolling averages at the enterprise level for the included water quality parameters and target maintaining that average above 90%. While this tool was developed for reliability and efficiency purposes, it also enables us to track quality parameters for appropriate water use in these systems. We apply this target to cooling towers at major operating sites, not to our APS operations cooling towers.

(9.15.2.15) Actions which contributed most to achieving or maintaining this target

Support and emphasis from utilities managers at site and enterprise level.

(9.15.2.16) Further details of target

In 2023 we achieved the related target for water use efficiency since rolling averages at the enterprise level for the included water quality parameters maintained an average above 90%.

Row 4

(9.15.2.1) Target reference number

Select from:

Target 4

(9.15.2.2) Target coverage

Select from:

Organization-wide (direct operations only)

(9.15.2.3) Category of target & Quantitative metric

Water, Sanitation, and Hygiene (WASH) services

Other WASH, please specify :% of our sites confirming water is safe for intended use

(9.15.2.4) Date target was set

12/31/2022

(9.15.2.5) End date of base year

12/30/2022

(9.15.2.6) Base year figure

100

(9.15.2.7) End date of target year

12/30/2023

(9.15.2.8) Target year figure

100

(9.15.2.9) Reporting year figure

100

(9.15.2.10) Target status in reporting year

Select from:

Achieved

(9.15.2.12) Global environmental treaties/initiatives/ frameworks aligned with or supported by this target

Select all that apply

Other, please specify :UN CEO Water Mandate

(9.15.2.13) Explain target coverage and identify any exclusions

We confirm water supplies delivered from municipalities or other third-party suppliers are monitored for quality before distribution to our sites. We require sites to confirm annually that appropriate monitoring is being conducted in order to ensure these water supplies are acceptable for use.

(9.15.2.15) Actions which contributed most to achieving or maintaining this target

Support and emphasis from utilities managers at site and enterprise level.

(9.15.2.16) Further details of target

In 2023 we achieved the related target since 100% of our sites confirmed water is safe for intended use.

[Add row]

C10. Environmental performance - Plastics

(10.1) Do you have plastics-related targets, and if so what type?

(10.1.1) Targets in place

Select from:

Yes

(10.1.2) Target type and metric

Plastic polymers

Other plastic polymers target, please specify :Produce and market at least 2 million metric tons of recycled and renewable-based polymers annually by 2030. Zero loss of plastic pellets to the environment from our operations.

(10.1.3) Please explain

We recognize the pressing need to eliminate plastic waste in the environment and the imperative of transitioning toward a circular economy for plastic. The evolving global landscape, including societal aspirations, consumer awareness and new regulations, is driving circularity commitments and spurring demand for recycled content. Circular solutions are needed to keep valuable materials circulating in the economy through recycling and reuse. Circularity is critical to helping end plastic waste, and it offers strong economic, social and climate benefits. We launched our circular and low carbon (CLCS) business to support our ambition to produce and market at least 2 million metric tons of recycled and renewable-based polymers annually by 2030. For the purposes of our goal, production and marketing includes: (i) joint venture production marketed by LYB plus our pro rata share of the remaining production produced and marketed by the joint venture, and (ii) production via third-party tolling arrangements. Our Circulen portfolio of products supports the reduction of plastic waste through the use of recycled materials as a feedstock. As global demand for recycled and renewable-based plastics continues to grow, in 2023, our CLCS business made significant progress investing upstream to secure plastic waste material to deliver on this ambition. The investments are focused on securing feedstock supply, expanding our recycling footprint and developing scalable technologies to grow our Circulen portfolio of products globally and across our business segments. Additionally, Our goal is: zero loss of plastic pellets to the environment from our operations. We sell polymer products in the form of pellets, flakes and powders, which are handled at multiple points from creation to customer delivery. As of December 31, 2023, we had 77 polymer manufacturing, research and technical sites that produce or handle polymers. We are a member of Operation Clean Sweep (OCS), the plastics industry's global initiative to promote collaboration, training, and education in controlling and reducing the loss of pellets, flakes and powders. We also committed to OCS Blue, an elevated level of commitment that enhances the management, measurement and reporting requirements for pellet loss into the environment. We monitor and report pellet loss in accordance with American Chemistry Council (ACC) guidance. For purposes of our reporting, loss is defined as an unplanned release of polymeric solids from a site boundary in a quantity greater than 0.5 kilograms (equivalent to 1.1 pounds) in a single incident. In

2023, approximately 10 kilograms of polymeric solids was lost offsite. We clean spills, conduct investigations, and implement corrective actions to prevent similar incidents in the future. We conduct annual assessments of our operations to evaluate and improve pellet loss efforts, including monitoring, handling, recycling, safe disposal, cleaning and containment. We also have tools to identify opportunities to prevent pellet loss and emphasize educating and empowering our employees in their continuing support of this effort. In 2023, our facilities began participating in external OCS audits to increase transparency and strengthen our program. These audits were developed through regional trade associations with the strong support of LYB. In each external assessment, independent auditors verify that we meet specific requirements to prevent pellet loss in our facilities and along the plastics value chain. In 2023, our Tarragona site in Spain was the first facility in the world to be certified under this new external OCS audit program.

[Fixed row]

(10.2) Indicate whether your organization engages in the following activities.

Production/commercialization of plastic polymers (including plastic converters)

(10.2.1) Activity applies

Select from:

Yes

(10.2.2) Comment

We produce polypropylene, polyethylene, and compounds from fossil, recycled and renewable-based sources. We have other operations that could be considered engaging in activities associated with the other categories in this table.

Production/commercialization of durable plastic goods and/or components (including mixed materials)

(10.2.1) Activity applies

Select from:

No

(10.2.2) Comment

We produce polypropylene, polyethylene, and compounds from fossil, recycled and renewable-based sources. We have other operations that could be considered engaging in activities associated with the other categories in this table.

Usage of durable plastics goods and/or components (including mixed materials)

(10.2.1) Activity applies

Select from:

No

(10.2.2) Comment

We produce polypropylene, polyethylene, and compounds from fossil, recycled and renewable-based sources. We have other operations that could be considered engaging in activities associated with the other categories in this table.

Production/commercialization of plastic packaging

(10.2.1) Activity applies

Select from:

No

(10.2.2) Comment

We produce polypropylene, polyethylene, and compounds from fossil, recycled and renewable-based sources. We have other operations that could be considered engaging in activities associated with the other categories in this table.

Production/commercialization of goods/products packaged in plastics

(10.2.1) Activity applies

Yes

(10.2.2) Comment

We produce polypropylene, polyethylene, and compounds from fossil, recycled and renewable-based sources. We have other operations that could be considered engaging in activities associated with the other categories in this table.

Provision/commercialization of services that use plastic packaging (e.g., food services)

(10.2.1) Activity applies

Select from:

No

(10.2.2) Comment

We do not engage in this activity.

Provision of waste management and/or water management services

(10.2.1) Activity applies

Select from:

No

(10.2.2) Comment

We do not engage in this activity.

Provision of financial products and/or services for plastics-related activities

(10.2.1) Activity applies

Select from:

No

(10.2.2) Comment

We do not engage in this activity.

Other activities not specified

(10.2.1) Activity applies

Select from:

No

[Fixed row]

(10.3) Provide the total weight of plastic polymers sold and indicate the raw material content.

(10.3.7) Please explain

In 2022, we took steps to increase our plastics recycling capacity to tackle the challenge of plastic waste and make progress on our goal to produce and market at least 2 million metric tons (MMT) of polymers from recycled or renewable-based sources annually by 2030. Since 2019 through the end of 2023, we have produced and marketed more than 280.000 metric tons of these polymers.

[Fixed row]

C11. Environmental performance - Biodiversity

(11.2) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

(11.2.1) Actions taken in the reporting period to progress your biodiversity-related commitments

Select from:

- Yes, we are taking actions to progress our biodiversity-related commitments

(11.2.2) Type of action taken to progress biodiversity- related commitments

Select all that apply

- Land/water protection
- Land/water management
- Education & awareness

[Fixed row]

(11.4) Does your organization have activities located in or near to areas important for biodiversity in the reporting year?

	Indicate whether any of your organization's activities are located in or near to this type of area important for biodiversity
Legally protected areas	Select from: <input checked="" type="checkbox"/> Yes (partial assessment)
Key Biodiversity Areas	Select from: <input checked="" type="checkbox"/> Yes (partial assessment)

C13. Further information & sign off

(13.1) Indicate if any environmental information included in your CDP response (not already reported in 7.9.1/2/3, 8.9.1/2/3/4, and 9.3.2) is verified and/or assured by a third party?

	Other environmental information included in your CDP response is verified and/or assured by a third party
	Select from: <input checked="" type="checkbox"/> Yes

[Fixed row]

(13.1.1) Which data points within your CDP response are verified and/or assured by a third party, and which standards were used?

Row 1

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change

Other data point in module 7, please specify :Energy consumption, GHG emissions (scopes 1 and 2)

(13.1.1.3) Verification/assurance standard

General standards

- Attestation Standards (AT-C Section 105 & 210/205) established by the American Institute of Certified Public Accountants (AICPA)

(13.1.1.4) Further details of the third-party verification/assurance process

We publish our energy consumption and GHG emissions data as part of our annual sustainability report. In 2023, PwC performed a limited assurance of our energy consumption as well as GHG emissions (scope 1 & 2). The review was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA) in AT-C section 105, Concepts Common to All Attestation Engagements, and AT-C section 210, Review Engagements. The Report of Independent Accounts can be found on page 101 of our 2023 Sustainability Report, followed by Management Assertion on pages 102-107.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

2023 Sustainability Report - LYB.pdf

Row 2

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

- Water

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Water security

- Water consumption– total volume
- Water discharges– total volumes
- Water withdrawals– total volumes

(13.1.1.3) Verification/assurance standard

General standards

- ISAE 3000

(13.1.1.4) Further details of the third-party verification/assurance process

We engaged ERM Certification & Verification Services Incorporated (“ERM CVS”) to provide limited assurance in relation to the 2023 Total Water Intake, Total Water Discharge, and Total Water Consumption volumes included in this CDP response. ERM CVS performed a limited assurance engagement, in accordance with the International Standard on Assurance Engagements ISAE 3000 (Revised) ‘Assurance Engagements other than Audits or Reviews of Historical Financial Information’ issued by the International Auditing and Standards Board. The ERM CVS assurance engagement does not extend to information in respect of earlier periods or to any other information included in the Questionnaire. Based on ERM CVS activities, nothing has come to their attention to indicate that the 2023 water data covered are not fairly presented in the Questionnaire, in all material respects, in accordance with the reporting criteria. We chose the withdrawal, discharge, and consumption for independent verification since this data forms the core of our current water use. We plan to complete this verification annually.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

ERM CVS – Limited Assurance Report for LyondellBasell.pdf

Row 3

(13.1.1.1) Environmental issue for which data has been verified and/or assured

Select all that apply

- Climate change

(13.1.1.2) Disclosure module and data verified and/or assured

Environmental performance – Climate change

- Other data point in module 7, please specify :Scope 3 emissions – category 6: business travel

(13.1.1.3) Verification/assurance standard

General standards

Attestation Standards (AT-C Section 105 & 210/205) established by the American Institute of Certified Public Accountants (AICPA)

(13.1.1.4) Further details of the third-party verification/assurance process

PwC performed a limited assurance of our Scope 3 emissions – category 6: business travel metric for the year ended December 31, 2023. The review was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants (AICPA) in AT-C section 105, Concepts Common to All Attestation Engagements, and AT-C section 210, Review Engagements. Attached is the Report of Independent Accounts on pages 1-2, followed by the Management Assertion on pages 3-5.

(13.1.1.5) Attach verification/assurance evidence/report (optional)

LYB 2023 Scope 3 Category 6 ESG Limited Assurance Report.pdf

[Add row]

(13.3) Provide the following information for the person that has signed off (approved) your CDP response.

(13.3.1) Job title

Chief Executive Officer (CEO)

(13.3.2) Corresponding job category

Select from:

Chief Executive Officer (CEO)

[Fixed row]