

C0. Introduction

C0.1

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

Corbion is a leading food ingredients and biobased chemicals company. We market our products through a worldwide network of sales offices and distributors, and have a global supply chain with manufacturing facilities in the US, Thailand, Brazil, the Netherlands, and Spain. Our innovation centers are located across the globe and our headquarter is based in the Netherlands

In 2020, Corbion generated annual sales of € 986.5 million and had a workforce of 2,267 FTE. Corbion is listed on Euronext Amsterdam.

At Corbion we distinguish between three lines of business, each with a different set of characteristics: Sustainable Food Solutions, Lactic Acid & Specialties and Incubator. These business units are supported company-wide by globally managed R&D, operations, and business support functions.

C0.2

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

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2020	December 31 2020	No	<Not Applicable>

C0.3

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

- Brazil
- Netherlands
- Spain
- Thailand
- United States of America

C0.4

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

EUR

C0.5

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

Financial control

C-AC0.6/C-FB0.6/C-PF0.6

(C-AC0.6/C-FB0.6/C-PF0.6) Are emissions from agricultural/forestry, processing/manufacturing, distribution activities or emissions from the consumption of your products – whether in your direct operations or in other parts of your value chain – relevant to your current CDP climate change disclosure?

	Relevance
Agriculture/Forestry	Elsewhere in the value chain only [Agriculture/Forestry/processing/manufacturing/Distribution only]
Processing/Manufacturing	Both direct operations and elsewhere in the value chain [Processing/manufacturing/Distribution only]
Distribution	Elsewhere in the value chain only [Agriculture/Forestry/processing/manufacturing/Distribution only]
Consumption	No

C-AC0.6b/C-FB0.6b/C-PF0.6b

(C-AC0.6b/C-FB0.6b/C-PF0.6b) Why are emissions from agricultural/forestry activities undertaken on your own land not relevant to your current CDP climate change disclosure?

Row 1

Primary reason

Do not own/manage land

Please explain

Corbion does not perform agricultural/forestry activities and does not own or manage agricultural land, therefore these emissions are not relevant to our direct operations.

C-AC0.6f/C-FB0.6f/C-PF0.6f

(C-AC0.6f/C-FB0.6f/C-PF0.6f) Why are emissions from distribution activities within your direct operations not relevant to your current CDP climate change disclosure?

Row 1

Primary reason

Evaluated but judged to be unimportant

Please explain

This is not in Corbion's control, as Corbion does not own any vehicles. There are no emissions in direct operations from distribution.

C-AC0.6g/C-FB0.6g/C-PF0.6g

(C-AC0.6g/C-FB0.6g/C-PF0.6g) Why are emissions from the consumption of your products not relevant to your current CDP climate change disclosure?

Row 1

Primary reason

Other, please specify (Outside the scope of our organisation)

Please explain

Corbion's products are intermediates used in many downstream applications, primarily in food but also in pharma, home and personal care, electronics, agrochemicals, feed, etc. They represent a non-material element in the final product (usage level around 1%). Corbion's products do not directly consume energy at customer level.

C-AC0.7/C-FB0.7/C-PF0.7

(C-AC0.7/C-FB0.7/C-PF0.7) Which agricultural commodity(ies) that your organization produces and/or sources are the most significant to your business by revenue? Select up to five.

Agricultural commodity

Sugar

% of revenue dependent on this agricultural commodity

40-60%

Produced or sourced

Sourced

Please explain

The largest percentage of our revenue is related to sugar. Sugar is the main agricultural raw material for lactic acid production in Thailand, Brazil, the Netherlands and Spain. To calculate this figure, we looked at the % of revenues from all products that are derived from sugar from sugar cane or sugar beet (dextrose from maize is reported separately). 49% of our revenue comes from products derived from sugar (from cane and/or beet). A product can be derived from more than one key agricultural commodity, meaning that the cumulative percentages of revenue dependent on any of the four commodities can be higher than 100%.

Agricultural commodity

Soy

% of revenue dependent on this agricultural commodity

20-40%

Produced or sourced

Sourced

Please explain

Soy oil is the main raw agricultural material for the production of emulsifiers in the US. It is also used in the production of our functional blends. To calculate this figure, we looked at the % of revenues from all products that are derived from, contain, or could contain soy. 22% of our revenue comes from products containing soy. A product can contain more than one key agricultural commodity, meaning that the cumulative percentages of revenue dependent on any of the four commodities can be higher than 100%.

Agricultural commodity

Palm Oil

% of revenue dependent on this agricultural commodity

10-20%

Produced or sourced

Sourced

Please explain

We have categorized our products into palm and non-palm derived. Palm oil and palm derivatives are used in the production of our emulsifiers and functional blends. To calculate this figure, we looked at the % of revenues from all products that are derived from, contain, or could contain palm oil or palm oil derivatives. Based on this methodology 14% of our revenue comes from products containing palm oil. A product can be derived from more than one key agricultural commodity, meaning that the cumulative percentages of revenue dependent on any of the four commodities can be higher than 100%.

Agricultural commodity

Other, please specify (Maize)

% of revenue dependent on this agricultural commodity

20-40%

Produced or sourced

Sourced

Please explain

Dextrose obtained from corn (maize) is a raw material for the production of lactic acid in USA. Corn and products containing corn are also used in the production of our emulsifiers and functional blends. To calculate this figure, we looked at the % of revenues from all products that are derived from, contain, or could contain corn or corn derivatives. 33% of our revenue comes from products containing corn. A product can contain more than one key agricultural commodity, meaning that the cumulative percentages of revenue dependent on any of the four commodities can be higher than 100%.

C-CH0.7

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

Row 1

Bulk organic chemicals

Bulk inorganic chemicals

Other chemicals

Specialty chemicals

Specialty organic chemicals

C1. Governance

C1.1

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

Yes

C1.1a

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

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	Under the chairmanship of the Chief Executive Officer, the members of the Executive Committee have the overall responsibility for sustainability and climate-related issues and decide on the strategy and targets. The Executive Committee shares responsibility for developing objectives and the strategy, determining the risk profile, and implementing strategic and operational policies. The Board of Management is entrusted with the management of the company. Since a couple of years, certain key officers have been appointed to manage the company together with the Board of Management. The members of the Board of Management and these key officers together constitute the Executive Committee. The CEO is also head of the Climate Change Steering Committee and decided in 2019 to set a target for Corbion to reduce GHG emissions for energy, key raw material and transport by 33% in 2030 vs 2016. This target was approved by the Science Based Targets initiative. The CEO is given these responsibilities because sustainability is key to Corbion's strategy and therefore responsibilities are integrated in the highest management level.

C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – all meetings	<ul style="list-style-type: none"> Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues 	<Not Applicable>	Annually, there are two formal meetings with the full Executive Committee (ExCo), where sustainability is discussed. All formal ExCo meetings cover climate-related topics. The Climate change steering group meets quarterly. The ExCo members have informal meetings as well, these cover whatever important matters arise, varying from sustainability to risks or profits. The information provided by the ExCo and sustainability manager gives the board oversight on whether objectives are being reached and what the difficulties are in those areas. When deciding on major capital expenditures sustainability criteria are taken into consideration. This provides the board with oversight on the issues they might face and what possibilities there are for improvement or what options there are to improve the (sustainability) performance of Corbion.

C1.2

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

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other C-Suite Officer, please specify (CSSO (Chief Science & Sustainability Officer))	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Environment/ Sustainability manager	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

A description of the responsibilities of each position and/or committee with regard to the assessment and monitoring of climate-related issue

Sustainability falls under the responsibility of the Executive Committee. The Executive Committee consists of the board of management as well as the the CSSO (Chief Science & Sustainability Officer), the Chief Operations Officer, the Chief Human Resources Officer, the President of Sustainable Food Solutions, the President Lactic Acid & Specialties and the President Algae Ingredients. The Executive Committee has the final responsibility on climate-related issues. For monitoring and managing climate-related issues, Corbion has a Steering Committee, consisting of the CEO and the CSSO. The SteerCo oversees the climate related opportunities and risks for Corbion and the implementation of Corbion's CO2 reduction roadmap. The Senior Director Sustainability provides recommendations to the Climate Change steering group (quarterly) and to the Executive Committee (semi-annual), regarding climate related risks and opportunities, business plans, CO2 reduction initiatives including capital investments and R&D, and progress vs targets. The Senior Director Sustainability reports to the CSSO.

A clear rationale for why responsibilities for climate-related issues have been assigned to this/these position(s) or committee(s)

The CEO has these responsibilities because sustainability is key to Corbion's strategy. For Corbion, sustainability and climate change offer opportunities and are a driver for innovation, hence the strong involvement of the CSSO. For instance, realizing the opportunity for Algae based DHA to replace fish oil and thereby improve marine biodiversity, requires knowledge on the technical front of business to see the opportunities. Because Sustainability is at the heart for Corbion's offerings it is logical that all key players within Corbion's management carry responsibility for delivering on sustainability.

C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Since 2020 , both the Short and Long Term Incentive Plan includes Sustainability targets. One of these targets is the progress towards achieving our SBT. See http://www.corbion.com/media/872710/remuneration-policy-corbion-board-of-management-version-18-may-2020.pdf These targets apply to the Board of Management, to our Executive Committee and to all employees entitled to a bonus.

C1.3a

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

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Board/Executive board	Monetary reward	Emissions reduction target Energy reduction target Supply chain engagement	Since 2020 , both the Short and Long Term Incentive Plan includes Sustainability targets. One of these targets is the progress towards achieving our SBT. See http://www.corbion.com/media/872710/remuneration-policy-corbion-board-of-management-version-18-may-2020.pdf
Management group	Monetary reward	Emissions reduction target Energy reduction target Supply chain engagement	All senior managers have a bonus linked to a Short and/or Long Term Incentive Plan. Since 2020 , both the Short and Long Term Incentive Plan includes Sustainability targets. One of these targets is the progress towards achieving our SBT. See http://www.corbion.com/media/872710/remuneration-policy-corbion-board-of-management-version-18-may-2020.pdf
Buyers/purchasers	Monetary reward	Environmental criteria included in purchases Supply chain engagement	Members of the Procurement team involved in the implementation of responsible sourcing (eg RSPO/Bonsucro certification, supplier engagement on SBTs) have personal targets related to these topics, which are evaluated as part of the annual appraisal.

C2. Risks and opportunities

C2.1

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

Yes

C2.1a

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

	From (years)	To (years)	Comment
Short-term	0	1	Corbion's short term operational and financial budget focuses on 0-1 years period.
Medium-term	1	5	Corbion's medium term planning for assets/capital planning and for strategic innovation focuses on 1-5 years.
Long-term	5	15	Corbion's timeframe for long term planning is aligned with the transition to a low carbon economy. Corbion has joined the Science Based Targets initiative and has defined carbon footprint targets in line with the Paris agreement for 2030.

C2.1b

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

A definition of 'substantive financial or strategic impact' when identifying or assessing climate-related risks

Part of the control environment is the definition by the Executive Committee of the risk appetite of the company. Our risk appetite is the amount of risk we are willing to accept to achieve our strategic goals. This requires adequate understanding and awareness of potential risks and their magnitude within the company. The level of risk appetite is set by the Executive Committee. Corbion utilizes a 6 category impact scale for risks. Category 5&6 (major and catastrophic) are considered to be substantive.

A description of the quantifiable indicator(s) used to define substantive financial or strategic impact

As a financial metric, any EBITDA impact >15M euro is considered to be substantial, or (estimated) direct or indirect losses are larger than 50% of the risk appetite or a(n estimated) share price decline of >5%. Our risk appetite for strategic risks can be summarized as follows: innovations, innovation platform initiatives, mergers and acquisitions, joint ventures etc.: balancing risk and rewards to achieve our strategic growth targets. Climate-related risks are part of our risk assessment and assessed in our formal risk identification process.

C2.2

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

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

A description of the process used to determine which risks and/or opportunities could have a substantive financial or strategic impact: Corbion's multi-disciplinary company-wide risk identification process is based on annual workshops with the executive+ committee in order to identify critical risks for all our business activities. As part of this process, interviews are held and a selection of (15) risks are voted on. To provide specific input regarding Climate related risks and opportunities to the company-wide risk identification process, climate workshops are held with the leadership teams (including VP Finance, VP Operations, VP Business Development, Sr Innovation Director, Sr Director Sustainability and CSSO) to review and rate risks and opportunities for relevant future scenarios. In these workshops, the impact and likelihood of potentially relevant risks and opportunities are evaluated. Climate-related opportunities that are aligned with Corbion's ambition are prioritized based on the business case, financial reward, alignment with our capabilities and technical feasibility. A case study of how the described process is applied to Physical risks and/or opportunities: An example of a climate related risk, are extreme weather events which may result in a significant period of plant shutdown or disruption and hence in non-(timely)-delivery of our products to internal and/or external customers, ultimately leading to adverse financial and reputation consequences. Another example is the impact of climate change on the availability of agriculture-derived raw materials such as sugar and soy. This aspect is included in our Security of supply assessment. For high risk raw materials, we investigate the policies of our suppliers and develop alternative suppliers to mitigate the risk. Climate-related risks are managed in the same way as other risks. Corbion has defined a governance model that identifies clear reporting and accountability structures in line with the Dutch Corporate Governance Code. The Executive Committee is responsible for: • identifying and analyzing the risks associated with Corbion's strategy and activities; • establishing the risk appetite, as well as ensuring that mitigating measures are being put in place; • the design, implementation, and operation of Corbion's internal risk management and control systems; and • monitoring the operation of the internal risk management and control systems and assessing the design and effectiveness thereof. The Board of Management discusses the effectiveness of the design and operation of the internal risk management and control systems with the Audit Committee and the Supervisory Board annually. For each significant risk, a risk owner is appointed, who will further determine the impacts of the risk and manage the root causes and mitigation actions. The progress in risk mitigation is discussed on an ongoing basis between business management and Board of Management. Corbion applies the 3-lines-of-defence model for internal controls. The first line (line management) is responsible for the operational effectiveness of the internal control framework. The second line coordinates, advises, and monitors line management regarding their responsibilities for internal control. The third line is internal audit independently reviewing the control framework. A case study of how the described process is applied to Transitional risks and/or opportunities: An example of a climate-related transition risk is the implementation of CO2 taxes e.g. in the Dutch Climate Agreement. This risk is managed by including the impact of carbon pricing (for different carbon prices 50-150 euro/ton) in the sensitivity analysis of business cases for Capital Expenditures and R&D projects. An example of a climate-related transitional opportunity is the application of our core technologies, the fermentation of bio-based acids and Algae oils, to develop new ingredients, biochemicals and bio-plastics to enable the transition to a bio-based economy. Climate-related opportunities are managed using our Innovation stage gate process. If an opportunity is identified, a project is initiated and this project is steered via a stage-gate approach, where the project needs to deliver specific milestones per stage, which are reviewed by a council at the stage-gate, and a go-no-go decision is taken to continue to the next stage, or to recycle or kill the project.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	For compliance related risks, our risk appetite is low, we aim for full compliance with legal and regulatory reporting. Current regulations related to climate-risks are monitored globally, but currently have the most impact in Europe with the EU ETS and Dutch CO2-tax. Although these regulations currently don't pose a significant risk to Corbion they are always included in the assessment.
Emerging regulation	Relevant, always included	Emerging climate-related regulation are always included. In Europe, the benchmarks and reduction targets for the Emission trading system are being reviewed (e.g. Fit for 55 package and CBAM) and in the US the new Biden administration is also putting a lot of effort into fighting the climate crisis. In our risk assessment we evaluate the financial impact of these emerging regulations by for example assuming a global CO2 tax of 50-150 euro/ton.
Technology	Not relevant, included	Technological improvements or innovations that support the transition to a lower-carbon, energy-efficient economic system are not likely to pose a risk for Corbion, and may even be an opportunity, because these technological improvements and innovations can potentially be implemented in our existing facilities and in new facilities as part of our CO2 reduction roadmap.
Legal	Not relevant, included	Corbion's GHG emissions are modest and therefore the risk of climate related litigation claims is not relevant. Corbion does not have any other material climate related emissions.
Market	Relevant, always included	Transition events such as implementation of (local) carbon pricing, changing demand for e.g. meat and biobased plastics, and stakeholder pressure to reduce GHG emissions in line with the 1.5 pathway can cause climate-related shifts in supply and demand for Corbion's products. These events are evaluated in our risk and opportunity assessment.
Reputation	Not relevant, included	Corbion is a leading provider of sustainable ingredient solutions. Corbion's biobased products help our customers to reduce their carbon footprint so reputational impacts are expected to be positive rather than negative.
Acute physical	Relevant, always included	Extreme weather events may result in a significant period of plant shutdown or disruption and hence in non-(timely)-delivery of our products to internal and/or external customers, ultimately leading to adverse financial and reputation consequences. Corbion's multi-disciplinary company-wide risk identification process is based on annual workshops with the executive+ committee in order to identify critical risks for all our business activities. As part of this process, interviews are held and a selection of (15) risks are voted on. For these identified risks, a risk owner is appointed, who further determines the impacts of the risk and manage the root causes and mitigation actions. The progress in risk mitigation is discussed on an ongoing basis between business management and board of management. Using scenario analysis we also monitor the likelihoods of potential acute physical risk events at our sites and in our supply chain.
Chronic physical	Relevant, always included	Chronic shifts in climate patterns may impact the availability of agriculture-derived raw materials. This aspect is included in our Security of supply assessment. For high risk raw materials, we investigate the policies of our suppliers and develop alternative suppliers to mitigate the risk. In our scenario analyses we always include potential chronic physical risk to our supply chain and operations.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation	Carbon pricing mechanisms
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Primary potential financial impact

Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

We have used RCP2.6 qualitatively to determine potentially relevant transition events that could be a risk or opportunity. As part of the implementation of the Paris agreement, carbon pricing mechanisms are being implemented or are under development. In the Netherlands, a CO2 tax increasing to 127 euro per ton of CO2 (Scope 1) by 2030 has been introduced and in Europe ETS is under reevaluation and has seen a recent price hike. Such a carbon tax could directly or indirectly increase Corbion's operational costs. In addition, if these measures are implemented at a different pace across the globe, the level playing field is impacted. We are using prices up to €150/ton CO2 eq in our current scenarios.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

2000000

Potential financial impact figure – maximum (currency)

6000000

Explanation of financial impact figure

Quantitative breakdown of the figure: Medium term, the annual impact is estimated to be about €2 million, based on the Scope 1 emissions of 42433 tons CO2e at our European plants and an assumed CO2 price of €50 / ton. Towards 2030, the annual impact can increase to €6 million assuming the CO2 prices increases to €150 / ton. However we do not expect the impact to rise to this level because of our emission reduction initiatives.

Cost of response to risk

9000000

Description of response and explanation of cost calculation

Case study - description of Corbion activities, projects, products and/or services to address the risk: We have developed a roadmap to reduce our energy consumption and our carbon footprint. For our direct operations, this roadmap includes investment in energy efficiency projects, such as heat integration and investing in more efficient equipment in case of end of life replacements. Examples of specific projects include: replacement of boilers by more efficient ones, installation of economizers, insulation improvements, improved fast detection of steam trap failure, installation of pre-heaters and electrification. The roadmap also includes R&D to develop new low carbon technologies to be implemented in the next stage of the roadmap. R&D is mainly focused on technology development in relation to the energy transition. We have joined several consortia, including VoltaChem and the Dutch hydrogen consortium to develop burner technology for production processes. Quantitative breakdown of cost calculation: A capital plan for 2020-2026 has been developed. This capital plan includes some €9 million CAPEX, of which 40% is related to replacing "end of life" equipment with more efficient equipment and 60% to heat integration and electrification. The plan defines 28 specific projects for each Corbion manufacturing site, for each of these projects a CAPEX estimation has been made as input to the plan. Per year, between €1-2 million CAPEX is spend at the various Corbion locations globally. Projects are prioritized based on payback time (including a CO2 price of 50 euro/ton) and planned in alignment with other CAPEX projects, to make use of synergies and to ensure focus.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Increased severity and frequency of extreme weather events such as cyclones and floods
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Primary potential financial impact

Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

RCP 8.5 was used (quantitative) to determine potentially relevant events for the 'business as usual' scenario, specific to the relevant Corbion locations. This included events such as storms, floods and droughts. Increased frequency of extreme weather (storms & floods) could cause a disruption to our manufacturing & distribution network, either because of a direct impact on our own manufacturing sites, or through disruption of the supply of raw materials. An example of a historic incident is the flooding of the Missouri river near to our facility in Blair, Nebraska, USA.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

9000000

Potential financial impact figure – maximum (currency)

11000000

Explanation of financial impact figure

Quantitative breakdown of the figure: Due to Corbion's global footprint, with manufacturing locations spread over the globe (Asia, Europe, North America and South America), using locally available renewable raw materials, with multiple suppliers for critical raw materials, Corbion has the possibility to mitigate supply chain disruption by increasing production at one of its other sites. The potential financial impact is estimated based on an assumed disruption of 1 month in our largest factory assuming we would no longer be able to deliver our lowest margin customers worldwide. With these assumptions, the financial impact on our net sales would be 9-11 mln euro.

Cost of response to risk

0

Description of response and explanation of cost calculation

Case study - description of Corbion activities, projects, products and/or services to address the risk: Corbion undertakes several activities to mitigate and control the risks of internal disruption due to extreme weather events: - Business continuity and crisis management plans including contingency sourcing are in place with ongoing evaluation, based amongst other things on highly credible incident identifications for each site. - Appropriate customer and supplier agreements are in place to limit exposure whilst leveraging supplies. - Residual risks are adequately insured including assets and business continuity risks. - Corbion has a global footprint, with manufacturing locations spread over the globe (Asia, Europe, North America and South America). Supply chain disruptions can be managed by increasing production at one of our other manufacturing sites. Quantitative breakdown of cost calculation: We do not incur additional costs to manage this risk, these costs are part of our general operational costs (Supply and Operational planning, business continuity planning, insurance costs etc.)

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Market	Changing customer behavior
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Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

We have used RCP2.6 qualitatively to determine potentially relevant transition events that could be a risk or opportunity. The special report on climate change and land by the Intergovernmental Panel on Climate Change (IPCC) describes plant-based diets as a major opportunity for mitigating and adapting to climate change — and includes a policy recommendation to reduce meat consumption. This could impact Corbion's sales of ingredients for meat preservation.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

12000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Quantitative breakdown of the figure: In 2020, Corbion's revenues in preservation amounted to €234 million. Assuming a 10% reduction in sales with an added value of 50%, the EBITDA impact is €12 million.

Cost of response to risk

0

Description of response and explanation of cost calculation

Case study - description of Corbion activities, projects, products and/or services to address the risk: Plant-based alternatives for meat also require preservation solutions. To mitigate this risk, Corbion is developing preservation ingredients (food safety and shelf life) for plant-based meat alternatives. Our existing capabilities in microbiology, fermentation and product development are well suited to develop these ingredients. In our Incubator, we also research alternative (non-meat) protein derived from algae. Quantitative breakdown of cost calculation: We do not incur additional costs because both topics are part of our innovation program and included in our general R&D spend - which was 37.2mln euro in 2020. Approximately 5-10% of this spent is in some way related to the development of algae protein. This amounts to approximately 2-4 mln euro. This is no additional cost as it is already included in our innovation program/general R&D spend.

Comment

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

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

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

Current fish oil supply to the aquaculture sector is 700 kt pa which is highly unlikely to grow given natural limits on wild catch availability and potential negative impact of climate change on sea water temperature. The aquaculture sector is expected to grow by 4% annually in the foreseeable future, creating a fish oil deficit of some 400kt pa in 2030. Corbion is supplying an alternative algae-based solution (AlgaPrime DHA) to replace and/or supplement fish oil. The technology was obtained through the acquisition of TerraVia in 2017/2018. AlgaPrime DHA (Omega3) is produced in our large scale algae fermentation facility in Orindiuva, Brazil. Our main partner on the commercialization of the aquaculture feed is Biomar one of the four largest aquaculture feed producers in the world.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

75000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Quantitative breakdown of the figure: Assuming a 30% Corbion market share in 2030, a price of €3000 / ton and an EBITDA margin of 20% (which is common for microingredient feed additives), we believe Corbion could earn some €75 million EBITDA in 2030 on this business. Corbion is currently market leader in algae-based

omega-3 with Veramaris (JV DSM and Evonik) as our main competitor.

Cost to realize opportunity

50000000

Strategy to realize opportunity and explanation of cost calculation

Case study - description of Corbion activities, projects, products and/or services to realize the opportunity: Corbion acquired Terravia assets in 2017, which included a large scale algae fermentation plant in Brazil. The majority of the assets for this opportunity are therefore already in place and were in full effect in 2018 and 2019. Furthermore, Corbion has a partnerships a.o. with Biomar, one of the four largest aquaculture feed producers in the world. In parallel, we are engaging with large food retailers and FMCG companies to create demand for this sustainable alternative for fish oil. Quantitative breakdown of cost calculation: The total investment of the Terravia assets amounts roughly €50 million. Some incidental expansion CAPEX will be necessary to realize the opportunity.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced direct costs

Company-specific description

We have identified opportunities to reduce energy consumption by investing in more efficient equipment in case of end of life replacements, heat integration etc. This will reduce energy costs due to the reduced consumption of natural gas, electricity and/or purchased steam. In addition, this will reduce the emissions of CO2 and thereby minimize a possible future impact of carbon taxation. Especially for our European locations such as Gorinchem (the Netherlands) and Montmelo (Spain) the probability of a Carbon tax is quite high as the EU is pressing strong climate-related regulations and the Netherlands has started implementing the Climate agreement which includes a carbon price of €127/ton CO2 eq by 2030.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

3650000

Potential financial impact figure – maximum (currency)

4950000

Explanation of financial impact figure

Quantitative breakdown of the figure: Based on the estimated energy and CO2 reduction that can be achieved through our CO2 reduction roadmap for 2020-2026 and assuming a carbon tax of €50 - 150 / ton, the estimated financial impact is €3.65-4.95 million savings per year. This estimate is based on an estimated CO2 reduction of 13,000 tons annually by 2026 (valued at €50 - 150 / ton) and estimated savings on energy costs of some 3 mln euro annually.

Cost to realize opportunity

9000000

Strategy to realize opportunity and explanation of cost calculation

Case study - description of Corbion activities, projects, products and/or services to realize the opportunity: We have developed a roadmap to reduce our energy consumption and our carbon footprint. For our direct operations, this roadmap includes investment in energy efficiency projects, such as heat integration and investing in more efficient equipment in case of end of life replacements. Examples of specific projects include: replacement of boilers by more efficient ones, installation of economizers, insulation improvements, improved fast detection of steam trap failure, installation of pre-heaters and electrification. The roadmap also includes R&D to develop new low carbon technologies to be implemented in the next stage of the roadmap. R&D is mainly focused on technology development in relation to the energy transition. We have joined several consortia, including VoltaChem and the Dutch hydrogen consortium to develop burner technology for production processes. Quantitative breakdown of cost calculation: A capital plan for 2020-2026 has been developed. This capital plan includes some €9 million CAPEX, of which 40% is related to replacing "end of life" equipment with more efficient equipment and 60% to heat integration and electrification. The plan defines 28 specific projects for each Corbion manufacturing site, for each of these projects a CAPEX estimation has been made as input to the plan. Per year, between €1-2 million CAPEX is spend at the various Corbion locations globally. Projects are prioritized based on payback time (including a CO2 price of 50 euro/ton) and planned in alignment with other CAPEX projects, to make use of synergies and to ensure focus.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

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

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

This opportunity is mainly related to Total Corbion PLA bv. This is our 50/50 joint venture with Total for the production and marketing of poly lactic acid (PLA) polymers and lactide monomers for bioplastic solutions. Awareness of the non-biodegradable properties of regular plastic and how this is affecting our planet is increasing. This awareness will shift demand to biobased and biodegradable alternatives such as PLA.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

57000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Quantitative breakdown of the figure: Our JV with Total (Total Corbion PLA) has commissioned a PLA polymerization plant in Dec 2018 of 75 kton (0.025% of the total current petroleum-based plastic market) and is rapidly ramping up production. This is expected to make a meaningful contribution to our sales levels in the near future. Assuming 100% capacity utilization with standard PLA, revenues for this plant could be approximately €190 million (\$225 mln) with an expected EBITDA margin in excess of 30%, this equals €57 million EBITDA per year.

Cost to realize opportunity

64000000

Strategy to realize opportunity and explanation of cost calculation

Case study - description of Corbion activities, projects, products and/or services to realize the opportunity: We have established a PLA sales and manufacturing joint venture with Total in November 2016 (Total Corbion PLA). In 2018, the joint venture started a new manufacturing facility for PLA in Thailand to be able to supply the market with PLA. Quantitative breakdown of cost calculation: The total amount of this investment was €128 million (\$140 mln), resulting in an investment from Corbion of €64 million (50/50 Joint Venture). This new facility is critical to allow for further growth of the market. The PLA facility is co-located with Corbion's existing lactic acid plant in Rayong Thailand.

Comment

C3. Business Strategy

C3.1

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

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

C3.1a

(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	No, and we do not intend it to become a scheduled resolution item within the next two years	

C3.2

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

Yes, qualitative and quantitative

C3.2a

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

Climate-related scenarios and models applied	Details
RCP 2.6 RCP 8.5	As input for the climate risks and opportunities workshops, we have used RCP2.6 qualitatively to determine potentially relevant transition events that could be a risk or opportunity. This included events such as implementation of (local) carbon pricing, changing demand for e.g. meat and biobased plastics, and stakeholder pressure to reduce GHG emissions in line with the 1.5 pathway. RCP 8.5 was used (quantitative) to determine potentially relevant events for the 'business as usual' scenario, specific to the relevant Corbion locations. This included events such as storms, floodings and droughts. The results of this scenario analysis and the potential risks and opportunities that were identified have informed our Advance 2025 strategy update and business plans for the next 5 years. This includes among others the decision to implement a breakthrough technology for lactic acid production with a significantly lower carbon footprint in Thailand, research on alternative (non-meat based) protein based on algae in our incubator and our commitment to a Science-based target. We have also used RCP 2.6 (quantitative) for guidance on our target setting. Our Science-based target is based on IPCC AR5 RCP 2.6, based on absolute reduction to reach global warming below 2C in 2050 Based on RCP minimum absolute global emission reduction for Corbion to be aligned with the Paris agreement has been calculated. The EU's nationally determined contribution (NDC) under the Paris Agreement is to reduce greenhouse gas emissions by at least 40% by 2030 compared to 1990. Therefore the time horizon considered is till 2030. The scope covers all of Corbion's production sites, as the head office's emissions are insignificant compared to the sites. Our CO2 reduction roadmap is based on our corporate strategy and evaluating the impact of specific measures that were identified from workshops. IPCC AR5 RCP 2.6 is used to calculate emissions. These measures include energy efficiency, use of renewable energy, yield optimization, and development and implementation of breakthrough technologies in our manufacturing facilities. An example of such breakthrough technology is the gypsum-free technology to produce lactic acid. This technology has a significantly lower carbon footprint and will be implemented in the new lactic acid manufacturing facility that will be operational mid 2023, a 190 mln USD investment. We are also engaging with our key suppliers to create awareness on climate change and the need for emission reduction.

C3.3

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

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Corbion offers products and services that can help our customers reduce their carbon footprint. In our recently updated Advance 2025 strategy, we focus on sustainable food solutions to reduce food waste (and related GHG emissions), on PLA bioplastics with a reduced carbon footprint compared to e.g. polystyrene and on alternative (non-meat) protein. In the strategy development phase we have re-assessed all of our products for their contribution towards the SDGs and made this one of the key criteria for in- or exclusion of a product. This strategy has a 5 year time horizon. An example of a major strategic decision related to these opportunities is the decision to invest approximately US\$ 190 million in a new 125,000 metric tons lactic acid plant in Thailand to be able to meet the demand for PLA bioplastics. This factory is currently being constructed and is expected to be operational in 2023.
Supply chain and/or value chain	Yes	Corbion is a bio-based company, offering products that require less fossil input. Our conventional lactic acid production relied, next to sugar, on lime as an input. Climate change has influenced our strategy in that we aim to rely less on fossil inputs where possible. An example of a major strategic decision related to climate change in this areas is the decision to implement a breakthrough technology for lactic acid production that doesn't require lime and has a significantly lower carbon footprint in a new factory in Thailand (start-up in 2023). The new plant will be based on our innovative and proprietary gypsum-free technology. This new technology will further enhance our position as lowest cost producer of lactic acid at the highest sustainability standards. We are also engaging with suppliers to reduce the carbon footprint of our raw materials and mitigate climate risks in agriculture. This strategic supplier engagement initiative has a 10-15 year time horizon, with initial focus on our 2030 science-based target.
Investment in R&D	Yes	Corbion invests in R&D for sustainable food solutions to reduce food waste (and related GHG emissions), alternative (non-meat) protein based on algae and we have an R&D program to develop the lowest carbon footprint technology for lactic acid production, to achieve our science-based target (10-15 year time horizon). On top of this, in line with our Advance 2025 strategy, all new R&D projects are required to positively contribute to our focus SDGs or Climate Change mitigation/adaptation. An example of a major strategic decision related to climate change in this areas is the formation of the Incubator Business Unit. The Incubator focuses on new business development leveraging Corbion's fermentation skills and competencies, to create new growth paths. The main projects under investigation are all related to climate change opportunities: algae-derived DHA as alternative for fish oil (see Opportunities section), plant-based protein derived from algae and the co-polymer research platform to develop biobased alternatives for fossil-based solutions. This contributes to two of our focus SDGs, namely SDG 2: zero hunger and SDG 12: responsible production and consumption.
Operations	Yes	Our GHG reduction roadmap includes a Capital Expenditure plan for the next 5 years to invest in energy efficiency in our existing manufacturing plants. We are continuously putting efforts towards developing new technologies aimed at reduced raw-material input such as our new circular production process (gypsum-free) and increased reuse/recycling potential of final products and inputs. An example of a major strategic decision related to climate change in this areas is the decision to implement a breakthrough technology for lactic acid production with a significantly lower carbon footprint in a new factory in Thailand (start-up in 2023). The new plant will be based on our innovative and proprietary new circular production process (gypsum-free technology). This new technology reduces overall CO2-emissions and by-products of lactic acid. It will further enhance our position as lowest cost producer of lactic acid at the highest sustainability standards.

C3.4

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

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Capital expenditures Capital allocation Acquisitions and divestments Assets	Revenues: Our financial planning process includes an assessment of the potential revenues related to climate-opportunities. In our business unit Sustainable Food Solutions we intend to benefit from the increased emphasis on the reduction of food waste, an issue we can address with our natural preservation solutions. In our Lactic Acid Specialties BU, we expect to benefit from the increased usage of bioplastics due to their reduced carbon footprint. This should increase revenues due to lactic acid sales to our JV Total Corbion PLA. In our Incubator, we plan to benefit from the shift from fish oil to algae based omega-3 in aquaculture. These impacts are included in our Advance 2025 strategy, a plan for the next 5 years. Capital expenditures/allocation: Our financial planning process includes an assessment of the required capital expenditures. Recurring capital expenditure of € 60-70 million annually are included in our financial planning. We have developed a roadmap to reduce our energy consumption and our carbon footprint. For our direct operations, this roadmap includes investment in energy efficiency projects, such as heat integration, which will reduce operating cost. A capital plan for the next 5-6 years has been developed. Acquisitions and divestments: The impacts of potential acquisitions, such the past acquisition of Terra Via and Granotec, are included in our financial planning. Assets: To execute our Advance 2025 strategy we will have to make adjustments to our manufacturing footprint, including our assets. We have started construction of a new lactic acid manufacturing facility in Thailand using a next generation technology with significantly reduced carbon footprint. Our financial planning includes a total CAPEX of 170mln Euro (USD 190 mln) for this specific project.

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

C4.1

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

Intensity target

C4.1b

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

Target reference number

Int 1

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based) + 3 (upstream and downstream)

Intensity metric

Metric tons CO2e per metric ton of product

Base year

2016

Intensity figure in base year (metric tons CO2e per unit of activity)

1.795

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

73

Target year

2030

Targeted reduction from base year (%)

33

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]

1.20265

% change anticipated in absolute Scope 1+2 emissions

-29

% change anticipated in absolute Scope 3 emissions

-5

Intensity figure in reporting year (metric tons CO2e per unit of activity)

1.597

% of target achieved [auto-calculated]

33.4261838440111

Target status in reporting year

Underway

Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition

2°C aligned

Please explain (including target coverage)

We made a bold statement about our commitment to sustainability by pledging to cut our carbon emissions related to energy, key raw materials, and transport by 33% per metric ton of product by 2030 from a 2016 base year. The proposed target has received approval by the Science Based Targets initiative (SBTi) following a thorough validation process. We report our emissions in accordance with the Greenhouse Gas Protocol per metric ton of product. Our Science Based target includes Scope I emissions from direct production (from natural gas), Scope II emissions from purchased energy (electricity and purchased steam, market-based), and Scope III emissions related to key raw materials and transport. Our full Scope III emissions and biogenic emissions are reported in the Sustainability statements.

C4.2

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

Target(s) to increase low-carbon energy consumption or production

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number

Low 1

Year target was set

2016

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

Target type: energy carrier

Electricity

Target type: activity

Consumption

Target type: energy source

Renewable energy source(s) only

Metric (target numerator if reporting an intensity target)

Percentage

Target denominator (intensity targets only)

<Not Applicable>

Base year

2016

Figure or percentage in base year

20

Target year

2030

Figure or percentage in target year

100

Figure or percentage in reporting year

71

% of target achieved [auto-calculated]

63.75

Target status in reporting year

Underway

Is this target part of an emissions target?

Int 1

Is this target part of an overarching initiative?

RE100

Please explain (including target coverage)

In 2017, Corbion started implementation of our renewable electricity roadmap by purchasing renewable electricity in Gorinchem (50%), Totowa (75%) and Tucker (75%). In addition, solar panels were installed at our site in Gorinchem, the Netherlands. In 2018 we increased the use of renewable electricity to 100% for Totowa and Tucker (U.S.) and to 50% for Blair (U.S.). We also installed solar panels at our new U.S. headquarters site in Lenexa. In 2019 renewable electricity share in Blair (US) increased to 100% and our site in Dolton (US) also used 100 % renewable electricity. In 2020 we started purchasing 100% renewable electricity in Grandview. Bringing our total share of renewable electricity to 71%. Renewable energy target: 50% renewable electricity by 2020 and 100 % renewable electricity by 2030. In 2020: 71 % renewable electricity

C4.3

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

Yes

C4.3a

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

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	37	143000
To be implemented*	4	2075
Implementation commenced*	2	8464
Implemented*	2	1789
Not to be implemented	0	0

C4.3b

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

Initiative category & Initiative type

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

Estimated annual CO2e savings (metric tonnes CO2e)

1769

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

208000

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

1500000

Payback period

4-10 years

Estimated lifetime of the initiative

16-20 years

Comment

Replacement of an older boiler will increase efficiency of steam production from natural gas. This initiative was erroneously included in the "implemented" section last year where it should have been included in the "to be implemented" section. It was implemented in 2020.

Initiative category & Initiative type

Non-energy industrial process emissions reductions	Process equipment replacement
--	-------------------------------

Estimated annual CO2e savings (metric tonnes CO2e)

20

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

4000

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

180000

Payback period

16-20 years

Estimated lifetime of the initiative

16-20 years

Comment

Replacement of stills boiler tank. This initiative was erroneously included in the "implemented" section last year where it should have been included in the "to be implemented" section. It was implemented in 2020.

C4.3c

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

Method	Comment
Employee engagement	Since 2016, Corbion is collecting ideas for emission reduction investments through employee engagement. This is being done via onsite "zero waste" workshops, where we collect all potential ideas for emission reductions. Each site has one or more Zero waste/sustainability ambassadors that can propose ideas; there is a central budget to investigate and possibly implement these ideas.
Dedicated budget for other emissions reduction activities	In the yearly CAPEX budgeting procedure, each site can submit proposals for investments in emission reduction/sustainability, these are considered strategic initiatives and a certain part of the CAPEX budget is allocated to these sustainability initiatives

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

In 2020 we performed an SDG impact assessment, part of which was the classification of low carbon products. In 2020 7% (based on revenue) of our products contributed to reducing greenhouse gas emissions. These products aim at: 1) The replacement of fossil based chemicals with bio-based chemicals. For example, Poly Lactic Acid (PLA) bioplastic to replace polystyrene. PLA is renewable, compostable and has 77% lower carbon footprint than polystyrene. 2) The replacement of wild fish stocks as a fish feed with algae-based aquaculture feed. For example, AlgaPrime DHA has 36 % lower carbon footprint than fish oil, per kg of DHA.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify (Efficient processes & renewable feedstock)

% revenue from low carbon product(s) in the reporting year

8

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

We define low carbon products as those contributing to a lower carbon economy through: - Energy efficient processes and products; - Usage of renewable feedstocks that do not deplete terrestrial carbon pools The potential for avoided emissions is based on Life Cycle Assessment of our 'low carbon products' vs a benchmark product. For example, Poly Lactic Acid (PLA) bioplastic to replace polystyrene - PLA has 77% lower carbon footprint than polystyrene. Algae based fish feed to replace wild caught fish feed - AlgaPrime DHA has 36 % lower carbon footprint than fish oil, per kg of DHA. Sales related to lactic acid for PLA will be reported under Lactic Acid and Specialities, Sales related to AlgaPrime DHA will be reported under Incubator.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1 2013

Base year end

December 31 2013

Base year emissions (metric tons CO2e)

81439

Comment

Scope 2 (location-based)

Base year start

January 1 2013

Base year end

December 31 2013

Base year emissions (metric tons CO2e)

89859

Comment

Scope 2 (market-based)

Base year start

January 1 2013

Base year end

December 31 2013

Base year emissions (metric tons CO2e)

89859

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

113925

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

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

Reporting year

Scope 2, location-based

97973

Scope 2, market-based (if applicable)

59061

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

C6.4

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

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source

Excluded Scope 1 emissions are: Diesel used on site for forklift trucks, fugitive emissions from refrigerants and usage of carbonates. Excluded from scope 2 are CH4 and N2O emissions from purchased bioenergy.

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

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

Emissions are not relevant

Explain why this source is excluded

We report our emissions in carbon equivalents from cradle to gate in accordance with the Greenhouse Gas Protocol. This includes Scope I emissions from direct production (for natural gas), Scope II emissions from purchased energy (for electricity and purchased steam). To reach our 2030 SBT-target, we see more potential to drive emissions reductions of our facilities. This is also what stakeholders, such as customers expect from us. Furthermore, the initial estimation showed that these exclusions represent 0.7% of Scope 1+2 emissions. Setting up a reporting structure and gathering this data periodically will be rather costly compared to the relatively low environmental benefits.

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

676717

Emissions calculation methodology

Calculation method: Calculate the cradle to gate emissions of >95% (by weight) our raw materials. The quantity of each single material used is multiplied with its emission factor. Resulting Scope 3 emissions were then extrapolated to 100% in order to account for all materials utilized. Emissions factors: Cradle to gate emission factors are obtained from suppliers or commercially available databases, adapted to the local conditions when possible. When the materials used were part of a multi-product process which could not be sub-divided, economic allocation was performed.

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

28

Please explain

Capital goods

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

49198

Emissions calculation methodology

Calculation method: Calculated using the economic value of tangible capital expenditures spent in the reporting year. Includes operations, R&D, innovation and IT. Assumptions that 30 – 60% of Capex is related to the purchased equipment (direct cost), the rest being engineering, labour etc., are based on internal expert opinions for that particular investment. Composition of capital goods is assumed to be 10 % concrete, 90 % steel except for investments which are in the initial stage (more concrete needed) or final stage of construction (more steel needed). Emissions factors: Cradle to gate emission factors of steel and concrete are from Ecoinvent V3.6.

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

0

Please explain

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

Evaluation status

Relevant, calculated

Metric tonnes CO2e

32010

Emissions calculation methodology

Calculation method: Emissions from transmission and distribution losses of electricity are from IEA 2018 and eGRID 2018 (for US). Cradle to gate emission factors of high pressure natural gas are based on Ecoinvent 3.5 data for different countries. It covers natural gas production (on shore and off-shore), imports and losses during transmissions and storage. Conversion from CO2 eq /m3 to kg CO2/ MJ is based on the country specific HHV of natural gas.

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

0

Please explain

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

106656

Emissions calculation methodology

Transport method -it is assumed that road transport is done by truck and intercontinental transport by transoceanic freight. We assume all transport is done by road whenever possible. Only when the road is not physically possible we change to transoceanic transport. The distance for intercontinental shipped materials is calculated based on the distance between ports (<http://www.searates.com/reference/portdistance/>). For road transport, the distances are calculated using the site locations and the vendors' invoice addresses, using google maps. Cradle to gate emission factors for transoceanic freight ("Transport, freight, sea, transoceanic ship {GLO}| market for | APOS, U") and lorry ("Transport, freight, lorry 16-32 metric ton, EURO5 {GLO}| market for | APOS, U") are taken from Ecoinvent v3.6 database.

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

0

Please explain

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

53908

Emissions calculation methodology

Calculation method: amount of waste landfilled or incinerated is collected from the sites on yearly basis. This includes incinerated and landfilled by-products. Emissions from recycling and incineration with energy recovery are assumed to be zero. It is assumed that all carbon is degraded and 50% of this carbon ends up as CO2 and 50% as CH4. Methane is not captured (neither for energy production or flared -> all CH4 generated is released). When composition of the wasted material is not known it is assumed that all carbon is fossil based. Carbon content in waste is taken from IPPCC 2006, Chapter 2: Waste Generation, Composition and Management, chapter 5: for non-hazardous waste 0.8 ton C/ton waste -> corresponds to petroleum industry (worse case); for hazardous waste average value of 0.275 tonC/ton waste

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

0

Please explain

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

3419

Emissions calculation methodology

The spend-based method is used to calculate the emissions from business travel. We assume 10% of the spent value corresponds to travel by car and 90% by airplane. Emission factors Calculated using <https://quantis-suite.com/Scope-3-Evaluator/>. Based on the 'The World Input-Output Database (WIOD), 2009'

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

0

Please explain

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

5418

Emissions calculation methodology

Assumptions: all transport by car (1 employee by car), two trips per day, 220 working days, default travel distance 30 km. Emission factors: Cradle to gate emission factors were obtained from Ecoinvent v3 database, using European datasets: "Transport, passenger car {RER}| processing | APOS, U" (average of car size, fuel type and engine (Euro 3 - Euro 5).

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

0

Please explain

Upstream leased assets

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

7087

Emissions calculation methodology

Electricity and natural gas consumption in leased offices and warehouses are included. Emission factors are in line with Scope 1 and market-based approach for Scope 2 calculation. The spend-based method is used to calculate Sscope 3 emissions from leased assets. Emission factor for Rental and leasing services (DEFRA I/O database, 2011) was used.

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

0

Please explain

Not relevant, Corbion hardly leases assets

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

112709

Emissions calculation methodology

Calculated based on transport movements. Kilometers times conversion factor. Methodology the same as for Upstream transportation i.e. It is assumed that road transport is done by truck and intercontinental transport by transoceanic freight. We assume all transport is done by road whenever possible. Only when road is not physically possible we change to transoceanic transport. The distance for intercontinental shipped materials are calculated based on the distance between ports (<http://www.searates.com/reference/portdistance/>). For road transport, the distances are calculated using the site locations and the vendors invoice addresses, using google maps. Cradle to gate emission factors for transoceanic freight ("Transport, freight, sea, transoceanic ship {GLO}| market for | APOS, U ") and lorry ("Transport, freight, lorry 16-32 metric ton, EUROS {GLO}| APOS, U") are taken from Ecoinvent v3 database.

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

0

Please explain

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

Corbion's products are intermediates used in many downstream applications, primarily in food but also in pharma, home and personal care, electronics, agrochemicals, feed etc. . Because of this, it is not possible to reasonably estimate the indirect emissions from processing of sold products. Corbion products represent a non-material element in the final product (usage level around 1%).

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

Corbion's products are intermediates used in many downstream applications, primarily in food but also in pharma, home and personal care, electronics, agrochemicals, feed etc. . They represent a non-material element in the final product (usage level around 1%). Corbion's products do not directly consume energy at customers.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

Corbion's products are intermediates used in many downstream applications, primarily in food but also in pharma, home and personal care, electronics, agrochemicals, feed, etc. Because of this, it is unrealistic to estimate the end of life of all applications. Furthermore, the largest sectors are the food applications and Corbion's products are >98% biobased (p41 Corbion's annual report 2018). As such the possible end-of-life GHG emissions are expected to be low.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

Not relevant, Corbion does not lease assets downstream.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

Not relevant, Corbion does not have franchises.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

Not relevant as Corbion is not an investor.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

No other relevant upstream scope 3 emissions applicable.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

No other relevant upstream scope 3 emissions applicable.

C-AC6.6/C-FB6.6/C-PF6.6

(C-AC6.6/C-FB6.6/C-PF6.6) Can you break down your Scope 3 emissions by relevant business activity area?

Yes

C-AC6.6a/C-FB6.6a/C-PF6.6a

(C-AC6.6a/C-FB6.6a/C-PF6.6a) Disclose your Scope 3 emissions for each of your relevant business activity areas.

Activity

Distribution

Scope 3 category

Upstream transportation and distribution

Emissions (metric tons CO2e)

106656

Please explain

Transport method: It is assumed that road transport is done by truck and intercontinental transport by transoceanic freight. We assume all transport is done by road whenever possible. Only when road is not physically possible we change to transoceanic transport. The distance for intercontinental shipped materials are calculated based on the distance between ports (<http://www.searates.com/reference/portdistance/>). For road transport, the distances are calculated using the site locations and the vendors invoice addresses, using google maps. Cradle to gate emission factors for transoceanic freight ("Transport, freight, sea, transoceanic ship {GLO}| market for | APOS, U ") and lorry ("Transport, freight, lorry 16-32 metric ton, EURO5 {GLO}| market for | APOS, U ") are taken from Ecoinvent v3 database.

Activity

Distribution

Scope 3 category

Downstream transportation and distribution

Emissions (metric tons CO2e)

112709

Please explain

Calculated based on transport movements. Kilometers times conversion factor. Methodology the same as for Upstream transportation: Cradle to gate emission factors for transoceanic freight ("Transport, freight, sea, transoceanic ship {GLO}| market for | APOS, U ") and lorry ("Transport, freight, lorry 16-32 metric ton, EURO5 {GLO}| market for | APOS, U ") are taken from Ecoinvent v3 database.

Activity

Agriculture/Forestry

Scope 3 category

Purchased goods and services

Emissions (metric tons CO2e)

346379

Please explain

All our agricultural raw materials are taken into account when calculating the answer to this question. Emission factors are taken from Agrifootprint V5 database and adjusted to the sourcing location, or are based on the information from suppliers.

C6.7

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

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	49544	Biogenic emissions are mainly related to indirect emissions from purchased renewable energy and direct emissions from algae fermentations, the consumption of biogas, and waste water treatment.

C-AC6.8/C-FB6.8/C-PF6.8

(C-AC6.8/C-FB6.8/C-PF6.8) Is biogenic carbon pertaining to your direct operations relevant to your current CDP climate change disclosure?

Yes

C-AC6.8a/C-FB6.8a/C-PF6.8a

(C-AC6.8a/C-FB6.8a/C-PF6.8a) Account for biogenic carbon data pertaining to your direct operations and identify any exclusions.

CO2 emissions from biofuel combustion (processing/manufacturing machinery)

Emissions (metric tons CO2)

29434

Methodology

Region-specific emissions factors

Please explain

Biogenic CO2 emissions from combustion of biogas in our sites in Netherlands, Brazil and Thailand are calculated with site specific emission factors of biogas based on biogas composition. Biogenic CO2 emissions from biogenic energy sources used in our site in Orindiuva are based on WBSCD default factors for allocation of emissions from biofuel powered combined heat and power generation (Guidance for Measuring & Reporting Corporate Value Chain GHG Emissions in the Chemical Sector, 2013, page 43) and emission factors from bagasse combustion from GHG protocol from BR, 2019 version

C-AC6.9/C-FB6.9/C-PF6.9

(C-AC6.9/C-FB6.9/C-PF6.9) Do you collect or calculate greenhouse gas emissions for each commodity reported as significant to your business in C-AC0.7/FB0.7/PF0.7?

Agricultural commodities

Soy

Do you collect or calculate GHG emissions for this commodity?

Yes

Please explain

Yes, we calculated GHG emissions for soybean oil: 42,281 ton CO2 eq

Agricultural commodities

Sugar

Do you collect or calculate GHG emissions for this commodity?

Yes

Please explain

Yes, we calculated GHG emissions for sugar: 108,018 ton CO2 eq (dextrose from corn is excluded, see 'corn' for emissions from dextrose)

Agricultural commodities

Palm Oil

Do you collect or calculate GHG emissions for this commodity?

Yes

Please explain

Yes, we calculated GHG emissions for palm oil: 45,880 ton CO2 eq

Agricultural commodities

Other (Maize)

Do you collect or calculate GHG emissions for this commodity?

Yes

Please explain

Yes, we calculated GHG emissions for dextrose from corn: 41,879 ton CO2 eq

C-AC6.9a/C-FB6.9a/C-PF6.9a

(C-AC6.9a/C-FB6.9a/C-PF6.9a) Report your greenhouse gas emissions figure(s) for your disclosing commodity(ies), explain your methodology, and include any exclusions.

Palm Oil

Reporting emissions by

Unit of production

Emissions (metric tons CO2e)

4.47

Denominator: unit of production

Metric tons

Change from last reporting year

Lower

Please explain

Based on information from suppliers and LCA database Agrifootprint V5. Emissions per ton of palm oil decreased due to RSPO implementation and reduced impact on land use change

Soy

Reporting emissions by

Unit of production

Emissions (metric tons CO2e)

1.52

Denominator: unit of production

Metric tons

Change from last reporting year

About the same

Please explain

Based on information from suppliers and LCA database Agrifootprint V5. Total emissions related to soy decreased by 5% due to lower quantity purchased. Emission factor unchanged.

Sugar

Reporting emissions by

Unit of production

Emissions (metric tons CO2e)

0.4

Denominator: unit of production

Metric tons

Change from last reporting year

Lower

Please explain

Based on information from suppliers and LCA database Agrifootprint V5. Change because of improvement in data quality and separate reporting of dextrose from corn (US). 0.40 kg CO2eq/kg is the weighted average of emissions from sucrose in Thailand, Brazil, US and Europe. Due to a change in the supplier mix the emission factor dropped by 0.01 and due to the separate reporting of dextrose from corn the emission factor dropped by an additional 0.03.

Other

Reporting emissions by

Unit of production

Emissions (metric tons CO2e)

0.56

Denominator: unit of production

Metric tons

Change from last reporting year

This is our first year of measurement

Please explain

Based on information from suppliers and LCA database Agrifootprint V5. This is the first time we report emissions from dextrose separately from sugar.

C6.10

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

Intensity figure

0.000175

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

172987

Metric denominator

unit total revenue

Metric denominator: Unit total

986500000

Scope 2 figure used

Market-based

% change from previous year

1.3

Direction of change

Increased

Reason for change

Emission intensity has risen because our sales mix has changed. In 2020 we produced and sold relatively more Lactic Acid compared to the previous year. Most of which to our joint venture TotalCorbion PLA. Although PLA is a low carbon and renewable alternative to fossil based plastics the production of Lactic Acid is more carbon intensive than many of our other product streams such as functional blends, resulting in a rise in emission intensity per unit of total revenue.

C7. Emissions breakdowns

C7.1

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

No

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Brazil	18914
Netherlands	26543
Thailand	34793
United States of America	14329
Spain	19347

C7.3

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

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Sustainable Food Solutions	75191
Lactic Acid & Specialties	37595
Incubator/Algae Ingredients	1139

C-AC7.4/C-FB7.4/C-PF7.4

(C-AC7.4/C-FB7.4/C-PF7.4) Do you include emissions pertaining to your business activity(ies) in your direct operations as part of your global gross Scope 1 figure?

Yes

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

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

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	112314	<Not Applicable>	The only relevant breakdown is for the "chemical production sector", where all sites except Araucária, East Rutherford and Totowa belong to.
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C-AC7.4b/C-FB7.4b/C-PF7.4b

(C-AC7.4b/C-FB7.4b/C-PF7.4b) Report the Scope 1 emissions pertaining to your business activity(ies) and explain any exclusions. If applicable, disaggregate your agricultural/forestry by GHG emissions category.

Activity

Processing/Manufacturing

Emissions category

<Not Applicable>

Emissions (metric tons CO2e)

112314

Methodology

Region-specific emissions factors

Please explain

This is equal to the chemical activities of Corbion as they include processing and manufacturing. This is all of scope 1, minus the emissions of the non-chemical plants: Araucária, East Rutherford and Totowa.

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Brazil	5146	1355	133171	114858
Netherlands	11644	2168	27869	23801
Spain	4868	0	18759	18759
Thailand	22656	22656	47761	877
United States of America	53660	32883	176038	41218

C7.6

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

By business division

C7.6a

(C7.6a) 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)
Sustainable Food Solutions	64662	38980
Lactic Acid & Specialties	32331	19490
Incubator/Algae Ingredients	980	591

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	93777	57159	All our sites belong to the chemical sector, except in Araucária, Totowa and East Rutherford
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C-CH7.8

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

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
Other (please specify) (None)	0	This is not relevant for Corbion, as Corbion does not purchase chemical feedstock.

C-CH7.8a

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

	Sales, metric tons	Comment
Carbon dioxide (CO2)	0	This is not relevant for Corbion, as Corbion does not sell products that are greenhouse gases.
Methane (CH4)	0	This is not relevant for Corbion, as Corbion does not sell products that are greenhouse gases.
Nitrous oxide (N2O)	0	This is not relevant for Corbion, as Corbion does not sell products that are greenhouse gases.
Hydrofluorocarbons (HFC)	0	This is not relevant for Corbion, as Corbion does not sell products that are greenhouse gases.
Perfluorocarbons (PFC)	0	This is not relevant for Corbion, as Corbion does not sell products that are greenhouse gases.
Sulphur hexafluoride (SF6)	0	This is not relevant for Corbion, as Corbion does not sell products that are greenhouse gases.
Nitrogen trifluoride (NF3)	0	This is not relevant for Corbion, as Corbion does not sell products that are greenhouse gases.

C7.9

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

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	9238	Decreased	5.46	Gross Scope 1+2 emissions decreased by 5.46%, due to change in renewable energy consumption. Eight out of thirteen Corbion sites are now 100% powered by renewable electricity, which increases our global coverage to 71%, well ahead of our 2020 target (50%). Through these activities we reduced our emissions by 9,238 tons CO 2e. Our total Scope 1 and Scope 2 emissions in the previous year were 169,212 tons CO 2e, therefore we arrived at -5.46% through $(-9,238/169,212) * 100 = -5.46\%$ (i.e. a 5.46% decrease in emissions).
Other emissions reduction activities	1789	Decreased	1.1	Gross Scope 1+2 emissions decreased by 1.1%, due to energy efficiency activities undertaken. These activities include implemented process improvements and process equipment replacement. Through these activities we reduced our emissions by 1,789 tons CO 2e. Our total Scope 1 and Scope 2 emissions in the previous year were 169,212 tons CO 2e, therefore we arrived at -1.1% through $(-1,789/169,212) * 100 = -1.1\%$ (i.e. a 1.1% decrease in emissions).
Divestment		<Not Applicable >		
Acquisitions	37	Increased	0.02	Due to the acquisition of one production site in Brazil our Scope 1+2 emissions increased for 37 Ton CO2eq. Our total Scope 1 and Scope 2 emissions in the previous year were 169,212 tons CO 2e, therefore we arrived at 0.02% through $(37/169,212) * 100 = 0.02\%$ (i.e. a 0.02% increase in emissions).
Mergers		<Not Applicable >		
Change in output	14764	Increased	8.7	Due to the increase of production volume our Scope 1+2 emissions increased for 14764 Ton CO2eq. Our total Scope 1 and Scope 2 emissions in the previous year were 169,212 tons CO 2e, therefore we arrived at 8.7% through $(14764/169,212) * 100 = 8.7\%$ (i.e. a 8.7% increase in emissions).
Change in methodology		<Not Applicable >		
Change in boundary		<Not Applicable >		
Change in physical operating conditions		<Not Applicable >		
Unidentified		<Not Applicable >		
Other		<Not Applicable >		

C7.9b

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

Market-based

C8. Energy

C8.1

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

More than 0% but less than or equal to 5%

C8.2

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

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

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	5127	551886	557012
Consumption of purchased or acquired electricity	<Not Applicable>	152012	63545	215557
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	64491	123548	188040
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	143	<Not Applicable>	143
Total energy consumption	<Not Applicable>	221773	738979	960752

C-CH8.2a

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

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	548004
Consumption of purchased or acquired electricity	<Not Applicable>	202320
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	188040
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	143
Total energy consumption	<Not Applicable>	938507

C8.2b

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

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

C8.2c

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

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

551886

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

551886

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0.05734

Unit

metric tons CO2e per GJ

Emissions factor source

Country-based emission factors (kgCO2e/MJ) NG BR: 0,0608 NG ES: 0,0568 NG NL: 0,0565 NG TH: 0,0603 NG US : 0,0497 With assumption of 100% combustion efficiency +2% higher emissions due to incomplete combustion/other References: Brazil: Agencia nacional do Petroleo, natural gas e biocombustiveis, 2002 Thailand: Petroleum Authority of Thailand: Gas Quality and Pipeline flexibility study. Author: Preecha Kaewpun USA: A. Demirbas, Methane Gas Hydrate, chapter 2, 2010 Spain and NL: <http://www.enagas.es>, Data v 2.0 (2007)Ecoinvent report number 6-V (Page 8 & 10)

Comment

Fuels (excluding feedstocks)

Biogas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

5127

MWh fuel consumed for self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

5127

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

Emission factor

0

Unit

metric tons CO2e per GJ

Emissions factor source

The GHG protocol guidance. The GHG protocol states that CO2 emissions are to be reported outside of the scopes therefore the emission factor for this reporting purpose is equal to zero. Biogenic emission factors are: 0.072 kg CO2 eq/GJ (Brazil) and 0.066 kg CO2eq/GJ (Netherlands)

Comment

Cradle to gate emission factor for biogas is considered equal to 0. The GHG protocol states that CO2 emissions are to be reported outside of the scopes therefore the emission factor for this reporting purpose is equal to zero. The emissions are biogenic so not used for Scope 1 reporting. Biogenic emission factors are: 0.072 kg CO2 eq/kg (Brazil) and 0.066 kg CO2eq/kg (Netherlands)

C8.2d

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	143	143	143	143
Heat	0	0	0	0
Steam	5127	5127	5127	5127
Cooling	0	0	0	0

C-CH8.2d

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

	Total gross generation (MWh) inside chemicals sector boundary	Generation that is consumed (MWh) inside chemicals sector boundary
Electricity	143	143
Heat	0	0
Steam	5127	5127
Cooling	0	0

C8.2e

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

Sourcing method

Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type

Wind

Country/area of consumption of low-carbon electricity, heat, steam or cooling

United States of America

MWh consumed accounted for at a zero emission factor

41218

Comment

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Wind

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Netherlands

MWh consumed accounted for at a zero emission factor

23801

Comment

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Low-carbon energy mix

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Spain

MWh consumed accounted for at a zero emission factor

18759

Comment

Sourcing method

Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type

Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Brazil

MWh consumed accounted for at a zero emission factor

51224

Comment

Sourcing method

Heat/steam/cooling supply agreement

Low-carbon technology type

Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Thailand

MWh consumed accounted for at a zero emission factor

877

Comment

Sourcing method

Heat/steam/cooling supply agreement

Low-carbon technology type

Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling

Brazil

MWh consumed accounted for at a zero emission factor

63614

Comment

C-CH8.3

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

No

C9. Additional metrics

C9.1

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

Description

Waste

Metric value

27.87

Metric numerator

kT of waste

Metric denominator (intensity metric only)

-

% change from previous year

14.4

Direction of change

Increased

Please explain

There are three reasons to which the increase can be attributed: First and foremost is the Covid-19 crises which significantly increased the use of disposables at our facilities. Second is a higher overall production volume. And third the performance of several project based cleaning activities.

Description

Energy usage

Metric value

6.6

Metric numerator

Energy use in GJ

Metric denominator (intensity metric only)

Production volume in Tonnes

% change from previous year

2

Direction of change

Increased

Please explain

Because of a different product mix with more emphasis on Lactic Acid for sales to our PLA joint venture the energy intensity per ton of product has also risen.

C-CH9.3a

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

Output product

Specialty chemicals

Production (metric tons)

457971.85

Capacity (metric tons)

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

0.245

Electricity intensity (MWh per metric ton of product)

0.44

Steam intensity (MWh per metric ton of product)

0.41

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

Comment

Our chemical products are specialty organic chemicals from all Corbion sites except Araucaria, East Rutherford and Totowa

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

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

	Investment in low-carbon R&D	Comment
Row 1	Yes	

C-CH9.6a

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

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Radical process redesign	Small scale commercial deployment	≤20%		The self-healing concrete application based on our product SENTIALL was developed together with Green-Basilisk and is currently being commercialised on small scale by Green-Basilisk. SENTIALL can be used to create a self-healing concrete product that fills cracks in concrete by converting substrates into limestone, thereby repairing those cracks automatically. This innovation dramatically improves the durability of concrete structures, and thereby enables the cement industry to reduce their carbon footprint, due to the reduced need for cement and steel. This has been a long term innovation effort with <20% R&D investment over the last 3 years.
Radical process redesign	Large scale commercial deployment	21 - 40%		Corbion has developed a new technology for lactic acid production with a significantly reduced carbon footprint. This technology is currently being applied at small commercial scale in the Netherlands and will be applied in our new manufacturing plant in Thailand, start-up in 2023. The R&D investment over the last 3 years is 21-40%.
Bio technology	Large scale commercial deployment	21 - 40%		In Corbion's Incubator, new sustainable value propositions based on Algae fermentation are being developed. This includes algae-based DHA as alternative for fish oil and algae derived plant-based protein, to replace meat. The R&D investment over the last 3 years is 21-40%.

C10. Verification

C10.1

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

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

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

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Corbion_annual_report_2020-gecomprimeerd.pdf

Page/ section reference

The information of the external auditor can be found on page 56, page 72 and page 176-177 (KPIs verified by external auditor) of the Annual Report 2020

Relevant standard

Other, please specify (Dutch Standard 3000A)

Proportion of reported emissions verified (%)

100

C10.1b

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

Scope 2 approach

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

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Page/ section reference

The information of the external auditor can be found on page 56, page 72 and page 176-177 (KPIs verified by external auditor) of the Annual Report 2020

Relevant standard

Other, please specify (Dutch Standard 3000A)

Proportion of reported emissions verified (%)

100

Scope 2 approach

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

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Page/ section reference

The information of the external auditor can be found on page 56, page 72 and page 176-177 (KPIs verified by external auditor) of the Annual Report 2020

Relevant standard

Other, please specify (Dutch Standard 3000A)

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3 (upstream & downstream)

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

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Page/section reference

The information of the external auditor can be found on page 56, page 72 and page 176-177 (KPIs verified by external auditor) of the Annual Report 2020

Relevant standard

Other, please specify (Dutch Standard 3000A)

Proportion of reported emissions verified (%)

100

C10.2

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

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Renewable energy products	Dutch Standard 3000A	The information of the external auditor can be found on page 56, page 72 and page 176-177 (KPIs verified by external auditor) of the Annual Report 2020

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C11. Carbon pricing

C11.1

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

Yes

C11.1a

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

EU ETS

C11.1b

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

EU ETS

% of Scope 1 emissions covered by the ETS

40.28

% of Scope 2 emissions covered by the ETS

3.67

Period start date

January 1 2020

Period end date

December 31 2020

Allowances allocated

45535

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

45890

Verified Scope 2 emissions in metric tons CO2e

2168

Details of ownership

Facilities we own and operate

Comment

C11.1d

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

Description of Corbion's strategy for complying with the systems in which Corbion participate

Corbion's strategy for factories which fall under the EU ETS, and for other Corbion factories, is to reduce CO2 emissions based on a company-wide reduction strategy. In 2019, Corbion has committed to reducing our CO2 emissions related to energy, key raw materials, and transport by 33% per metric ton of product by 2030 from a 2016 base year. This target has been approved by the Science Based Target initiative. To fulfil this pledge, we have developed a roadmap, including the following actions, some of which are already in motion:

- Transition to 100% renewable electricity by 2030.
- Implement energy-saving projects at our manufacturing sites.
- Select the most energy-efficient technology available when equipment is replaced.
- Establish an R&D program to identify opportunities for heat integration, electrification, and recycling.
- Partner with key raw material suppliers to jointly reduce CO emissions.
- Review the financial impact of greenhouse gas emissions through internal carbon pricing in capital expenditure and long-term R&D projects.

Case study of how Corbion has applied this strategy

Since 2016, 2 factories were falling under the EU ETS. We have planned Capital Expenditure projects in both factories to reduce GHG emissions in the next 5 years and we are investigating future GHG reduction opportunities in R&D projects to ensure future compliance and minimize the financial impact.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

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

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Stakeholder expectations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment
Stress test investments
Identify and seize low-carbon opportunities

GHG Scope

Scope 1
Scope 2
Scope 3

Application

Expansion, CO2 reduction and Innovation projects

Actual price(s) used (Currency /metric ton)

50

Variance of price(s) used

The variance in price used is from 50 euros per metric ton, to 125 euros per metric ton for specific regions (the Netherlands)

Type of internal carbon price

Shadow price

Impact & implication

For large expansion projects, an internal carbon price on all scopes is applied to understand the financial impact of a (future) external carbon price and the impact on our Science Based Target. In our CO2 reduction roadmap, we use an internal carbon price for priority setting. To encourage development of low-carbon technologies, we are reviewing the financial impact of GHG emissions through internal carbon pricing in our long-term R&D projects.

C12. Engagement

C12.1

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

Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

C12.1a

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

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

% of suppliers by number

10

% total procurement spend (direct and indirect)

44

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

70

Rationale for the coverage of your engagement

Corbion has joined the Science Based Targets initiative and our Science Based target includes Scope III emissions related to key raw materials and transport. Our target covers ~70% of our Scope 3 emissions and we are currently engaging with these suppliers to raise awareness on climate change, the Paris agreement, Science Based Targets etc and to discuss opportunities for the suppliers to reduce their emissions. We have chosen suppliers of our 7 main raw materials for production because they are vital to our business. These materials are: lime, sugar, dextrose, soybean oil, palm oil, glycerine and sodium hydroxide.

Impact of engagement, including measures of success

A clear description of measures of success: When measuring success of our supplier engagement we mainly look at two indicators: 1) improvement of accuracy of emission factors and 2) reduction of own emissions by working with the suppliers. In other words: reduction of our Scope 3 emissions, in line with SBTs. A company-specific description of the impact of climate-related supplier engagement according to the measure of success chosen: Together with Bonsucro we are working with suppliers of sugar (e.g. Mitr Phol) to increase sustainability performance of their sugarcane plants. Mitr Phol has been a supplier to Corbion since 2007, with more than 30,000 cane growers in its supply chain. Mitr Phol committed several years ago to promoting modern farming methods and technologies to its suppliers, using Bonsucro as a platform for collaboration, and guided by its Standards. Consequently, Mitr Phol Modern Farm was launched about six years ago to allow sugarcane farmers to see modern methods in action and learn how to implement them in their own operations. We have collaborated with them in several initiatives, such as adjusting the space between sugarcane plants and better controlling truck traffic. We have also implemented techniques for maintaining loosened soil, and a GPS system for controlling large agricultural machines. These initiatives provided Mitr Phol with several benefits, such as more efficient use of (water) resources and significantly reduced carbon emissions. In 2020 we partnered with Cargill and Practical Farmers of Iowa to develop a soil health program targeting corn growers in the sourcing region surrounding Corbion's manufacturing facility in Blair, Nebraska. The program is focused on the adoption of soil health practices, including no till, planting of cover crops, and nutrient management. It aims to reduce GHG emissions, increase soil organic matter, increase farmer resilience, improve water quality, and leverage technical assistance and farmer-farmer networks to drive change.

Comment

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

10

% total procurement spend (direct and indirect)

44

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

70

Rationale for the coverage of your engagement

Corbion has joined the Science Based Targets initiative and our Science Based target includes Scope III emissions related to key raw materials and transport. Our target covers ~70% of our Scope 3 emissions and we are currently engaging with these suppliers to raise awareness on climate change, the Paris agreement, Science Based Targets etc and to discuss opportunities for the suppliers to reduce their emissions. We have chosen suppliers of our 7 main raw materials for production because they are vital to our business. These materials are: lime, sugar, dextrose, soybean oil, palm oil, glycerine and sodium hydroxide.

Impact of engagement, including measures of success

A clear description of measures of success: When measuring success of our supplier engagement we mainly look at two indicators: 1) improvement of accuracy of emission factors and 2) reduction of own emissions by working with the suppliers. In other words: reduction of our Scope 3 emissions, in line with SBTs. A company-specific description of the impact of climate-related supplier engagement according to the measure of success chosen: In the past year, we have had detailed discussions with our sugar suppliers to better understand their background data and emission factors. We have received additional evidence, including the Bonsucro calculator and the Renovabio calculators (both are part of certification schemes and use specific input data to calculate the emission factor). This provided us a better understanding of the data quality (accuracy) of the emission factors. We have agreed to receive frequent updates, which will allow us to track the reduction of our Scope 3 emissions. In 2020 we partnered with Cargill and Practical Farmers of Iowa to develop a soil health program targeting corn growers in the sourcing region surrounding Corbion's manufacturing facility in Blair, Nebraska. The program is focused on the adoption of soil health practices, including no till, planting of cover crops, and nutrient management with the aim of reducing GHG emissions. Through this program we will collect data specific to our sourcing area that will allow us to better understand and calculate our GHG impact. Data collected through this program will also allow us to identify opportunities for scope 3 emissions reduction and track improvements.

Comment

C12.1b

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

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

% of customers by number

65

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

0

Portfolio coverage (total or outstanding)

<Not Applicable>

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

We are engaging with our customers in Meat, Biochemicals, and Bioplastics on the subject of carbon footprint reduction and the impact of Corbion products to help reduce our customers' carbon footprint. In Meat, a lot of food waste occurs and if this waste is landfilled, it results in significant GHG emissions. Corbion's solutions for shelf life extension offer a tool to extend shelf life and reduce Food waste. We selected this customer segment for engagement, because of the high carbon footprint of meat. With bioplastics/biochemical customers, climate change and carbon footprint reduction is always discussed to explain the opportunities for our customers to reduce their carbon footprint by replacing fossil-based materials/chemicals such as polystyrene by PLA which has a 77% lower carbon footprint compared to polystyrene. We selected these groups of customers for engagement because sustainability and carbon footprint reduction is a key element of our value proposition for these customers.

Impact of engagement, including measures of success

A clear description of measures of success: This engagement helps to increase customer retention and attract additional business. For the customer, it means a longer shelf-life of products which helps to reduce food waste. A measure of success for this business area is the amount of meat that is preserved with Corbion's solutions. A second measure of success that we use internally is the amount of avoided emissions. When this amount increases we consider it a success. A company-specific description of the impact of climate-related engagement strategy with your customers according to the measure of success chosen: Of the 263 million tonnes of meat produced globally over 20% is lost or wasted. Reducing global meat waste by 25% prevents the emissions of 170 million tons of CO2. We estimate that in 2019, Corbion products were used to preserve 5,482,000 tons of meat globally. We use the Guidelines for Accounting for and Reporting Greenhouse Gas (GHG) Emissions Avoided along the Value Chain based on Comparative Studies (https://www.icca-chem.org/wp-content/uploads/2017/12/ICCA-2017_Adressing_guidelines_WEB.pdf) to estimate the avoided emissions due to the use of PLA instead of polystyrene. We use as a case study the application of PLA for the production of single-use coffee cups to replace single-use cups based on polystyrene. Based on this, the avoided emissions related to the use of PLA amount to 123.968 tons of CO2 at full capacity of the PLA plant.

C12.1d

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

A clear explanation of who other partners in the value chain constitutes

Corbion is an active member of several multi-stakeholder initiatives, such as Bonsucro and NASPON (the North American Sustainable Palm Oil Network). Bonsucro is focusing on improving sustainability in the sugar cane industry, while NASPON promotes the uptake of RSPO certified palm oil in North America. We are also partnering with organizations, like Truterra, that provide support for implementing sustainability related solutions within a company's value chain.

A case study of your climate-related engagement strategy with other partners in the value chain

Thailand is one of the priority regions for Bonsucro and we have actively supported the awareness and implementation of the Bonsucro standard in Thailand. We have supported a white-paper together with PepsiCo to understand the main risks and opportunities (<http://www.corbion.com/base/DownloadHelper/DownloadFile/11179>), we have participated and presented at the Bonsucro week in Thailand in March 2019 and we participated in a stakeholder workshop in October 2019. As member of Bonsucro we also provided input to the ongoing update of the Bonsucro standard.

By joining NASPON, we are a member of the Derivatives working group. This working group aims to help improve communication tools and awareness of the use of palm oil derivatives in food. The ultimate goal is to improve the relevance of RSPO certification within the industry.

In terms of our soy sourcing, Corbion has partnered with Truterra, LLC, the sustainability business of Land O'Lakes and a leader in scaling-up private-sector conservation solutions. The Truterra™ Insights Engine allows farmers and downstream value chain partners to measure sustainability progress and trends in real time at field level. The digital platform creates a framework for continuous improvement while also benchmarking against yield and profitability, ensuring customized, scalable on-farm conservation and climate related solutions that both protect our natural resources and are good for the farmer. In 2020, the first 20,000 acres in Nebraska/Iowa were enrolled in this program.

C-AC12.2/C-FB12.2/C-PF12.2

(C-AC12.2/C-FB12.2/C-PF12.2) Do you encourage your suppliers to undertake any agricultural or forest management practices with climate change mitigation and/or adaptation benefits?

Yes

C-AC12.2a/C-FB12.2a/C-PF12.2a

(C-AC12.2a/C-FB12.2a/C-PF12.2a) Specify which agricultural or forest management practices with climate change mitigation and/or adaptation benefits you encourage your suppliers to undertake and describe your role in the implementation of each practice.

Management practice reference number

MP1

Management practice

Reducing energy use

Description of management practice

Corbion requests all cane sugar supplier to commit to our cane sugar code and we verify compliance through self-assessment questionnaires and audits. Our self-assessment and audit checklists includes an indicator on energy use for transportation and primary energy use. This indicator needs to be below a certain threshold.

Your role in the implementation

Procurement

Explanation of how you encourage implementation

We request the suppliers to define a corrective action plan in case of non-compliance. If the non-compliance remains, we may decide to end the relation with the supplier.

Climate change related benefit

Emissions reductions (mitigation)

Reduced demand for fossil fuel (adaptation)

Comment

Management practice reference number

MP2

Management practice

Fertilizer management

Description of management practice

Corbion requests all cane sugar supplier to commit to our cane sugar code and we verify compliance through self-assessment questionnaires and audits. Our self-assessment and audit checklists includes an indicator on fertilizer use.

Your role in the implementation

Procurement

Explanation of how you encourage implementation

We request the suppliers to define a corrective action plan in case of non-compliance. If the non-compliance remains, we may decide to end the relation with the supplier.

Climate change related benefit

Emissions reductions (mitigation)

Reduced demand for fertilizers (adaptation)

Comment

Management practice reference number

MP3

Management practice

Pest, disease and weed management practices

Description of management practice

Corbion requests all cane sugar supplier to commit to our cane sugar code and we verify compliance through self-assessment questionnaires and audits. Our self-assessment and audit checklists includes an indicator on pesticide use. This indicator needs to be below a certain threshold.

Your role in the implementation

Procurement

Explanation of how you encourage implementation

We request the suppliers to define a corrective action plan in case of non-compliance. If the non-compliance remains, we may decide to end the relation with the supplier.

Climate change related benefit

Reduced demand for pesticides (adaptation)

Comment

Management practice reference number

MP4

Management practice

Biodiversity considerations

Description of management practice

Corbion requests all cane sugar supplier to commit to our cane sugar code and we verify compliance through self-assessment questionnaires and audits. Our self-assessment and audit checklists includes indicators on biodiversity and soil conservation. Several specific requirements are checked (soil conservation plan, ground coverage by leafs etc, tilling, pH)

Your role in the implementation

Procurement

Explanation of how you encourage implementation

We request the suppliers to define a corrective action plan in case of non-compliance. If the non-compliance remains, we may decide to end the relation with the supplier.

Climate change related benefit

Increasing resilience to climate change (adaptation)

Comment

C-AC12.2b/C-FB12.2b/C-PF12.2b

(C-AC12.2b/C-FB12.2b/C-PF12.2b) Do you collect information from your suppliers about the outcomes of any implemented agricultural/forest management practices you have encouraged?

Yes

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Direct engagement with policy makers
- Trade associations
- Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Carbon tax	Support with minor exceptions	Corbion engaged with Dutch government and politicians on the Dutch climate deal which includes a CO2 price/tax mechanism.	We support the concept of carbon pricing if all emission scopes are taken into account and carbon leakage is prevented

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

VNCI (industry association)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The VNCI wants the industry and adjacent sectors to achieve a greenhouse gas emission reduction of 40% in 2030 compared to 2005. Key components to achieve this goal are the resources (biobased), the use of biomass and the use of waste as raw materials. Corbion's ambition to reduce our carbon footprint in line with Paris is more ambitious than the VNCI's reduction target.

How have you influenced, or are you attempting to influence their position?

Corbion is an active member of the VNCI and plays a role towards the position and vision of VNCI by participation in various working groups and membership of the VNCI board.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

Yes

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Corbion has a PA committee where all the activities of Corbion in trade associations and other memberships are monitored for alignment with the Corbion strategy. The committee aligns with the CEO and/or CSSO to make sure our activities have support at the highest level in our organization in order to ensure consistency with our strategy and across all the business levels. In case of engagement with policy makers, our CSSO is involved in the preparation and execution of all engagement activities and review of communication materials.

C12.4

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

Publication

In mainstream reports

Status

Complete

Attach the document

Corbion_annual_report_2020-gecomprimeerd.pdf

Page/Section reference

Pages 12-18 of our annual report cover our Strategy, including sustainability. Creating Sustainable growth is Corbion's main strategy tagline. This section also provides the main corresponding KPI's and targets (p. 16) Page 18 links the sustainability component to the whole value creation model of Corbion, showing that it is fully integrated into Corbion's business. Page 35 in the part of 'our performance' covers the emission figures and other corresponding metrics.

Content elements

Strategy
Emissions figures
Emission targets
Other metrics

Comment

C13. Other land management impacts

C-AC13.2/C-FB13.2/C-PF13.2

(C-AC13.2/C-FB13.2/C-PF13.2) Do you know if any of the management practices mentioned in C-AC12.2a/C-FB12.2a/C-PF12.2a that were implemented by your suppliers have other impacts besides climate change mitigation/adaptation?

Yes

C-AC13.2a/C-FB13.2a/C-PF13.2a

(C-AC13.2a/C-FB13.2a/C-PF13.2a) Provide details of those management practices implemented by your suppliers that have other impacts besides climate change mitigation/adaptation.

Management practice reference number

MP1

Overall effect

Positive

Which of the following has been impacted?

Soil
Water
Yield

Description of impacts

An example of the engagement with suppliers of sugar: The team • Mitr Phol, the world's fourth-largest sugar producer • Bonsucro, an international not-for-profit, multi-stakeholder organization promoting sustainable practices in the sugar-cane industry • Corbion, the global market leader in lactic acid and lactic acid derivatives The project The sugarcane industry is critical to Thailand's economy. Mitr Phol has been a supplier to Corbion since 2007, with more than 30,000 cane growers in its supply chain. Mitr Phol committed several years ago to promoting modern farming methods and technologies to its suppliers, using Bonsucro as a platform for collaboration, and guided by its Standards. Consequently, Mitr Phol Modern Farm was launched about five years ago to allow sugarcane farmers to see modern methods in action and learn how to implement them in their own operations. The outcome Sustainability gains: Adjusting the space between sugarcane plants and better controlling truck traffic is reducing crop losses. Techniques for maintaining loosened soil, and a GPS system for controlling large agricultural machines are being used. Water is used more efficiently while increasing production. When not growing sugarcane, farmers grow legumes to cut pesticide use and improve soil quality. Cane leaves are left on the ground instead of burned to better retain soil moisture and reduce global warming. The experience The company received the Bonsucro Sustainability Award in 2015. The future With Corbion working to drive demand for responsibly produced cane sugar and Mitr Phol supporting farmers' efforts to meet that demand, we are strengthening the sustainability of the overall value chain.

Have any response to these impacts been implemented?

No

Description of the response(s)

Management practice reference number

MP2

Overall effect

Positive

Which of the following has been impacted?

Soil

Water
Yield

Description of impacts

TruTerra An example of the engagement for soy: The team • Truterra, the sustainability business of Land O'Lakes and a leader in scaling-up private-sector conservation solutions. • Corbion, the global market leader in lactic acid and lactic acid derivatives The project To promote sustainable agriculture for the production of soy, we partnered with Truterra, LLC, the sustainability business of Land O'Lakes and a leader in scaling-up private-sector conservation solutions. The Truterra™ Insights Engine allows farmers and downstream value chain partners to measure sustainability progress and trends in real time at field level. The digital platform creates a framework for continuous improvement while also benchmarking against yield and profitability, ensuring customized, scalable on-farm conservation solutions that both protect our natural resources and are good for the farmer. The outcome Our collaboration with Truterra focuses on implementing regenerative agriculture practices such as cover crops, no or reduced tillage, and managed livestock grazing. These practices will have impacts on reducing GHG emissions as well as improving overall soil health, water and yield. Cover crops and no-till agriculture will help reduce soil erosion and improve water infiltration. Managed livestock grazing allows more nutrients to cycle from crop to the soil. These expect the benefits gain from implementing regenerative agriculture practices to improve yields in our sourcing area. The future The collaboration begun in 2020, and we will continue to work with Truterra and its partners to promote the implementation of regenerative agriculture practices in our soy sourcing area while using the Truterra Insights Engine to identify opportunities and track improvements.

Have any response to these impacts been implemented?

No

Description of the response(s)

Management practice reference number

MP3

Overall effect

Positive

Which of the following has been impacted?

Soil
Water
Yield

Description of impacts

Cargill collaboration An example of the engagement for corn: The team • Cargill, global food company combining 153 years of experience with new technologies and insights to serve as a trusted partner for food, agriculture, financial and industrial customers. • Corbion, the global market leader in lactic acid and lactic acid derivatives • Practical Farmers of Iowa, organization focused equipping farmers to build resilient farms and communities. The project Launched in 2020, our partnership with Cargill and Practical Farmers of Iowa focuses on developing a soil health program targeting corn growers in the sourcing region surrounding Corbion's manufacturing facility in Blair, Nebraska. The program is focused on the adoption of soil health practices. The outcome The soil health practices included in this project include no till, planting of cover crops, and nutrient management. In addition to reducing GHG emissions, we expect to see several benefits including an increase of soil organic matter, improvements in water quality and infiltration, and yield. There is also a focus on increasing farmer resilience and leverage technical assistance and farmer-farmer networks to drive change. The future The collaboration begun in 2020, and we will continue to work with Cargill and Practical Farmers of Iowa to implement soil health practices and track improvements.

Have any response to these impacts been implemented?

No

Description of the response(s)

C15. Signoff

C-FI

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

C15.1

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

	Job title	Corresponding job category
Row 1	Chief Executive Officer (CEO)	Chief Executive Officer (CEO)

SC. Supply chain module

SC0.0

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

Corbion's strategy and all aspects of our operations are built around advancing sustainability underpinned by high ethical standards, whether this relates to the management of our global supply chain, responsible procurement of our raw materials, or the safety and well-being of our people.

SC0.1

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

	Annual Revenue
Row 1	986500000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

No

SC1.1

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

Requesting member

International Flavors & Fragrances Inc.

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

247.7

Uncertainty (±%)

0

Major sources of emissions

Burning of natural gas for steam production

Verified

Yes

Allocation method

Allocation based on the volume of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

International Flavors & Fragrances Inc.

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

128.4

Uncertainty (±%)

0

Major sources of emissions

Use of electricity

Verified

Yes

Allocation method

Allocation based on the volume of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

International Flavors & Fragrances Inc.

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

2277.1

Uncertainty (±%)

Major sources of emissions

Purchased goods and services, transportation, waste, indirect energy related emissions

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Johnson & Johnson

Scope of emissions

Scope 1

Allocation level

Facility

Allocation level detail

Corbion provides input to Johnson & Johnson from our site in Gorinchem, the Netherlands.

Emissions in metric tonnes of CO2e

4.3

Uncertainty (±%)

0

Major sources of emissions

Burning of natural gas for steam production

Verified

Yes

Allocation method

Allocation based on the volume of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Johnson & Johnson

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Corbion provides input to Johnson & Johnson from our site in Gorinchem, the Netherlands.

Emissions in metric tonnes of CO2e

2.2

Uncertainty (±%)

0

Major sources of emissions

Use of electricity

Verified

Yes

Allocation method

Allocation based on the volume of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Johnson & Johnson

Scope of emissions

Scope 3

Allocation level

Facility

Allocation level detail

Corbion provides input to Johnson & Johnson from our site in Gorinchem, the Netherlands.

Emissions in metric tonnes of CO₂e

39.8

Uncertainty (±%)**Major sources of emissions**

Purchased goods and services, transportation, waste, indirect energy related emissions

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Kellogg Company

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

1027.2

Uncertainty (±%)

0

Major sources of emissions

Burning of natural gas for steam production

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Kellogg Company

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

532.5

Uncertainty (±%)

0

Major sources of emissions

Use of electricity

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Kellogg Company

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

9441.4

Uncertainty (±%)**Major sources of emissions**

Purchased goods and services, transportation, waste, indirect energy related emissions

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Stearinerie Dubois

Scope of emissions

Scope 1

Allocation level

Facility

Allocation level detail

Corbion provides input to Stearinerie Dubois from our site in Montmélo, Spain

Emissions in metric tonnes of CO2e

2.35

Uncertainty (±%)

0

Major sources of emissions

Burning of natural gas for steam production

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Stearinerie Dubois

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Corbion provides input to Stearinerie Dubois from our site in Montmélo, Spain

Emissions in metric tonnes of CO2e

1.22

Uncertainty (±%)

0

Major sources of emissions

Use of electricity

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Stearinerie Dubois

Scope of emissions

Scope 3

Allocation level

Facility

Allocation level detail

Corbion provides input to Stearinerie Dubois from our site in Montméló, Spain

Emissions in metric tonnes of CO2e

21.57

Uncertainty (±%)

Major sources of emissions

Purchased goods and services, transportation, waste, indirect energy related emissions

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Marfrig Global Foods S/A

Scope of emissions

Scope 1

Allocation level

Facility

Allocation level detail

Corbion provides input to Marfrig Global Foods S/A from our site in Campos, Brazil

Emissions in metric tonnes of CO2e

18.3

Uncertainty (±%)

0

Major sources of emissions

Burning of natural gas for steam production

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Marfrig Global Foods S/A

Scope of emissions

Scope 2

Allocation level

Facility

Allocation level detail

Corbion provides input to Marfrig Global Foods S/A from our site in Campos, Brazil

Emissions in metric tonnes of CO2e

9.5

Uncertainty (±%)

0

Major sources of emissions

Use of electricity

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

Marfrig Global Foods S/A

Scope of emissions

Scope 3

Allocation level

Facility

Allocation level detail

Corbion provides input to Marfrig Global Foods S/A from our site in Campos, Brazil

Emissions in metric tonnes of CO2e

168.3

Uncertainty (±%)

Major sources of emissions

Purchased goods and services, transportation, waste, indirect energy related emissions

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

Corbion follows the GHG protocol. These are the major sources of emissions.

Requesting member

WestRock Company

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

0

Uncertainty (±%)

0

Major sources of emissions

No products have been purchased by Westrock company from Corbion in 2020

Verified

Yes

Allocation method

Allocation based on mass of products purchased

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

No products have been purchased by Westrock company from Corbion in 2020

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

<https://annualreport.corbion.com/annual-report-2020/at-a-glance>

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
We face no challenges	no challenges

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

We made a bold statement about our commitment to sustainability by pledging to cut our CO2 emissions related to energy, key raw materials, and transport by 33% per metric ton of product by 2030 from a 2016 base year. The proposed target has received approval by the Science Based Targets initiative (SBTi) following a thorough validation process. As a sustainable ingredients company, Corbion is already deeply involved in developing sustainable solutions that help our customers shrink their carbon footprint by reducing food waste and their use of fossil-based chemicals.

To fulfil this pledge, we have developed a roadmap, including the following actions, some of which are already in motion: Transition to 100% renewable electricity by 2030. Implement energy-saving projects at our manufacturing sites. Select the most energy-efficient technology available when equipment is replaced. Establish an R&D program to identify opportunities for heat integration, electrification, and recycling. Partner with key raw material suppliers to jointly reduce CO2 emissions. Review the financial impact of greenhouse gas emissions through internal carbon pricing in capital expenditure and long-term R&D projects. Compared to the base year 2016, we already achieved an 11% reduction, mainly through the implementation of renewable electricity, which has step-wise increased since 2016 and is currently at 71%.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

Requesting member

Kellogg Company

Group type of project

Reduce Logistics Emissions

Type of project

Other, please specify (We are open to explore opportunities)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings

Estimated payback

Other, please specify (Unable to predict at this stage)

Details of proposal

Our Science Based Target includes the reduction of transport-related emissions. We are currently investigating opportunities, among others to reduce the CO2 emissions related to road transport in the US and we are open to explore a joint initiative in this space.

Requesting member

International Flavors & Fragrances Inc.

Group type of project

Change to supplier operations

Type of project

Increased levels of purchased renewable energy

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

3-5 years

Estimated lifetime CO2e savings

Estimated payback

Cost/saving neutral

Details of proposal

Our plant in Gorinchem currently is 85% renewable, we plan to increase it to 100% in the next 4 years. We are open to explore collaboration on PPAs.

Requesting member

Johnson & Johnson

Group type of project

Change to supplier operations

Type of project

Implementation of energy reduction projects

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

3-5 years

Estimated lifetime CO2e savings

Estimated payback

3-5 years

Details of proposal

We have a long term roadmap to reduce our carbon footprint in line with the Paris agreement and to achieve our Science-based target. For our direct operations, this roadmap includes investment in energy efficiency projects, such as heat integration, equipment upgrading etc.

Requesting member

Marfrig Global Foods S/A

Group type of project

Reduce Logistics Emissions

Type of project

Other, please specify (We are open to explore opportunities)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings**Estimated payback**

Other, please specify (Unable to predict at this stage)

Details of proposal

Our Science Based Target includes the reduction of transport-related emissions. We are currently investigating opportunities, among others to reduce the CO2 emissions related to road transport in Brazil and we are open to explore a joint initiative in this space.

Requesting member

Stearinerie Dubois

Group type of project

Reduce Logistics Emissions

Type of project

Other, please specify (We are open to explore opportunities)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

1-3 years

Estimated lifetime CO2e savings**Estimated payback**

Other, please specify (Unable to predict at this stage)

Details of proposal

Our Science Based Target includes the reduction of transport-related emissions. We are currently investigating opportunities, among others to reduce the CO2 emissions related to road transport in Europe and we are open to explore a joint initiative in this space.

Requesting member

Johnson & Johnson

Group type of project

Change to supplier operations

Type of project

Increased levels of purchased renewable energy

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

3-5 years

Estimated lifetime CO2e savings**Estimated payback**

Cost/saving neutral

Details of proposal

Our plant in Gorinchem currently is 85% renewable, we plan to increase it to 100% in the next 4 years. We are open to explore collaboration on PPAs.

Requesting member

Kellogg Company

Group type of project

Change to supplier operations

Type of project

Other, please specify (Reducing emissions by implementing sustainable agricultural practices)

Emissions targeted

Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized

3-5 years

Estimated lifetime CO2e savings

Estimated payback

Cost/saving neutral

Details of proposal

We have a long term roadmap to reduce our carbon footprint in line with the Paris agreement and to achieve our Science-based target. For our emulsifiers, this includes actions related to palm oil and soy bean oil. For palm oil, we focus on RSPO certification. For soy bean oil, we are investigating innovation projects in the US to reduce emissions and increase carbon capture in soils. We are open to discuss opportunities for collaboration.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain questions?
I am submitting my response	Investors Customers	Public	Yes, I will submit the Supply Chain questions now

Please confirm below

I have read and accept the applicable Terms