Welcome to your CDP Climate Change Questionnaire 2023

C0. Introduction

C0.1

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

W. R. Grace & Co.-Conn. is engaged in the production and sale of specialty chemicals and specialty materials on a global basis through two reportable business segments: Grace Catalysts Technologies, which includes catalysts and related products and technologies used in refining, petrochemical and other chemical manufacturing applications; and Grace Materials Technologies, which includes specialty materials, including silica-based and silica-alumina-based materials, used in consumer/pharma, chemical process, and coatings applications.

W. R. Grace & Co.-Conn delivers value through performance. Our catalysts and specialized silicas improve the products and processes of many of the world's best companies. Through world-class knowhow, collaboration, and experience, we help customers in 70 countries achieve some of their most important goals, from high-performing products and high-productivity manufacturing, to improved efficiency, sustainability, and profitability.

C0.2

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

Reporting year

Start date

January 1, 2022

End date

December 31, 2022

Indicate if you are providing emissions data for past reporting years

Yes

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

1 year

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

1 year

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

1 year

C0.3

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

Brazil
Canada
Germany
Malaysia
Philippines
Republic of Korea
Spain
Sweden
United States of America

C0.4

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

USD

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.

Operational control

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

Other, please specify

Specialty Materials, Active Pharmaceutical Ingredient

C0.8

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

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, another unique identifier, please specify D&B Number	61-296-7141

C1. Governance

C1.1

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

Yes

C1.1a

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

Position of individual or committee	Responsibilities for climate-related issues
Board Chair	W. R. Grace & Co.-Conn, the operating unit of W. R. Grace & Co., is governed by a 4-member board of directors comprised of selected members of our leadership team. Several of these members hold multiple roles for the corporation, resulting in multiple selections of individuals/committees for this question. The board, with the support of the full leadership team, has assumed responsibility for all issues for W. R. Grace & Co.-Conn, including climate-related issues. The board addresses those issues as they rise to the level of material significance to the corporation. One example of a decision made in 2022 was the continuation of a capital budget in 2022 for Sustainability related investments in Grace's operating plants.
Director on board	W. R. Grace & Co.-Conn, the operating unit of W. R. Grace & Co., is governed by a 4-member board of directors comprised of selected members of our leadership team. Several of these members hold multiple roles for the corporation, resulting in multiple selections of individuals/committees for this question. The board, with the support of the full leadership team, has assumed responsibility for all issues for W. R. Grace & Co.-Conn, including climate-related issues. The board addresses those issues as they rise to the level of material

	significance to the corporation. One example of a decision made in 2022 was the continuation of a capital budget in 2022 for Sustainability related investments in Grace's operating plants.
Chief Executive Officer (CEO)	W. R. Grace & Co.-Conn, the operating unit of W. R. Grace & Co., is governed by a 4-member board of directors comprised of selected members of our leadership team. Several of these members hold multiple roles for the corporation, resulting in multiple selections of individuals/committees for this question. The board, with the support of the full leadership team, has assumed responsibility for all issues for W. R. Grace & Co.-Conn, including climate-related issues. The board addresses those issues as they rise to the level of material significance to the corporation. One example of a decision made in 2022 was the continuation of a capital budget in 2022 for Sustainability related investments in Grace's operating plants.
Chief Financial Officer (CFO)	W. R. Grace & Co.-Conn, the operating unit of W. R. Grace & Co., is governed by a 4-member board of directors comprised of selected members of our leadership team. Several of these members hold multiple roles for the corporation, resulting in multiple selections of individuals/committees for this question. The board, with the support of the full leadership team, has assumed responsibility for all issues for W. R. Grace & Co.-Conn, including climate-related issues. The board addresses those issues as they rise to the level of material significance to the corporation. One example of a decision made in 2022 was the continuation of a capital budget in 2022 for Sustainability related investments in Grace's operating plants.
Chief Risk Officer (CRO)	W. R. Grace & Co.-Conn, the operating unit of W. R. Grace & Co., is governed by a 4-member board of directors comprised of selected members of our leadership team. Several of these members hold multiple roles for the corporation, resulting in multiple selections of individuals/committees for this question. The board, with the support of the full leadership team, has assumed responsibility for all issues for W. R. Grace & Co.-Conn, including climate-related issues. The board addresses those issues as they rise to the level of material significance to the corporation. One example of a decision made in 2022 was the continuation of a capital budget in 2022 for Sustainability related investments in Grace's operating plants.
Chief Government Relations Officer (CGRO)	W. R. Grace & Co.-Conn, the operating unit of W. R. Grace & Co., is governed by a 4-member board of directors comprised of selected members of our leadership team. Several of these members hold multiple roles for the corporation, resulting in multiple selections of individuals/committees for this question. The board, with the support of the full leadership team, has assumed responsibility for all issues for W. R. Grace & Co.-Conn, including climate-related issues. The board addresses those issues as they rise to the level of material significance to the corporation. One example of a decision made in 2022 was the continuation of a capital budget in 2022 for Sustainability related investments in Grace's operating plants.

General Counsel	W. R. Grace & Co.-Conn, the operating unit of W. R. Grace & Co., is governed by a 4-member board of directors comprised of selected members of our leadership team. Several of these members hold multiple roles for the corporation, resulting in multiple selections of individuals/committees for this question. The board, with the support of the full leadership team, has assumed responsibility for all issues for W. R. Grace & Co.-Conn, including climate-related issues. The board addresses those issues as they rise to the level of material significance to the corporation. One example of a decision made in 2022 was the continuation of a capital budget in 2022 for Sustainability related investments in Grace's operating plants.

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	Please explain
Sporadic - as important matters arise	Reviewing and guiding annual budgets Overseeing major capital expenditures Overseeing acquisitions, mergers, and divestitures Reviewing innovation/R&D priorities Reviewing and guiding strategy Overseeing and guiding scenario analysis Monitoring progress towards corporate targets Overseeing and guiding public policy engagement Reviewing and guiding the risk management process	

C1.1d

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

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues
Row 1	Yes	Significant number of years engaged in management of chemical operations, both at Grace and at former companies.

C1.2

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

Position or committee

Chief Executive Officer (CEO)

Climate-related responsibilities of this position

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

Coverage of responsibilities

Reporting line

Reports to the board directly

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

As important matters arise

Please explain

The CEO is responsible for supporting all climate-related decisions made by the enterprise.

Position or committee

President

Climate-related responsibilities of this position

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

Coverage of responsibilities

Reporting line

CEO reporting line

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

As important matters arise

Please explain

The President of Global Operations is responsible for managing all major capital and/or operational expenditures related to climate aspects and impacts.

Position or committee

Other C-Suite Officer, please specify

SVP, Strategy, Planning and Sustainability

Climate-related responsibilities of this position

Managing annual budgets for climate mitigation activities

Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)

Integrating climate-related issues into the strategy

Conducting climate-related scenario analysis

Setting climate-related corporate targets

Assessing climate-related risks and opportunities

Managing climate-related risks and opportunities

Coverage of responsibilities

Reporting line

CEO reporting line

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

As important matters arise

Please explain

The SVP, Strategy, Planning and Sustainability is responsible for assessing and conveying climate related risks to the board of directors on an as needed basis.

The SVP, Strategy, Planning and Sustainability is responsible to the Grace Leadership Team (LT) which is composed of business presidents and representatives of all corporate functions. The LT is responsible for the strategic development, planning, and oversight of climate related issues throughout the organization.

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	

C1.3a

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

Entitled to incentive

Other C-Suite Officer

Type of incentive

Monetary reward

Incentive(s)

Bonus - % of salary

Performance indicator(s)

Reduction in emissions intensity
Energy efficiency improvement

Incentive plan(s) this incentive is linked to

Further details of incentive(s)

The SVP, Sustainability Planning and Sustainability is measured on performance based incentives on behavior change related indicators to include increased sustainability reporting capabilities across all corporate support functions and operational aspects of the corporation; Organizational alignment and reporting to disclosure frameworks such as Carbon Disclosure Project (CDP) and the Global Reporting Initiative (GRI) and the integration of sustainability practices within our global functions.

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

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	2	Grace evaluates its risks and opportunities with respect to climate change according to three separate time scales. Short-Term is 0-2 years. Our Enterprise-wide ERM process looks at a wide variety of risks including climate risks.
Medium-term	2	5	In evaluating potential policy initiatives related to transitional risks, Grace looks to a 2-5-year time horizon.
Long-term	5	20	Our refining technologies sector has looked at the IEA SDS scenario to 20 years.

C2.1b

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

At this time, W.R. Grace & Co. recognizes a 'substantive impact' in regard to climate-related issues as one that may significantly affect our profitability or business strategy . For example, risks associated with increased government regulations to limit carbon dioxide and other greenhouse gas emissions as a result of concern over climate change may result in increased compliance costs, capital expenditures, and other financial obligations for us. We rely on natural gas, diesel fuel and electricity in the manufacturing and distribution of our products. Legislation or regulation affecting these inputs could affect our profitability. In addition, climate change could affect our ability to procure needed commodities at the costs and in quantities we currently experience and may require us to make additional unplanned strategic changes or capital expenditures .

C2.2

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

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

Annually

Time horizon(s) covered

Short-term

Medium-term
Long-term

Description of process

Grace identifies and assesses risks through an Enterprise Risk Management (ERM) process. As part of this process Grace considers acute and chronic physical and transitional climate related risks across various timeframes. As part of this analysis we use internal and external data to identify climate related risks to our direct operations, upstream, supply chain, and downstream customers. Our businesses incorporate best practices to manage high-priority risks as relevant to the business.

An example of how the described process is applied to physical risks would be that we assess the risk of changing weather patterns on our operational resiliency and are taking proactive measures to prevent disruptions. For example, severe weather conditions brought by climate change have the potential to cause significant flooding events in some Grace facilities especially those which have short distance from coastline. These types of occurrences can negatively affect our manufacturing, logistics, information technology, and communications functions. However, we have leveraged technology and e-commerce tools to make our operations more resilient and allow us to better respond to potential disruptions around the world. An example of how the described process is applied to physical risks, would be that we assess the risk of changing weather patterns on our operational resiliency and are taking proactive measures to prevent disruptions. For example, severe weather conditions brought by climate change have the potential to cause significant flooding events in some Grace facilities especially those which have short distance from the coastline. These types of occurrences can negatively affect our manufacturing, logistics, information technology, and communications functions. However, we have leveraged technology and e-commerce tools to make our operations more resilient and allow us to better respond to potential disruptions around the world.

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	Grace is directly affected by current and emerging regulations targeting energy consumption. Access to consistent and reliable energy sources is essential to Grace's production processes. Regulations impacting energy availability, reliability, and costs can result in excess burdens on our ability to produce products meeting our customers' sustainability endpoints. For example, several of Graces facilities are regulated under the EU ETS. Changes in the prices of emission credits can have a significant impact on production costs at those facilities. Grace continues to

		monitor the projected costs of emission credits and develop strategies to mitigate these impacts through efficiency upgrades and capital projects.
Emerging regulation	Relevant, always included	The expansion of carbon pricing mechanisms which may create an implicit cost of carbon at regional, national, and international levels are regularly monitored and evaluated. Mechanisms including carbon markets and taxes that may have impacts to the cost of goods sold are routinely evaluated for potential impacts to our operations and those of our upstream and downstream value chain partners. For example, the expansion of carbon pricing mechanisms in North America could potentially lead to higher operational costs to Grace based for emissions that may be covered under that system.
Technology	Relevant, sometimes included	Changes in technologies that includes alternative uses for existing energy sources such as advanced electrification technologies or the continued development and adoption of newer fuel sources including green hydrogen and oxygen may create significant shifts in the competitive environment of the chemical industry. These shifts may create the need for additional investment in capital projects and process optimization to maintain a competitive advantage. Grace has a team of experts charged with advancing the sustainability of our processes including the evaluation, assessment, and scale up of these technologies. For example, Grace has been monitoring new developments in energy management and carbon capture and storage technologies. These technologies are assessed using a stage gate process that incorporates the feasibility of implementation and financial impact. As another example, governments have begun mandating the adoption of biodiesels to reduce GHG emissions and achieve energy independence. In order for the technology to become more widespread, scientists must continue to search for ways to make biodiesel manufacturing more efficient and sustainable from both an environmental and economic perspective. TRISYL® silica helps the biodiesel industry achieve higher process efficiency and sustainability by increasing process yield and reducing environmental footprint. The TRISYL® silica-pretreated feedstock can generate 60–90% less solid waste than a comparable clay adsorbent process.

Legal	Relevant, always included	Grace is directly affected by current and emerging regulations targeting energy consumption. Access to consistent and reliable energy sources is essential to Graces production processes. Regulations impacting energy availability, reliability, and costs can result in excess burdens on our ability to produce products meeting our customers sustainability endpoints. For example, several of Graces facilities are regulated under the EU ETS. Changes in the prices of emission credits can have a significant impact on production costs at those facilities. Grace continues to monitor the projected costs of emission credits and develop strategies to mitigate these impacts through efficiency upgrades and capital projects.
Market	Relevant, sometimes included	Grace has been a long-term key strategic supplier to the world's leading energy, petrochemical, and industrial companies. Our products are highly integrated into our customers manufacturing processes including Refining Technologies, Chemical Processing, Plastics and Polymers, Coatings, Pharmaceutical and Nutracautical, Personal Care, Food and Beverage, and Biofuels. Changes in market pressures including consumer preferences may require changes in Grace's product portfolio. Some of these changes may be driven by climate-related regulations, consumer preferences, acute and/or chronic impacts. For example, the pace of electrification for light and heavy duty vehicle fleets globally is regularly monitored as EV pathways are seen as a key pathway to meeting a 2*C target within National Emission Budgets by Governments. Increased adoption of EVs is in part being driven by Governmental Targets and programs such as EIA EV30@30 and UKs Green Industrial Revolution Plan which bans the sale of new diesel and petrol LDVs by 2025. The challenges associated with utility capacity and distribution infrastructure as well as global raw material requirements for battery production, and the need for continued light weighting will impact several of Graces businesses to varying degrees and causing a shift in CO2 emissions upstream. Grace regularly monitors developments in this area.
Reputation	Relevant, sometimes included	Consumer, investor, and governmental pressure on carbon neutrality and carbon footprint reduction to limit warming to well below 2*C or 1.8*C is pushing companies to evaluate the carbon footprint of their operations (Scope 1 and Scope 2) and those of their value chain partners (Scope 3). A substantial portion of an organizations Greenhouse Gas emissions within the manufacturing, pharmaceutical, and chemical industries are Scope 3 emissions. These sectors represent most of Grace's upstream and downstream value chain

		partners placing increased emphasis on our ability to deliver products that meet or exceed our value chains requirements. Changes in the expectations of our value chain partners are monitored at the enterprise level and integrated into our business, development, organizational, and operational planning processes. For example, the development of new products that meet our value chain partners sustainability endpoints undergo our Product Innovation and Strategic Marketing (PrISM) process.
Acute physical	Relevant, always included	Grace has several facilities located along the Gulf Coast of the United States which are occasionally subject to extreme weather events such as hurricanes and flooding. For example using a combination of our value chain partners and Graces own experience in responding to extreme weather events, these risks are routinely evaluated at both the enterprise and operational levels to ensure appropriate investments in the safety of our workforce and resiliency of our facilities and supply chain are made. Routine cross-functional scenario planning occurs on an annual basis to identify any potential impacts on the continuity of our operations and supply chain that may inhibit our ability to meet our customers expectations or impact the communities in which our facilities operate.
Chronic physical	Relevant, sometimes included	Grace has operations in 9 countries leveraging a global supply chain to deliver our products to customers around the world. The ability of Grace to produce and deliver its products relies on the availability of raw materials, regional energy distribution systems, and robust global transport networks. Grace conducts biennial risk and criticality reviews of the direct material providers for each of its businesses. These reviews assign “risk” scores to each of Grace’s strategic suppliers that incorporate a number of factors. Two of these factors are: Maturity of EHS and sustainability management systems. This assessment, conducted through EcoVadis, is evidence-based and requires suppliers to provide document verification of policies, practices and management systems, and performance related to a number of environmental issues, including climate resiliency and greenhouse gas management. Currently, suppliers representing 70% of Grace direct spend have completed an assessment. Of these suppliers, 78% are currently taking action on climate and greenhouse gases and 14% are part of the Science-Based Targets Initiative.

		Country of Origin and Supply Path Risk. Grace uses an AI-based risk assessment platform that assigns risk values to its supply country of origins, supply paths and major points of infrastructure. Among the risk indicators integrated are the probability of natural disasters such as extreme weather events at these locations. The probability calculation includes information related to changing climate patterns and the expected likelihood of extreme weather events such as wildlife fires and hurricanes and cyclones, in certain geographies. Grace also conducts a similar risk assessment for its carriers and their delivery routes through its fourth-party logistics provider Odyssey. Based on the total results of these risk and criticality assessments, Grace may take risk mitigating action with regard to the supplier, including seeking diversification and alternate qualification opportunities or assigning corrective actions through EcoVadis to the supplier to improve its own climate resiliency and greenhouse gas policies and management systems.

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

Emerging regulation

Carbon pricing mechanisms

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

Grace has 2 facilities covered by the EU-ETS. Changes to the EU Market Stability Reserve (MSR) to reduce emission allowances in the carbon market in line with proposed climate neutrality in the EU by 2050 and a net 55% reduction in GHG emissions by 2030 will require local companies like Grace to invest in new GHG reduction technology within its EU facilities. Grace has attributed 27% of its gross global Scope 1 emissions under EU-ETS.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

2,800,000

Potential financial impact figure – maximum (currency)

8,400,000

Explanation of financial impact figure

Under current carbon pricing within the revised EU ETS Directive, changes in emission allocation allowances may cause an increase in ETS certificate prices. ETS prices could increase by 30-60% over the mid-term. ETS prices could increase by 30-60% over the mid-term.

Cost of response to risk

10,000,000

Description of response and explanation of cost calculation

Grace is focused on reducing GHG emissions resulting from our operations through the optimization of energy efficiency through audited energy management systems, and improvement projects, as a means of reducing our spend under the EU-ETS. In addition to drive further reductions in GHG emissions and cost reduction under the EU-ETS we have begun implementing an assumed price of carbon in our capital planning process.

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 and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Improving our customers products: High octane fuels help today's complex, high-efficiency engines run effectively. High efficiency engines are more fuel efficient, burn cleaner, and reduce engine weight allowing automakers to have sufficient room for alternate drivetrains within hybrid vehicles. High efficiency engines are becoming more prevalent and are used in most plugin hybrid and hybrid vehicles today. Increasing fuel efficiency by 1.5% could save 7 billion gallons of gasoline annually by 2030. By improving our customers products. Grace's advanced FCC catalysts are specifically designed to preserve and boost octane content from a refinery enabling automobile fuel efficiency.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

300,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Grace estimates that its FCC catalysts account for roughly 18% of the worlds gasoline supply, and that octane boosting catalysts represent roughly roughly $300 mm in revenue.

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

This opportunity is part of today's business, no incremental costs are required to realize it.

Grace continues to invest in the development and acquisition of new fine chemicals and catalyst technologies that will continue to increase the yields of high octane fuels leveraging existing infrastructure and feedstocks. Grace continues to increase the activity of our catalysts giving downstream efficiency benefits to our customers.

Comment

C3. Business Strategy

C3.1

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

Row 1

Climate transition plan

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

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

Our strategy is significantly influenced by our assessment of climate risks and opportunities.

We have established emission goals that are aligned with a well below 2C scenario and are developing transition plans within the next 2 years to meet those goals.

A meaningful transition plan to align with a 1.5 C scenario would require significant societal-wide changes beyond our control. We will continue to monitor those developments that would enable us to have a realistic transition plan to 1.5 scenario. These developments are discussed during Quarterly meetings with our Board of Directors.

C3.2

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

	Use of climate-related scenario analysis to inform strategy
Row 1	Yes, qualitative and quantitative

C3.2a

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

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios IEA APS	Business division		Grace has identified several physical and transition risks with climate-related outcomes that are applicable to our business as a result of our climate-related scenario analysis. Specifically, acute physical risks related to more frequent and severe catastrophic weather events such as floods or hurricanes; chronic physical risks such as changing precipitation patterns and rising sea levels; and transition market risks such as demand for our products aimed at their use-phase efficiency, stricter environmental standards, or reduced greenhouse gas emissions. Chronic and acute physical impacts from climate change will likely be felt most tangibly over the long term under our modeling. Grace is taking the necessary steps today to evaluate and prepare our business to respond to these potential impacts. For example: we are using the WRI Aqueduct Tools (including Floods), utilizing scenarios embedded in the tool to assess potential risks to our facilities under

			various scenarios out to 2040. To ensure continuity of supply for our customers and the rest of our supply chain, we have created business continuity plans to redirect manufacturing operations to other facilities in the event of a severe weather event. Additionally, in 2020 we started assessing other chronic physical risks through our enterprise risk management process. Using this process, we will target resilience measures at our facilities to ensure the continuity of our operations in the future. Climate-related transition risks will likely be felt most tangibly over the short to medium term under our modeling as additional emphasis is placed on more energy efficient transportation, buildings, and industrial processes; all segments that Grace supports. For Example: our Refining Technologies group has assessed projected impacts using IEA Sustainable development scenarios and the resulting demand for refined products. We are expanding a similar analysis across other Grace business units. Grace is investing heavily in products that promote use-phase efficiency, and we have instituted and refined our Product Innovation and Strategic Marketing (PrISM) process to develop future products through this energy efficiency lens.
Transition scenarios IEA STEPS (previously IEA NPS)	Business division		Grace has identified several physical and transition risks with climate-related outcomes that are applicable to our business as a result of our climate-related scenario analysis. Specifically, acute physical risks related to more frequent and severe catastrophic weather events such as floods or hurricanes; chronic physical risks such as changing precipitation patterns and rising sea levels; and transition market risks such as demand for our products aimed at their use-phase efficiency, stricter environmental standards, or reduced greenhouse gas emissions. Chronic and acute physical impacts from climate change will likely be felt most tangibly over the long term under our modeling. Grace is taking the necessary steps today to evaluate and prepare our business to respond to these potential impacts. For example: we are using the WRI Aqueduct Tools (including Floods), utilizing scenarios embedded in the

			tool to assess potential risks to our facilities under various scenarios out to 2040. To ensure continuity of supply for our customers and the rest of our supply chain, we have created business continuity plans to redirect manufacturing operations to other facilities in the event of a severe weather event. Additionally, in 2020 we started assessing other chronic physical risks through our enterprise risk management process. Using this process, we will target resilience measures at our facilities to ensure the continuity of our operations in the future. Climate-related transition risks will likely be felt most tangibly over the short to medium term under our modeling as additional emphasis is placed on more energy efficient transportation, buildings, and industrial processes; all segments that Grace supports. For Example: our Refining Technologies group has assessed projected impacts using IEA Sustainable development scenarios and the resulting demand for refined products. We are expanding a similar analysis across other Grace business units. Grace is investing heavily in products that promote use-phase efficiency, and we have instituted and refined our Product Innovation and Strategic Marketing (PrISM) process to develop future products through this energy efficiency lens.

C3.2b

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

Row 1

Focal questions

What are the impacts of various future scenarios on the demand for liquid transportation fuels ?

Based on that, would be the estimated demand for FCC Catalysts and hydrocracking catalysts?

What catalytic and other specialty materials are expected to evolve as a result of the SDS analysis (transition to 1.5 world)?

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

Grace has referenced the IEA CPS and the well below 2C scenarios in assessing future product demand and estimate when peak demand for FCC catalysts might occur in the long term 5-20 year horizon).

Additionally, Grace has identified emerging technologies in catalysts and other specialty materials that will play an important role.

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	The value we deliver through customer-driven innovation increasingly is based on how we help our customers meet their sustainability goals. Grace products and technical services improve the efficiency of our customers' processes, reduce energy or water use, cut harmful emissions, conserve material inputs, and reduce waste. The rise in global automotive fuel economy standards is one example of a strategic decision in this area that has increased demand for lightweight materials for the automotive market, and thus increased demand for our high-performance polypropylene catalysts like Polytrak®. Grace's EnRich HT™ Catalysts enable drop-in biofuels that can be used in conventional engines and existing refining infrastructure to economically convert renewable feedstocks into transportation fuels. Products and services influenced by climate related risks and opportunities are being realized in short- and medium-term time horizons.
Supply chain and/or value chain	Yes	In our supply chain, Grace engages with suppliers on sustainability issues through its Responsible Sourcing Program. We assess the sustainability performance of our suppliers using a 3rd party supply chain ratings service. In 2022, suppliers representing approximately 70% of our direct material spend completed a supplier sustainability assessment. We incorporate these sustainability scores into our overall supplier risk assessment process and performance monitoring.

		We have made an evaluation of the following aspects with respect to climate change: Climate Change impacts to our supply chain and/or value chain, within the short-term time horizon, have been immaterial despite an increasing number of countries where our suppliers operate covered by either Carbon Tax or Carbon Market systems. Our supply chain continues to prove resilient to extreme weather events. However, one example of a strategic decision in this area is that some specific suppliers have been impacted by severe weather events that may potentially be associated with climate change.
Investment in R&D	Yes	Grace directs a large portion of its R&D investment to the development of technologies which increase the efficiency of our customers' operations and products. One example of a strategic decision in this area is that as our customers increasingly focus on climate impacts of their operations and products, we expect our investment in R&D to increase in this area in short- and medium-term time horizons.
Operations	Yes	We are subject to significant risks from both natural disasters and accidents such as fires, storms, and floods and other disruptive events. Some of our facilities may have been impacted by weather-related events which may be related to climate change. Grace has made specific investments in redundant systems to support uninterrupted operations at high-risk facilities. Another example of a strategic decision in this area is that some of our facilities have been impacted by emissions trading systems which have increased the costs associated with their operation. This has increased the focus on our productivity program to drive continuous improvement in operational efficiency in the short-term time horizon. In addition, we have established emission reduction goals for operations that are aligned with our long-term time horizon and are implementing plans to achieve those goals.

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 Direct costs Capital expenditures Capital allocation Acquisitions and divestments	Over the short-term time horizon, Grace has aligned our long-range plan based in part on increasingly strict environmental regulations including those related to greenhouse gases. By building on our competitive advantages in products that help our customers, Grace improves the performance and efficiency of their operations and supply products to end users to meet stricter fuel standards. Our projections for operating costs include the continued application and potential expansion of greenhouse gas regulatory programs impacting our manufacturing operations. Facilities subject to emissions trading system are included in the short- to medium-term horizons. Some of our facilities have been impacted by weather related events which may be related to climate change. Some of our facilities have been impacted by emissions trading systems, which have impacted the costs associated with their operation. This has increased the focus on our productivity program to drive continuous improvement in operational efficiency. Our financial plans include continued achievement of productivity gains at our facilities that will increase operational and energy efficiencies. In addition, climate change risks associated with extreme weather events have impacted capital expenditure decisions for some facilities along the coast and water ways. Our refining technologies group has assessed projected impacts on IEA Sustainable development scenario on the demand for refined products and associated future production needs of our FCC catalysts and hydrocracking catalysts. Grace's approach to M&A focuses on strategic fit with our businesses, and manufacturing capabilities, and alignment with the key drivers of our growth plan, including stricter application of environmental regulations by providing our customers with products that increase the efficiency of their operations and products.

C3.5

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

	Identification of spending/revenue that is aligned with your organization's climate transition
Row 1	No, but we plan to in the next two years

C4. Targets and performance

C4.1

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

Absolute target

C4.1a

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

Target reference number

Abs 1

Is this a science-based target?

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

Target ambition

Well-below 2°C aligned

Year target was set

2019

Target coverage

Company-wide

Scope(s)

Scope 1
Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Base year

2019

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

588,705

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

180,381

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

769,087

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

100

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

100

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

100

Target year

2029

Targeted reduction from base year (%)

22

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

599,887.86

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

604,159

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

156,318

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

760,477

Does this target cover any land-related emissions?

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

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

5.0886783467

Target status in reporting year

Underway

Please explain target coverage and identify any exclusions

Grace's emissions reduction target covers all manufacturing plants, corporate support offices, warehouses and mine. We have excluded leased offices and remediation sites from our target since their emissions have been calculated are below 5% of our manufacturing facilities.

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

Grace has set 22% global GHG Scope 1 and 2 emissions reduction target by 2029, from a 2019 baseline. This goal is broadly aligned with science-based target towards the well below 2C warming scenario. Grace internally monitors progress on all capital planning and productivity projects implemented at its facilities, which include projects focused on

reducing energy consumption and GHG emissions.

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

C4.2

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

No other climate-related targets

C4.3

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

Yes

C4.3a

(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	31	136
To be implemented*	102	0
Implementation commenced*	60	3,837
Implemented*	68	1,953
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 buildings

Other, please specify

Various energy efficiency initiative phases

Estimated annual CO2e savings (metric tonnes CO2e)

1,953

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

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

412,362

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

Payback period

11-15 years

Estimated lifetime of the initiative

21-30 years

Comment

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	Grace is focused on investments in the Grace Productivity program that lead to emissions reduction activities that both improve the bottom line and reduce the emissions intensity of our operations. Grace is also in the process of implementing a carbon price for capital projects and has already implemented an internal price of carbon for some of its operations subject to the EU-ETS.
Dedicated budget for other emissions reduction activities	Grace is focused on investments in the Grace Productivity program that lead to emissions reduction activities that both improve the bottom line and reduce the emissions intensity of our operations. Grace is also in the process of implementing a carbon price for capital projects and has already implemented an internal price of carbon for some of its operations subject to the EU-ETS.

Financial optimization calculations	Grace is focused on investments in the Grace Productivity program that lead to emissions reduction activities that both improve the bottom line and reduce the emissions intensity of our operations. Grace is also in the process of implementing a carbon price for capital projects and has already implemented an internal price of carbon for some of its operations subject to the EU-ETS.
Internal price on carbon	Grace is focused on investments in the Grace Productivity program that lead to emissions reduction activities that both improve the bottom line and reduce the emissions intensity of our operations. Grace is also in the process of implementing a carbon price for capital projects and has already implemented an internal price of carbon for some of its operations subject to the EU-ETS.

C4.5

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

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify

Grace has utilized the SASB definition of products designed for use phase efficiency to classify products according to climate change related benefits.

Type of product(s) or service(s)

Other

Other, please specify

Octane boosting catalysts

Description of product(s) or service(s)

Grace has refined its product innovation and strategic marketing process to develop new products by looking holistically at the value proposition of products under

development, including the environmental and energy impacts and benefits associated with their manufacture as well as their use, to more comprehensively enhance sustainability in the value we deliver. Products in this category enable our customers to be more efficient, requiring fewer resources and energy per unit of production.

For example: High octane fuels help today's complex, high-efficiency engines run effectively. High efficiency engines are more fuel efficient, burn cleaner, and reduce engine weight allowing automakers to have sufficient room for alternate drivetrains within hybrid vehicles. High efficiency engines are becoming more prevalent and are used in most plugin hybrid and hybrid vehicles today. Increasing fuel efficiency by 1.5% could save 7 billion gallons of gasoline annually by 2030. By improving our customers products. Grace's advanced FCC catalysts are specifically designed to preserve and boost octane content from a refinery enabling automobile fuel efficiency.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

Reference product/service or baseline scenario used

Life cycle stage(s) covered for the reference product/service or baseline scenario

Use stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

38,700,000

Explain your calculation of avoided emissions, including any assumptions

Grace estimates that is FCC catalysts account for roughly 18% of the worlds gasoline supply, and that octane boosting catalysts enable emission savings 38.7 million metric tons of CO2 per year.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

11

C5. Emissions methodology

C5.1

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

No

C5.1a

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

Row 1

Has there been a structural change?

Yes, an acquisition

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

Fine Chemistry Services (from Albamarle)

Details of structural change(s), including completion dates

On February 25, 2021, Grace entered into a definitive agreement to acquire the Fine Chemistry Services business of Albemarle Corporation(“Albemarle”).

C5.1b

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

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in boundary	Grace emissions boundary did not change in 2022 compared to 2021. However, there was a structural change due to acquisition in 2021. This year’s submissions includes a re-calculation of our base year (2019) emissions associated with that acquisition.

C5.1c

(C5.1c) Have your organization’s base year emissions and past years’ emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?

	Base year recalculation	Scope(s) recalculated	Base year emissions recalculation policy, including significance threshold	Past years’ recalculation

Row 1	Yes	Scope 1 Scope 2, location-based Scope 2, market-based	Grace may experience acquisitions or divestitures as part of its broader growth strategy. Per the guidance outlined by the WRI GHG Protocol, Grace can backcast emission calculations to account for changes to the organizational footprint. This enables Grace to more accurately demonstrate emissions reduction strategies over time as they experience inorganic growth. As new acquisitions and divestitures occur, Grace can update the 2019 base year inventory to mirror present day operations so long as the acquired operations existed in the inventories base year. For example, if the acquired company did not exist in 2019, its emissions cannot be included in the baseline inventories emissions. Backcasting is only completed when the cumulative impact from all acquired or divested facilities is greater than 5% of the GHG Inventory CO2e emissions. Grace emissions boundary did not change in 2022 compared to 2021. However, there was a structural change due to acquisition in 2021. This year's submission includes a re-calculation of our base year (2019) emissions associated with that acquisition.	No

C5.2

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

Scope 1

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

588,705.45

Comment

Grace has re-calculated its base year Scope 1 emissions to account for the acquisition of its South Haven and Tyrone facilities in 2021.

Grace's base year emissions includes its manufacturing facilities, corporate support offices, warehouse and mine. We have excluded leased offices and remediation sites from our base year emissions since their emissions have been calculated are below 5% of our manufacturing facilities.

Scope 2 (location-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

180,381.86

Comment

Grace has re-calculated its base year Scope 2 (location-based) emissions to account for the acquisition of its South Haven and Tyrone facilities in 2021.

Grace's base year emissions includes its manufacturing facilities, corporate support offices, warehouse and mine. We have excluded leased offices and remediation sites from our base year emissions since their emissions have been calculated are below 5% of our manufacturing facilities.

Scope 2 (market-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

190,914.98

Comment

Grace has re-calculated its base year Scope 2 (market-based) emissions to account for the acquisition of its South Haven and Tyrone facilities in 2021.

Grace's base year emissions includes its manufacturing facilities, corporate support offices, warehouse and mine. We have excluded leased offices and remediation sites from our base year emissions since their emissions have been calculated are below 5% of our manufacturing facilities.

Scope 3 category 1: Purchased goods and services

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

1,107,132.8

Comment

The WRI/Quantis Evaluator Tool (“Tool”) aligns with the Greenhouse Gas Protocol ‘spend-based’ method to calculate an initial screen of Scope 3 upstream emissions, with industry-average emissions factors applied based on the economic value of the goods and services. This Tool is intended to ONLY provide “a first, rough approximation” of Scope 3 emissions and has several documented limitations, including a time-limited and aggregate use of price-adjustments as well as a reliance on spend data as the emissions calculation basis.

Spend data is broken down according to Grace’s internal accounting and allocated to the most appropriate product group category available within the Quantis Tool. The corresponding emissions factors from the Quantis tool are then applied to calculate an overall emissions estimate for this category.

The Scope 3 results using a cost-based approach is intended to be illustrative and is highly influenced by general market conditions such as inflation and should not be interpreted as a specific indicator of supply chain emissions performance. To help account for inflation in the most recent reporting cycle, we applied an index-based approach to the raw material purchases with 2020 as the baseline.

We have provided 2022 purchased goods and services spend as input.

Scope 3 category 2: Capital goods

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

65,176.75

Comment

The WRI/Quantis Evaluator Tool (“Tool”) aligns with the Greenhouse Gas Protocol ‘spend-based’ method to calculate an initial screen of Scope 3 upstream emissions, with industry-average emissions factors applied based on the economic value of the goods and services. This Tool is intended to ONLY provide “a first, rough approximation” of Scope 3 emissions and has several documented limitations, including

a time-limited and aggregate use of price-adjustments as well as a reliance on spend data as the emissions calculation basis.

Spend data is broken down according to Grace's internal accounting and allocated to the most appropriate product group category available within the Quantis Tool. The corresponding emissions factors from the Quantis tool are then applied to calculate an overall emissions estimate for this category.

The Scope 3 results using a cost-based approach is intended to be illustrative and is highly influenced by general market conditions such as inflation and should not be interpreted as a specific indicator of supply chain emissions performance. To help account for inflation in the most recent reporting cycle, we applied an index-based approach to the raw material purchases with 2020 as the baseline.

The Grace team has provided 2022 capital goods spend as input.

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

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

152,059.71

Comment

The Scope 3 Evaluator tool utilizes total scope 1 and 2 emissions to estimate the emissions associated with Category 3. The Grace team provided total scope 1 and 2 emissions from the 2022 greenhouse gas inventories as input.

Scope 3 category 4: Upstream transportation and distribution

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

Comment

Grace's suppliers deliver purchased goods to Grace directly and it is common that the cost for delivering goods is included in the cost of goods. Therefore, emissions from upstream transportation and distribution cannot be determined as a separate category and are captured in Category 1 (Purchased Goods & Services).

Scope 3 category 5: Waste generated in operations

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

24,898.42

Comment

The Scope 3 Evaluator tool utilizes total waste management spend to estimate the emissions associated with Category 5. The Grace team provided total 2022 waste management spend as input.

Scope 3 category 6: Business travel

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

785.1

Comment

The Scope 3 Evaluator tool utilizes total emissions associated with third party business travel as a direct input for emissions associated with Category 6. Grace employs Concur as a third-party service to facilitate third-party business travel and as such, Concur provided emissions associated with all air travel as input.

Scope 3 category 7: Employee commuting

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

6,290

Comment

The Scope 3 Evaluator tool utilizes total employee headcount to estimate the emissions associated with Category 7. The Grace team provided total headcount for input.

Scope 3 category 8: Upstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

WR Grace does not have any upstream leased assets and therefore this category is not relevant.

Scope 3 category 9: Downstream transportation and distribution

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

5,947.66

Comment

Grace employs Odyssey as a third-party service to provide downstream logistics and as such, Odyssey provided emissions associated with downstream logistics.

Scope 3 category 10: Processing of sold products

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

2,468,658

Comment

The Scope 3 Evaluator tool utilizes total weight of product to estimate the emissions associated with Category 10. This approach represents a change of methodology from 2020 when we estimated only a portion of our business.

Beginning 2021, we used total Grace production volume as input to estimate Category 10 emissions, while total Grace revenue (including ART) was used to estimate Category 12 emissions. We have re-calculated our 2020 Category 10 and 12 emissions using this methodology.

Scope 3 category 11: Use of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

At this time we are unable to calculate the emissions reductions attributed to the use of our products.

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

Base year start

January 1, 2020

Base year end

December 31, 2020

Base year emissions (metric tons CO2e)

226,979

Comment

The Scope 3 Evaluator tool utilizes total revenue to estimate the emissions associated with Category 12. This approach represents a change of methodology from 2020 when we estimated only a portion of our business.

Beginning 2021, we used total Grace production volume as input to estimate Category 10 emissions, while total Grace revenue (including ART) was used to estimate Category 12 emissions. We have re-calculated our 2020 Category 10 and 12 emissions using this methodology.

Scope 3 category 13: Downstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

WR Grace does not have any downstream leased assets and therefore this category is not relevant.

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

WR Grace does not have any franchises and therefore this category is not relevant.

Scope 3 category 15: Investments

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

WR Grace does not have any investments and therefore this category is not relevant.

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

WR Grace does not have other upstream emission sources and therefore this category is not relevant.

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

WR Grace does not have other downstream emission sources and therefore this category is not relevant.

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Standard
US EPA Mandatory Greenhouse Gas Reporting Rule
US EPA Emissions & Generation Resource Integrated Database (eGRID)

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)

604,159.37

Start date

January 1, 2022

End date

December 31, 2022

Comment

In 2022, Grace's Scope 1 emissions increased slightly by 4.5% from 2021. This is due to Grace's production volume increasing by 19% in 2022 from 2021 because of plant expansions at certain facilities.

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

588,705.45

Start date

January 1, 2019

End date

December 31, 2019

Comment

Grace has re-calculated its base year Scope 1 emissions to account for the acquisition of its South Haven and Tyrone facilities in 2021.

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

156,317.8

Scope 2, market-based (if applicable)

119,047.91

Start date

January 1, 2022

End date

December 31, 2022

Comment

In 2022, Grace reported a 4% decrease in its location-based Scope 2 emissions from 2021, and a 16% decrease in its market-based Scope 2 emissions from 2021.

Since 2021, Grace has purchased carbon-free electricity at certain US facilities through the issuance of Emissions Free Energy Certificates by the utility provider. This energy is sourced from nuclear, hydroelectric, solar and other renewable energy sources. Grace's Canadian facility utilizes renewable hydroelectric energy for its operations.

Past year 1

Scope 2, location-based

180,381.86

Scope 2, market-based (if applicable)

190,914.98

Start date

January 1, 2019

End date

December 31, 2019

Comment

Grace has re-calculated its base year Scope 2 location-based and market-based emissions to account for the acquisition of its South Haven and Tyrone facilities in 2021.

C6.4

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

Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1, Scope 2, or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source of excluded emissions

Leased offices and remediation sites within our operational control.

Scope(s) or Scope 3 category(ies)

Scope 1

Scope 2 (location-based)

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

Relevance of Scope 3 emissions from this source

Date of completion of acquisition or merger

Estimated percentage of total Scope 1+2 emissions this excluded source represents

1

Estimated percentage of total Scope 3 emissions this excluded source represents

Explain why this source is excluded

These facilities are not material users of energy within our organization.

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

In 2020, we calculated Scope 1 and 2 emissions at our leased offices and remediation sites and have evaluated them to be less than 5% of Grace's GHG emissions. We do not expect this to significantly change in the coming years.

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,106,391

Emissions calculation methodology

Spend-based method

Other, please specify

Emissions estimated using WRI Scope 3 Evaluator Tool.

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

Please explain

The WRI/Quantis Evaluator Tool ("Tool") aligns with the Greenhouse Gas Protocol 'spend-based' method to calculate an initial screen of Scope 3 upstream emissions, with industry-average emissions factors applied based on the economic value of the goods and services. This Tool is intended to ONLY provide "a first, rough approximation" of Scope 3 emissions and has several documented limitations, including a time-limited and aggregate use of price-adjustments as well as a reliance on spend data as the emissions calculation basis.

Spend data is broken down according to Grace's internal accounting and allocated to the most appropriate product group category available within the Quantis Tool. The corresponding emissions factors from the Quantis tool are then applied to calculate an overall emissions estimate for this category.

The Scope 3 results using a cost-based approach is intended to be illustrative and is highly influenced by general market conditions such as inflation and should not be interpreted as a specific indicator of supply chain emissions performance. To help account for inflation in the most recent reporting cycle, we applied an index-based approach to the raw material purchases with 2020 as the baseline.

We have provided 2022 purchased goods and services spend as input.

Capital goods

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

171,396

Emissions calculation methodology

Spend-based method

Other, please specify

Emissions estimated using WRI Scope 3 Evaluator Tool.

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

Please explain

The WRI/Quantis Evaluator Tool ("Tool") aligns with the Greenhouse Gas Protocol 'spend-based' method to calculate an initial screen of Scope 3 upstream emissions, with industry-average emissions factors applied based on the economic value of the goods and services. This Tool is intended to ONLY provide "a first, rough approximation" of Scope 3 emissions and has several documented limitations, including a time-limited and aggregate use of price-adjustments as well as a reliance on spend data as the emissions calculation basis.

Spend data is broken down according to Grace's internal accounting and allocated to the most appropriate product group category available within the Quantis Tool. The corresponding emissions factors from the Quantis tool are then applied to calculate an overall emissions estimate for this category.

The Scope 3 results using a cost-based approach is intended to be illustrative and is highly influenced by general market conditions such as inflation and should not be interpreted as a specific indicator of supply chain emissions performance. To help

account for inflation in the most recent reporting cycle, we applied an index-based approach to the raw material purchases with 2020 as the baseline.

The Grace team has provided 2021 capital goods spend as input.

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

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

182,303

Emissions calculation methodology

Spend-based method

Other, please specify

Emissions estimated using WRI Scope 3 Evaluator Tool.

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

0

Please explain

The Scope 3 Evaluator tool utilizes total scope 1 and 2 emissions to estimate the emissions associated with Category 3. The Grace team provided total scope 1 and 2 emissions from the 2022 greenhouse gas inventories as input.

Upstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Please explain

Grace's suppliers deliver purchased goods to Grace directly and it is common that the cost for delivering goods is included in the cost of goods. Therefore, emissions from upstream transportation and distribution cannot be determined as a separate category and are captured in Category 1 (Purchased Goods & Services).

Waste generated in operations

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

46,344

Emissions calculation methodology

Spend-based method

Other, please specify

Emissions estimated using WRI Scope 3 Evaluator Tool.

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

0

Please explain

The Scope 3 Evaluator tool utilizes total waste management spend to estimate the emissions associated with Category 5. The Grace team provided estimated waste management spend from the 2022 greenhouse gas inventories as input.

Business travel

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,277

Emissions calculation methodology

Spend-based method

Other, please specify

Emissions estimated using WRI Scope 3 Evaluator Tool.

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

100

Please explain

The Scope 3 Evaluator tool utilizes total emissions associated with third party business travel as a direct input for emissions associated with Category 6. Grace employs Concur as a third-party service to facilitate third-party business travel and as such, Concur provided emissions associated with all air travel as input.

Employee commuting

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

12,750

Emissions calculation methodology

Spend-based method

Other, please specify

Emissions estimated using WRI Scope 3 Evaluator Tool.

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

0

Please explain

The Scope 3 Evaluator tool utilizes total employee headcount to estimate the emissions associated with Category 7. The Grace team provided total headcount for input.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

WR Grace does not have any upstream leased assets and therefore this category is not relevant.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

5,529

Emissions calculation methodology

Spend-based method

Other, please specify

Emissions estimated using WRI Scope 3 Evaluator Tool.

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

100

Please explain

Grace employs Odyssey as a third-party service to provide downstream logistics and as such, Odyssey provided emissions associated with downstream logistics.

Processing of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

2,903,823

Emissions calculation methodology

Spend-based method

Other, please specify

Emissions estimated using WRI Scope 3 Evaluator Tool.

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

0

Please explain

The Scope 3 Evaluator tool utilizes total weight of product to estimate the emissions associated with Category 10. This approach represents a change of methodology from 2020 when we estimated only a portion of our business.

Use of sold products

Evaluation status

Relevant, not yet calculated

Please explain

At this time we are unable to calculate the emissions reductions attributed to the use of our products.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

271,880

Emissions calculation methodology

Spend-based method

Other, please specify

Emissions estimated using WRI Scope 3 Evaluator Tool.

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

0

Please explain

The Scope 3 Evaluator tool utilizes total revenue to estimate the emissions associated with Category 12. This approach represents a change of methodology from 2020 when we estimated only a portion of our business.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

WR Grace does not have any downstream leased assets and therefore this category is not relevant.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

WR Grace does not have any franchises and therefore this category is not relevant.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

WR Grace does not have any investments and therefore this category is not relevant.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

WR Grace does not have other upstream emission sources and therefore this category is not relevant.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

WR Grace does not have other downstream emission sources and therefore this category is not relevant.

C6.5a

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

Past year 1

Start date

January 1, 2020

End date

December 31, 2020

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

0

Scope 3: Capital goods (metric tons CO2e)

0

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

0

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

0

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

0

Scope 3: Business travel (metric tons CO2e)

0

Scope 3: Employee commuting (metric tons CO2e)

0

Scope 3: Upstream leased assets (metric tons CO2e)

0

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

0

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

2,468,658

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

0

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

226,979

Scope 3: Downstream leased assets (metric tons CO2e)

0

Scope 3: Franchises (metric tons CO2e)

0

Scope 3: Investments (metric tons CO2e)

0

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

0

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

0

Comment

Beginning 2021, we used total Grace production volume as input to estimate Category 10 (Processing of Sold Products) emissions, while total Grace revenue (including ART) was used to estimate Category 12 (End of Life Treatment of Sold Products) emissions. We have re-calculated our 2020 Category 10 and 12 emissions using this methodology.

C6.7

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

No

C6.10

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

Intensity figure

0.0002922882

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

760,477

Metric denominator

unit total revenue

Metric denominator: Unit total

2,601,805,000

Scope 2 figure used

Location-based

% change from previous year

4

Direction of change

Decreased

Reason(s) for change

Change in revenue

Please explain

Grace's 2022 gross Scope 1 and 2 emission intensity metric decreased by 4% compared to 2021. This is primarily due to 4% growth in Grace's revenue in 2022 from 2021 as a result of facility expansion at certain facilities.

We manufacture our hydroprocessing catalysts through our Advanced Refining Technologies LLC ("ART") joint venture with Chevron Products Company ("Chevron"). We hold a 50% economic interest in ART, which is not consolidated in our financial statements, so ART's sales are excluded from our sales in the 10K. The metric

denominator includes 50% of ART revenue to align with Grace's claim of 50% of ART earnings.

C7. Emissions breakdowns

C7.1

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

Yes

C7.1a

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

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	593,028.1	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	472.18	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	307.57	IPCC Fifth Assessment Report (AR5 – 100 year)
PFCs	10,351.52	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

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

Country/area/region	Scope 1 emissions (metric tons CO2e)
Latin America (LATAM)	3,279.39
Europe, Middle East and Africa (EMEA)	165,932.33
Asia Pacific (or JAPA)	10,290.23
North America	424,657.41

C7.3

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

By business division
By facility
By activity

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
Refining Technologies (RT)	349,854.41
Specialty Catalysts (SC)	58,943.6
Material Technologies (MT)	44,979.58
RT, MT, SC	127,678.84
Advanced Refining Technologies (ART)	22,702.93

C7.3b

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

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
Aiken	3,183.34	33.59	-81.7
Albany	972.71	44.63	-123.1
Baton Rouge	3,306.65	30.49	-91.18
Cabot Warehouse	424.78	39.2	-76.55
Chattanooga	5,266.48	35.09	-85.25
Chicago 71st	22,702.93	41.76	87.72
Columbia	4,224.6	39.19	-76.91
Curtis Bay	106,396.08	39.21	-76.57
Duren	28,796.45	50.77	6.49
East Chicago	30,041.99	41.62	-87.46
Hesperia	61.2	34.43	-117.28
Houston Whse	158.23	29.81	-95.31
Kuantan	9,030.24	3.98	103.38
Lake Charles	155,817.67	30.16	-93.34
Norco	30,047.63	30	-90.42
Pasadena	15,807.87	29.62	-95.05
Sorocaba	3,279.39	-23.4	-47.37
South Haven	3,812.3	42.39	-86.28
Stenungsund	9,452.47	58.07	11.85
Tarragona	4.58	38.09	-0.97
Tyrone	7,039.33	40.7	-78.23
Valleyfield	35,393.62	45.27	-74.11

Worms	127,678.84	49.66	8.36
Yeosu	1,260	34.84	127.7

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Administrative	4,382.84
Non-Administrative	599,776.54

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	Comment
Chemicals production activities	599,776.54	

C7.5

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

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
North America	111,551.14	69,442.37
Europe, Middle East and Africa (EMEA)	27,323.21	32,162.09
Asia Pacific (or JAPA)	16,633.95	16,633.95
Latin America (LATAM)	809.5	809.5

C7.6

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

By business division
By facility
By activity

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)
Refining Technologies (RT)	77,392.7	48,811.24
Specialty Catalysts (SC)	25,597.36	20,663.13
Material Technologies (MT)	43,655.25	46,402.31
RT, MT, SC	1,684.09	3,171.23
Advanced Refining Technologies (ART)	7,988.39	

C7.6b

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

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Aiken	1,295.62	1,297.25
Albany	1,943.85	1,984.62
Baton Rouge	11,070.44	11,073.16
Cabot Whse	136.77	136.22
Chattanooga	4,047.98	4,024.57
Chicago 71st	7,988.39	0
Columbia	4,558.1	0
Curtis Bay	19,393.93	0
Duren	22,155.68	24,929.85
East Chicago	3,307.78	3,295.43
Hesperia	123.04	125.47
Houston Whse	60.31	66.43
Kuantan	13,719.17	13,719.17
Lake Charles	34,941.29	34,968.51
Manila	114.4	114.4
Norco	3,123.03	3,125.46
Pasadena	5,508.76	0
Sorocaba	809.5	809.5
South Haven	6,847.87	6,818.32
Stenungsund	388.68	396.88
Tarragona	3,094.75	3,664.13
Tyrone	4,677.06	0

Valleyfield	2,526.9	2,526.9
Worms	1,684.09	3,171.23
Yeosu	2,800.38	2,800.38

C7.6c

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

Activity	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Administrative	4,732.81	180.83
Non-Administrative	151,584.99	118,867.07

C7.7

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

Not relevant as we do not have any subsidiaries

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

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

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Chemicals production activities	151,584.99	119,047.91	Since 2021, Grace has purchased carbon-free electricity at certain US facilities through the issuance of Emissions Free Energy Certificates by the utility provider. This energy is sourced from nuclear, hydroelectric, solar and other renewable energy sources. Grace's Canadian facility utilizes renewable hydroelectric energy for its operations.

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) Chemicals	23.52	WRI Scope 3 Evaluator Tool is used to estimated Scope 3 emissions for all scope 3 categories. Value provided is total emissions from purchase of feedstock chemicals divided by total scope 3 emissions.

C-CH7.8a

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

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

C7.9

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

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 in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	79,308.42	Increased	10.4	Since 2021, Grace began purchasing carbon-free electricity at certain US facilities through the issuance of Emissions-Free Energy Certificates by the utility provider. This energy is sourced from nuclear, hydroelectric, solar and other renewable energy sources. Grace's

				Canadian facility utilizes renewable hydroelectric energy for its operations. We estimated the total impact of our renewable energy consumption on our 2022 emissions as (79,308.42/79,308.42)*100= 10.4%
Other emissions reduction activities	1,953	Decreased	0.25	The completion of key energy efficiency projects at several facilities resulted in an estimated reduction of 1,953 MT CO2e in energy consumption based on the projected impacts from these efficiency projects and removing the potential energy impacts from changes in output that resulted from the COVID-19 pandemic. We estimated the total impact of these energy efficiency projects on our 2022 emissions through (1,953/632,676.99)*100 = 0.25%
Divestment	0		0	
Acquisitions	0		0	
Mergers	0		0	
Change in output	0		0	
Change in methodology	0		0	
Change in boundary	0		0	
Change in physical operating conditions	0		0	
Unidentified	0		0	
Other	0		0	

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?

Location-based

C8. Energy

C8.1

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

More than 5% but less than or equal to 10%

C8.2

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

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

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	3,146,996.21	3,146,996.21
Consumption of purchased or acquired electricity		113,135.91	260,210.64	373,346.55

Consumption of purchased or acquired steam		0	129,781.82	129,781.82
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		113,135.91	3,536,988.68	3,650,124.59

C-CH8.2a

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

Consumption of fuel (excluding feedstocks)

Heating value

HHV (higher heating value)

MWh consumed from renewable sources inside chemical sector boundary

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

3,146,996.21

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

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

3,146,996.21

Consumption of purchased or acquired electricity

MWh consumed from renewable sources inside chemical sector boundary

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

113,135.91

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

260,210.64

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

373,346.55

Consumption of purchased or acquired steam

MWh consumed from renewable sources inside chemical sector boundary

0

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

129,781.82

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

0

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

129,781.82

Consumption of self-generated non-fuel renewable energy

MWh consumed from renewable sources inside chemical sector boundary

0

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

0

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

0

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

0

Total energy consumption

MWh consumed from renewable sources inside chemical sector boundary

113,135.91

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

3,536,988.68

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

0

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

3,650,124.59

C8.2b

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

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

C8.2c

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

Sustainable biomass

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Other biomass

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Coal

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Oil

Heating value

HHV

Total fuel MWh consumed by the organization

9,315.33

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Gas

Heating value

HHV

Total fuel MWh consumed by the organization

3,137,680.88

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self- cogeneration or self-trigeneration

406,901.64

Comment

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

Heating value

Total fuel MWh consumed by the organization

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self- cogeneration or self-trigeneration

Comment

Total fuel

Heating value

HHV

Total fuel MWh consumed by the organization

3,146,996.21

MWh fuel consumed for self-generation of electricity

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self- cogeneration or self-trigeneration

405,114.55

Comment

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	117,228.33	117,228.33	0	0
Heat	202,825.19	202,825.19	0	0
Steam	0	0	0	0
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.

Electricity

Total gross generation inside chemicals sector boundary (MWh)

117,228.33

Generation that is consumed inside chemicals sector boundary (MWh)

117,228.33

Generation from renewable sources inside chemical sector boundary (MWh)

0

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

0

Heat

Total gross generation inside chemicals sector boundary (MWh)

202,825.19

Generation that is consumed inside chemicals sector boundary (MWh)

202,825.19

Generation from renewable sources inside chemical sector boundary (MWh)

0

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

0

Steam

Total gross generation inside chemicals sector boundary (MWh)

Generation that is consumed inside chemicals sector boundary (MWh)

Generation from renewable sources inside chemical sector boundary (MWh)

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

Cooling

Total gross generation inside chemicals sector boundary (MWh)

Generation that is consumed inside chemicals sector boundary (MWh)

Generation from renewable sources inside chemical sector boundary (MWh)

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

C8.2e

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

Country/area of low-carbon energy consumption
United States of America

Sourcing method
Other, please specify
Emission free energy certificates (EFECs) purchase

Energy carrier
Electricity

Low-carbon technology type
Nuclear

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
113,135.91

Tracking instrument used
Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute
United States of America

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Country/area of low-carbon energy consumption
Canada

Sourcing method
Default delivered electricity from the grid (e.g. standard product offering by an energy supplier) from a grid that is 95% or more low-carbon and where there is no mechanism for specifically allocating low-carbon electricity

Energy carrier
Electricity

Low-carbon technology type
Hydropower (capacity unknown)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
21,040

Tracking instrument used
Contract

Country/area of origin (generation) of the low-carbon energy or energy attribute
Canada

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

C8.2g

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

Country/area
Brazil

Consumption of purchased electricity (MWh)
8,667.03

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

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

8,667.03

Country/area
Canada

Consumption of purchased electricity (MWh)
21,040

Consumption of self-generated electricity (MWh)
0

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

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

21,040

Country/area
Germany

Consumption of purchased electricity (MWh)
15,432.25

Consumption of self-generated electricity (MWh)

90,849.61

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

83,924.07

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

170,918.54

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

361,124.47

Country/area

Spain

Consumption of purchased electricity (MWh)

4,299.43

Consumption of self-generated electricity (MWh)

0

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

10,735.25

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

0

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

15,034.68

Country/area

Republic of Korea

Consumption of purchased electricity (MWh)

5,995.24

Consumption of self-generated electricity (MWh)

0

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

0

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

0

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

5,995.24

Country/area

Malaysia

Consumption of purchased electricity (MWh)

20,986.95

Consumption of self-generated electricity (MWh)

0

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

0

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

0

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

20,986.95

Country/area

Philippines

Consumption of purchased electricity (MWh)

160.68

Consumption of self-generated electricity (MWh)

0

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

0

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

0

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

160.68

Country/area

Sweden

Consumption of purchased electricity (MWh)

643.4

Consumption of self-generated electricity (MWh)

0

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

1,686.02

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

0

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

2,329.42

Country/area

United States of America

Consumption of purchased electricity (MWh)

296,121.58

Consumption of self-generated electricity (MWh)

26,378.73

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

33,436.48

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

31,906.65

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

387,843.44

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

111,956.52

Metric numerator

Metric tons (MT)

Metric denominator (intensity metric only)

% change from previous year

0.53

Direction of change

Decreased

Please explain

Grace reported a slight decrease of 0.52% in generated waste in 2022 from 2021.

At Grace, we are committed to the minimization and safe disposal of all waste, including hazardous waste, associated with our processes. We implement this commitment through our global Environment Health and Safety EHS policy, and adherence to the Responsible Care® initiative. Grace has established a target of reducing its waste sent to landfills (in tons) by 5 percent from a 2019 baseline by 2029. This includes reductions in hazardous waste sent to landfills.

C-CH9.3a

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

Output product

Other, please specify

Total weight of final goods and intermediate products we produce

Production (metric tons)

512,170.15

Capacity (metric tons)

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

1.49

Electricity intensity (MWh per metric ton of product)

0.72

Steam intensity (MWh per metric ton of product)

0.25

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

Comment

At this time, we are not able to publicly disclose weight of specific products, so the values provided in this response represent the total weight of final goods and intermediate products we produce.

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	Grace continues to develop products designed for use-phase efficiency (defined by the Sustainability Accounting Standards Board (SASB) as products that "through their use-can be shown to improve energy efficiency, eliminate or lower greenhouse gas (GHG) emissions, reduce raw materials consumption, increase product longevity, and/or reduce water consumption) that met our customers' sustainability objectives. Here are some examples: Grace Polyltrack® improves our customers products through high performing polypropylene catalysts enabling light weighting of auto parts for downstream customers increasing fuel efficiency for internal combustion engines and extending range on electric vehicles. Our custom single-site Polyethylene catalysts allow light weighting and downgauging of packaging to reduce the volume of plastic resin required for the shipment and display of consumer goods while maintaining optimal physical properties required by fast moving consumer goods companies. Grace Phonosorb® zeolite desiccants preserve the low dew point in the air space between the inner and outer glass panes of insulated glass by minimizing pressure changes and specifically absorbing water and solvents introduced during the manufacturing process. This increasing the lifespan of insulated windows while preserving the sound and heat insulation properties.

		Makers of renewable diesel, an alternative to petroleum-based diesel fuel, use Grace's EnRich® catalyst to maximize the efficiency of the biomass conversion process from pre-treatment of base oil to final polishing of the fuel leveraging existing refining infrastructure for drop in biodiesel fuels.

C-CH9.6a

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

Technology area

Process step integration

Stage of development in the reporting year

Large scale commercial deployment

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

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

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

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

Grace Polytrack® improves our customers products through high performing polypropylene catalysts enabling light weighting of auto parts for downstream customers increasing fuel efficiency for internal combustion engines and extending range on electric vehicles.

Our custom single-site Polyethylene catalysts allow light weighting and downgauging of packaging to reduce the volume of plastic resin required for the shipment and display of consumer goods while maintaining optimal physical properties required by fast moving consumer goods companies.

Grace Phonosorb® zeolite desiccants preserve the low dew point in the air space between the inner and outer glass panes of insulated glass by minimizing pressure changes and specifically absorbing water and solvents introduced during the manufacturing process. This increasing the lifespan of insulated windows while preserving the sound and heat insulation properties.

Grace's EnRich® line of catalysts maximize the efficiency of biomass conversion leveraging existing refining infrastructure for drop in renewable diesel fuels.

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	No third-party verification or assurance

C10.1a

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

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

WR Grace RY22 GHG Assurance Review Letter- Final 7-24-23.pdf

Page/ section reference

1-2

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

64

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

WR Grace RY22 GHG Assurance Review Letter- Final 7-24-23.pdf

Page/ section reference
1-2

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
36

C10.2

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

No, we do not verify any other climate-related information reported in our CDP disclosure

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

Québec CaT - 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

25.9

% of Scope 2 emissions covered by the ETS

15.25

Period start date

January 1, 2022

Period end date

December 31, 2022

Allowances allocated

100,162

Allowances purchased

78,274

Verified Scope 1 emissions in metric tons CO2e

0

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

Québec CaT - ETS

% of Scope 1 emissions covered by the ETS

5.86

% of Scope 2 emissions covered by the ETS

1.62

Period start date

January 1, 2022

Period end date

December 31, 2022

Allowances allocated

0

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

0

Verified Scope 2 emissions in metric tons CO2e

0

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?

Grace is constantly evaluating its regulatory needs and is fully compliant with the rules and regulations of the EU-ETS and Quebec CaT. Grace is making investments in reducing its energy consumption in anticipation of additional carbon tax or emissions trading programs where we operate. Grace is implementing an assumed cost of carbon in capital decisions globally beginning with facilities regulated under the EU-ETS. The cost of carbon model is in place today in the EU-ETS facilities, and Grace expects to broaden its use across all facilities in 2024. These investments include reducing GHG emissions resulting from our operations through the optimization of energy efficiency through audited energy management systems, improvement projects, and the optimization of its allowances. In anticipation of future potential carbon taxes and in line with our energy reduction targets, our Curtis Bay facility has installed a Combined Heat and Power (CHP). It has an engine equipped with an oxidation catalyst and a selective catalytic reduction (SCR) system to meet stringent environmental criteria. The two generator sets produce about 5 MW of electric power, which offsets about 40 percent of the plant's annual power consumption.

In 2021, Grace began using carbon-free energy at its Chicago 71st, Columbia, Curtis Bay and Pasadena facilities through the issuance of Emissions-Free Energy Certificates by the utility provider. This energy is sourced from nuclear, hydroelectric, solar and other renewable energy sources.

C11.2

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

No

C11.3

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

Yes

C11.3a

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

Type of internal carbon price

Internal fee

How the price is determined

Cost of required measures to achieve emissions reduction targets

Objective(s) for implementing this internal carbon price

Drive energy efficiency
Navigate GHG regulations

Scope(s) covered

Scope 1
Scope 2

Pricing approach used – spatial variance

Differentiated

Pricing approach used – temporal variance

Evolutionary

Indicate how you expect the price to change over time

We began implementation of an internal price of carbon on capital projects in 2021 and as a result, the effective price varied from 0 to 126 USD / MT.

We have evaluated a range of carbon prices up to 126 USD/MT.

Actual price(s) used – minimum (currency as specified in C0.4 per metric ton CO2e)

0

Actual price(s) used – maximum (currency as specified in C0.4 per metric ton CO2e)

126

Business decision-making processes this internal carbon price is applied to

Capital expenditure

Mandatory enforcement of this internal carbon price within these business decision-making processes

Yes, for some decision-making processes, please specify

Grace facilities regulated by EU-ETS

Explain how this internal carbon price has contributed to the implementation of your organization's climate commitments and/or climate transition plan

Implementation of the internal carbon price has allowed us to identify investments in additional efficiency gains which will help us achieve our carbon reduction goals and insulate us from future increases in the cost of carbon emissions. This initiative is currently focused on our facilities regulated by the EU-ETS.

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers/clients

C12.1a

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

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Other, please specify

Collection of suppliers' GHG emissions data, emission targets, climate risks and opportunities is currently collected on a triennial basis

% of suppliers by number

2

% total procurement spend (direct and indirect)

70

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

Rationale for the coverage of your engagement

Annually, Grace engages with our suppliers through the Grace Supplier Code of Conduct, sustainability assessments conducted through EcoVadis.

Scope of Engagement: The Grace Supplier Code of Conduct, which includes expectations for environmental responsibility, apply to all Grace suppliers. Grace selects suppliers for an EcoVadis assessment based on their strategic importance to our business.

Impact of engagement, including measures of success

In our supply chain, Grace engages with suppliers on sustainability issues, through its Responsible Sourcing Program. We assess the sustainability performance of our suppliers through EcoVadis, is evidence-based and requires suppliers to provide document verification of policies, practices and management systems, and performance related to a number of environmental issues, including climate resiliency and greenhouse gas management.

In 2022, suppliers representing approximately 70% of our direct material spend completed a supplier sustainability assessment. Of these suppliers, 78% are currently taking action on climate and greenhouse gases.

Comment

C12.1b

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

Type of engagement & Details of engagement

Collaboration & innovation

Run a campaign to encourage innovation to reduce climate change impacts

% of customers by number

50

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

0

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

Rationale:

Delivering value to our customers along a variety of attributes is core to Graces business model. Grace products and technical services improve the efficiency of our customers' processes, reduce energy or water use, cut harmful emissions, conserve material inputs, and reduce waste. Engagement with our customers across these domains is essential to ensuring our products continue meet the expectations of our

customers and upstream value chain participants.

Scope of Engagement:
The value we deliver through customer-driven innovation increasingly is based on how we help our customers meet their sustainability goals. Where customer specific objectives include direct or indirect climate related aspects such as reduced energy requirements in production processes (Scope 1 & 2) or reduced raw material inputs (Scope 3) Grace has leveraged its significant technical expertise to collaboratively develop, test, and scale products to deliver value to our customers.

Note that we are currently unable to provide a quantitative response for customer-related Scope 3 emissions for this question.

Impact of engagement, including measures of success

Grace's measure of success are based on the percent composition of our revenue that meets one of our four sustainability endpoints. Two of these endpoints include climate related measures.
~$0.5 Billion in revenue is derived from products that increase the efficiency of a product during its use phase from products that improve processes by increasing the efficiency of the manufacturing process used to make a product. Here are some examples:

During operation of their refinery FCC units, many of Grace's customers withdraw catalyst from operation to keep the FCC running optimally. This spent catalyst, known as equilibrium catalyst, can commonly be reworked, reused or repurposed. Rather than disposing of it, Grace works with its customers to give this catalyst extended life. We may rework the products, or help customers fine suitable outlets to repurpose them.

C12.2

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

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

C12.3

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

Row 1

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

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

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

Yes

Attach commitment or position statement(s)

Please refer to pages 10-11 of attached GRI Report on Grace's Sustainability Strategy outlining Grace's commitment to conduct engagement activities in line with the goals of the Paris Agreement.

2021_WR_Grace_Co_GRI_Report.pdf

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

The global framework for Grace's EHS activities is our EHS Management System. Our US facilities adhere to the chemical industry-specific Responsible Care Management System to evaluate and manage all environmental, health & safety, process safety, product safety and security risks.

Grace's commitment towards GHG emission reduction and enhanced energy efficiency is anchored on its global EHS policy and managed on a corporate and facility level through our global EHS Management System.

C12.3b

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

Trade association

American Chemistry Council

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

Consistent

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

Yes, we publicly promoted their current position

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

The ACC believes that making sustainable progress toward the reduction of greenhouse gas (GHG) emissions, while minimizing the costs to society, requires consistent,

predictable policy and regulatory environments that foster innovation, investment, and economic growth. Any new U.S. climate policy should cover all sources of GHG emissions and be developed by the U.S. Congress.

Climate change is a global challenge that requires long-term commitment and action by every segment of society. A combination of technology, market-based and policy solutions will be necessary to reduce greenhouse gas emissions (GHG) and achieve climate goals, such as those of the Paris Agreement.

The chemical industry – and innovations in chemistry – are critical to achieving efficient and effective climate change solutions. Many low-carbon solutions rely on innovations in chemistry – from lithium-ion batteries that drive electric cars to high-performance building insulation and windows to lightweight plastic packaging and auto parts that reduce energy needs, and carbon emissions, in shipping and transportation. As a significant manufacturing sector, we are continuously improving the energy efficiency and intensity of our own operations. The chemical industry is developing transformational technologies that cut emissions, improve energy efficiency, and enable a socially, environmentally, and economically sustainable future.

Source: ACC Climate Policy Principles - American Chemistry Council

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

131,625

Describe the aim of your organization's funding

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

Yes, we have evaluated, and it is aligned

Trade association

European Chemical Industry Council (CEFIC)

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

Mixed

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

No, we did not attempt to influence their position

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

A sound and detailed definition of climate-neutrality provides a signal for long-term investments

The path to climate-neutrality must be based on a detailed definition; one which unites and strengthens European national actions and sets out clear rules and mechanisms for operating, including transborder GHG projects for reduction accounting. The EU wants to be climate neutral as a continent but not in isolation from the rest of world.

All sectors of the economy need to be on board to reach climate neutrality

Besides managing the different global speeds of reducing emissions, different sectors of the economy also reduce emissions at different rates. The chemical industry requires integrated efforts to reduce further greenhouse gas emissions, notably linked to the energy sector. All the sectors of the economy must work together to deliver on climate-neutrality.

An enabling framework will be the key to success

All Energy Intensive Industries have called for a Clean Industry Package with concrete actions based on three pillars: the creation of markets for climate neutral, circular economy products; developing climate neutral solutions and financing their uptake; and the deployment of the necessary resources. To achieve its transition, the chemical industry will need much more energy than today, and this energy will have to be low-carbon. The EU Industrial Strategy package should create the foundations for deploying radical industrial policies to accelerate the European Green Deal transformation of the EU industry. Moreover, EU policies should not only preserve intra-EU competition but also equip European industry to compete on a global scale.

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

57,104

Describe the aim of your organization's funding

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

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

Chemistry Industry Association of Canada (CIAC)

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

Consistent

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

No, we did not attempt to influence their position

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

Recognize that the chemical industry has been effective in managing climate change for several decades.

Address the global competitiveness of the Canadian chemistry industry in the design and implementation of Carbon Policy to allow its member-companies to deliver the products and solutions needed to meet the climate change challenge domestically and abroad.

Define sustainable and economically efficient GHG emissions reduction objectives that are balanced with economic-driven growth objectives in the chemistry industry.

Provide certainty and predictability for continued operation and growth of the chemistry sector in federal, provincial and cross-border regulatory frameworks.

Build upon the Canadian chemistry industry's know-how to maintain our society's ability to innovate and to respond efficiently to climate change pressures and to the changing needs of a low-carbon economy.

"We are pleased to see that the federal government listened to industries' challenges and is working to develop carbon policies recognizing emission-intensive, trade-exposed sectors. By stating its intention to eliminate industrial solid and gaseous fuels from the Clean Fuel Standard (CFS) there is increased confidence in Canada's ability to attract investment into this important sector while simultaneously pursuing a low carbon economy," said Bob Masterson, President and CEO of CIAC.

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

Describe the aim of your organization's funding

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

Yes, we have evaluated, and it is aligned

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 voluntary sustainability report

Status

Underway – previous year attached

Attach the document

2021_WR_Grace_Co_GRI_Report.pdf

Page/Section reference

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics
Other, please specify

workforce health and safety; product design for use-phase efficiency

Comment

C12.5

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

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	UN Global Compact	

C15. Biodiversity

C15.1

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

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues
Row 1	No, and we do not plan to have both within the next two years

C15.2

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

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity
Row 1	No, and we do not plan to do so within the next 2 years

C15.3

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

Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment

Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment

C15.4

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

C15.5

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

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?
Row 1	

C15.6

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

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1		

C15.7

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

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located

C16. 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.

C16.1

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

	Job title	Corresponding job category
Row 1	Global Sustainability Director	Chief Sustainability Officer (CSO)

SC. Supply chain module

SC0.0

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

W. R. Grace & Co. is engaged in the production and sale of specialty chemicals and specialty materials on a global basis through two reportable business segments: Grace Catalysts Technologies, which includes catalysts and related products and technologies used in refining, petrochemical and other chemical manufacturing applications; and Grace Materials Technologies, which includes specialty materials, including silica-based and silica-alumina-based materials, used in consumer/pharma, chemical process, and coatings applications.

W. R. Grace & Co. delivers value through performance. Our catalysts and specialized silicas improve the products and processes of many of the world's best companies. Through world-class knowhow, collaboration, and experience, we help customers in 70 countries achieve some of their most important goals, from high-performing products and high-productivity manufacturing, to improved efficiency, sustainability, and profitability.

SC0.1

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

	Annual Revenue
Row 1	2,601,805,000

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

Braskem S/A

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

346.68

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

297.18

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Braskem S/A

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

90.7

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

297.18

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Colgate Palmolive Company

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

9,856.76

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

8,449.4

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Colgate Palmolive Company

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

2,578.81

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

8,449.4

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Pirelli

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

1,361.03

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

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

1,166.7

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Pirelli

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

356.08

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

1,166.7

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

SABIC

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

1,798.67

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

1,541.85

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

SABIC

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

470.58

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

Allocation method

Allocation based on the volume of products purchased

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

1,541.85

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

AstraZeneca

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

1,156.65

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

991.5

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

AstraZeneca

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

302.61

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

991.5

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

The Dow Chemical Company

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

167.92

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

143.94

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

The Dow Chemical Company

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

43.93

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

143.94

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Novartis

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

173.93

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

149.1

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Novartis

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

45.51

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

149.1

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Johnson & Johnson

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

28

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

24

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Johnson & Johnson

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

7.32

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

24

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Velux A/S

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

8.17

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

7

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Velux A/S

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

2.14

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

7

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Stéarinerie Dubois

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

386.13

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

331

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Stéarinerie Dubois

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

101.02

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

331

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

International Flavors & Fragrances Inc.

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

2.29

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

1.96

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

International Flavors & Fragrances Inc.

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

0.6

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

1.96

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Equinor

Scope of emissions

Scope 1

Scope 2 accounting method

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

2,812.58

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

2,411

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

Requesting member

Equinor

Scope of emissions

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

735.85

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

2,411

Unit for market value or quantity of goods/services supplied

Metric tons

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

The data is based on aggregate scope 1 and 2 emissions across all of the company's operations and does not precisely reflect actual emission associated with a particular product.

SC1.2

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

SC1.3

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

Allocation challenges	Please explain what would help you overcome these challenges
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	Our major manufacturing plants have comingled production lines across a diverse array of our businesses which makes disaggregating energy and water use by product line extremely challenging.

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.

Our customers' appetites for more sustainable products and processes have increased, so too has Grace's focus on integrating sustainability into the design, functionality, and value propositions of our products. Grace will continue to expand its capacity for reporting as our customers appetites for this information continue to increase. In addition, implementation of advanced process control technology is expected to give us additional and more granular data on our processes.

SC2.1

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

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 understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please confirm below

I have read and accept the applicable Terms