Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

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

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.

C0.2

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

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

C0.3

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

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

C1. Governance

C1.1

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

Yes

C1.1a

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

Position of individual(s)	Please explain
Board-level committee	The Corporate Responsibility Committee composed of all members of the board including the chairman, CEO and all other board members. This committee assists the Company's Board of Directors and management in addressing the Company's responsibilities as a global corporate citizen (including its responsibilities to its various stakeholders, such as shareholders, customers, employees and the communities in which the Company operates). The Committee addresses the Company's responsibilities in a wide range of areas, including affirmative action, equal employment opportunity and diversity initiatives; corporate contributions and community service programs; corporate training programs; sustainability; environmental, health and safety matters, and climate-related issues as they rise to the level of importance that would have a substantive impact on the operations or finances of the company. The Board of Directors decided to endorse our emissions reduction target of 22% over 10 years in line with SBTi's limiting warming to well below 2*C above pre-industrial levels.

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
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding risk management policies Setting performance objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	The Corporate Responsibility Committee in consultation with management and/or other Committees of the Board: (a) evaluate the Company's procedures, programs, policies and practices with respect to its responsibilities as a global corporate citizen, including the review and development of strategy with respect to climate and its impact on operations and (b) in appropriate circumstances, recommend the amendment of the foregoing and/or the adoption of new procedures, programs, policies and/or practices.

C1.2

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

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Sustainability Officer (CSO)	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

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

The Senior Vice President Public Affairs and Environment, Health, and Safety, Chief Sustainability Officer is a corporate officer directly reporting to the CEO and Board of Directors, and oversight of all Environmental, Health, and Safety programs at Grace. This position is responsible for reporting on ESG related issues, including GHG emissions data, and is chairing the Grace Sustainability Leadership Team (SLT) which is composed of business presidents and representatives of Integrated Supply chain. The SLT is responsible for the strategic development, planning, and oversight of climate related issues throughout the organization. These duties were assigned to this position because of its existing oversight of relevant programs and its reporting relationship to the CEO and the Board of Directors.

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	Type of incentive	Activity inventivized	Comment
Chief Sustainability Officer (CSO)	Non-monetary reward	Behavior change related indicator	The Chief Sustainability Officer 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 Sustainability Accounting Standards Board (SASB); and the integration of sustainability practices within our global functions.
Facilities manager	Non-monetary reward	Emissions reduction project Energy reduction project Efficiency project	Facility Managers have operational control over all production units within the boundary of a facility. Facilities managers are accountable for identifying targets and implementing projects scoped to their facility to meet cascaded targets from the Director of ISC. Performance is assessed annually against project delivery and facility specific targets. Emissions reduction projects may include the installation of combined heat and power systems to meet stricter emissions guidelines. Energy Reduction Projects may include the replacement of old equipment like air compressors, insulation of process equipment, or lighting for more energy efficient equipment. Efficiency projects include debottlenecking and process optimization by reducing natural gas, electricity, or raw material inputs.
Process operation manager	Non-monetary reward	Emissions reduction project Energy reduction project Efficiency project	Process operation managers have operational control over specific production lines within a facility and are responsible for the tactical day to day operations. Process operation managers identify and implement the emissions, energy and efficiency projects designed to meet relevant targets cascaded from Facilities Managers. Performance is assessed annually against project milestones and targets. Emissions reduction projects may include the modification or installation of new process equipment, pollution control devices, or raw material substitution leading to reduced emissions. Energy Reduction Projects may include the replacement of old equipment like air compressors, insulation of process equipment, or lighting for more energy efficient equipment. Efficiency projects include debottlenecking and process optimization / modification that reduces scope 1, 2, and 3 emissions by reducing natural gas, electricity, or raw material inputs.

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 to 2 years). Our Enterprise-wide ERM process looks at a wide variety of risks including climate risks.
Medium-term	3	5	In evaluating potential policy initiatives related to transitional risks Grace looks to a 3 to 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. W.R. Grace & Co. defines substantive financial impact as any event that exceeds our 10% threshold for our sales, earnings or market capitalization when identifying or assessing climate-related risks.

C2.2

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

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

At Grace we have developed a company-specific Climate Risk Screening Tool to determine which risks and/or opportunities could have a substantive financial or strategic impact. Our tool integrates financial modeling with climate scenario analysis and is based on the TCFD framework. We start by screening CDP's list of primary climate-related risk drivers across our value chain and their probability of occurrence as well as our control of the risks. We then use internal data to gauge primary potential financial impact, which we discount over the expected time horizon. The results of this analysis are part of a specific climate-related risk management process and updated as factors change. 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 supply chain resiliency and are taking proactive measures to prevent supply-chain 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, supply chain, logistics, information technology, and communications functions. However, we have leveraged technology and e-commerce tools to make our supply chain more efficient and allow us to better respond to potential supply-chain 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 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.
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, always 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 fuels 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 feasibility of implementation and financial impact.
Legal	Relevant, always included	Grace monitors developments across global regulatory and non-regulatory (NGO) frameworks that impact areas where it has operations. These assessments include expansion and development of sustainability and climate related legislation and associated litigation. These areas are monitored and assessed to determine potential legal risks including those risks arising from climate change. For example the expansion in regulatory required climate reporting for publicly traded companies within areas that Grace operates is

		monitored to ensure additional requirements are met and operations remain compliant.
Market	Relevant, always 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 are 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 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, always 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 Green House 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. 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 to 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, always 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. For example, Grace relies on global ports and associated facilities to receive many raw materials used in the production of our products as well as deliver our products to customers around the world. The resilience of these ports to climate change may impact our ability to produce and deliver our products. By 2100 approximately 34% (over 19% baseline) of global ports will experience increases in multiple hazard drivers including tropical cyclones, wind, coastal flooding, and extreme precipitation, temperatures and waves that will impact a ports reliability, vessel maneuverability, berthing, loading, unloading, etc. With the largest changes occurring at ports based in the Mediterranean, Pacific, and Indonesian regions.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

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

Primary potential financial impact

Increased capital expenditures

Company-specific description

WR Grace is engaged with the production and sale of specialty chemicals and specialty materials for various applications. We recognize business risks as we operate our business at a global scale. Multiple Grace facilities globally are located within 20 miles of a coast, placing them at risk from increased severity of hurricanes and weather events that could cause production interruptions. Key suppliers and associated distribution routes for raw materials and finished goods are located within 100 miles of a coast, increasing susceptibility to interruptions from severe weather events.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

19,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

In 2020, Hurricane Laura caused damage to our facility in Lake Charles, Louisiana, and its surrounding communities. Financial impact due to Hurricane Laura at Lake Charles are related to damaged on-site generator sustaining incremental operations, and logistics cost to supply customers during the outage, destroyed housing, unproductivity of employees.

Cost of response to risk

Description of response and explanation of cost calculation

Cost primarily related to on-site power generation, incremental operations, and logistics cost to supply customers during the outage, temporary housing and employee assistance, and property damage and clean-up. Our response actions include brining in temporary power generation, meeting customer demand from inventory and shifting production to alternate locations.

For example, our response to hurricane Laura in 2020, we utilized these response actions to minimize impact to our operations and customers amounting to 19,000,000.

Comment

Identifier

Risk 2

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 capital expenditures

Company-specific description

Grace has 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 companies like Grace to invest in new GHG reduction technology within its EU facilities. Grace has attributed 31% of its gross global Scope 1 emissions under EU-ETS.

Time horizon

Medium-term

Likelihood

About as likely as not

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)

300,000

Potential financial impact figure – maximum (currency)

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 of 10%. We estimate an increase in 10% may result in a risk of 300,000 to 400,000 for our facilities covered under this framework.

Cost of response to risk

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.

One of the key aspects to increasing range of electric vehicles, plug in hybrid vehicles, and increasing fuel efficiency of existing and future Internal Combustion Engines within the light duty segment depends on the ability of OEMs to lightweight vehicles. Light weighting could reduce overall fleet emissions by up to 3%. Graces Specialty Catalysts have enabled the replacement of metallic components with lighter weight polypropylene reducing the component weight in cars by 50-70% versus aluminium and 300% vs steel.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Grace currently uses a qualitative and not quantitative analysis to assess and prioritize risks which may result in a significant impact to revenue or cost of operations.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Grace continues to invest in the development and acquisition of new fine chemicals and catalyst technologies. Grace continues to increase the activity of our catalysts giving down stream efficiency benefits to our customers.

Comment

Continued expansion of Plugin Hybrid (PHEV) and Hybrid (HEV) light duty vehicles are expected to continue comprising a larger percentage of the global light duty vehicle fleet comprising up to 30% of all new vehicle sales by 2025. The increased share of PHEV and HEVs will lead to continued growth in the market for Grace's FCC catalysts capable of boosting octane content from existing refinery feedstocks.

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.

Identifier

Opp2

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 EFFICIENCY OF CUSTOMER PROCESSES

Sulphur oxides (SOX), nitrogen oxides (NOX) and carbon monoxide (CO) are all air pollutants regulated by global regulatory agencies including US EPA. SOx and NOx play a major role in the generation of smog and can lead to acid rain, which impacts crops, forests and aquatic species and contributes to the acidification of both soils and oceans. The acidification of soils from acid deposition reduces nutrient availability limiting above and below ground biomass production. This prevents carbon sequestration and reduces the effectiveness of the second largest global carbon sink. Preventing further soil degradation and allowing soil restoration could lead to the removal of 63 billion tons of carbon.

Our Environmental Additives portfolio has, for over 25 years, enabled cleaner operation of refineries by allowing for significantly reduced SOx, NOx, and CO emissions from the

refinery, with zero capital investment required. We continue to innovate and invest to make these materials even more efficient than today's existing technologies.

Super DESOX products eliminate, on average 80-90% of the SOx emissions from an FCC. Assuming a typical PUF of 20 lbs SO2/lb additive used, we estimate that our products have eliminated over 18k metric tons of SO2 in 2020.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Grace currently uses a qualitative and not quantitative analysis to assess and prioritize risks which may result in a significant impact to revenue or cost of operations.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Grace continues to invest in the development of new technologies capable of leveraging existing infrastructure and alternative renewable raw materials to meet increasingly stringent regulatory requirements and shifting consumer demand.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced indirect (operating) costs

Company-specific description

Grace facilities require significant amount of energy for our chemical manufacturing processes. Emerging regulations restricting emissions allowances through a carbon pricing system are also expected to increase our operating costs in the short-to-medium term. Investment in and implementation of productivity projects provide Grace with a competitive advantage through emissions and operating cost reductions.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

500,000

Potential financial impact figure – maximum (currency)

1,500,000

Explanation of financial impact figure

The reported financial impact represents 2020 monetary cost savings from Grace's productivity projects at our facilities designed to meet our sustainability goals of reducing emissions, water consumption and waste generation. These projects include natural gas usage reduction, calciner optimization and compressed air reduction

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Grace has integrated an internal projected price of carbon into capital planning processes to promote investment in projects that will reduce emissions and increase efficiency of our facilities, particularly those under carbon pricing schemes. For example,

Grace installed and operates a combined heat and power plant at our Worms, Germany site which provides 95% of the facility's electricity requirement.

Comment

C3. Business Strategy

C3.1

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

Yes

C3.1b

(C3.1b) Does your organization intend to publish a low-carbon transition plan in the next two years?

	Intention to publish a low-carbon transition plan	Intention to include the transition plan as a scheduled resolution item at Annual General Meetings (AGMs)	Comment
Row 1	Yes, in the next two years	No, we do not intend to include it as a scheduled AGM resolution item	We plan on starting with a transition to a low-carbon future in line with TCFD over the next few years. We will be looking at a longer time horizon in the future.

C3.2

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

Yes, qualitative and quantitative

C3.2a

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

Climate-related scenarios and models applied	Details
IEA Sustainable development scenario IEA CPS	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

Other, please specify WRI Aqueduct Floods	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 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. Grace is investing heavily into 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.

C3.3

(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 Polytrack®. PHONOSORB® adsorbents made with 3A zeolite synthetic molecular sieves

		prevent moisture accumulation in multi-pane glass windows and allow window manufacturers to meet the EU's quality requirements for reducing energy usage for heating and cooling. Graces DeNOx line of additives assist refineries in the catalytic reduction of NOx emissions to support environmental compliance and reduce facility wide emissions. Graces EnRich GT 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	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 continues to invest heavily in R&D and the acquisition 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. One 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.

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 Indirect costs Capital expenditures Capital allocation Acquisitions and divestments	Text field [maximum 7,000 characters] Over the short term time horizon, Grace has aligned our growth 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. 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. 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.

C3.4a

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

The Grace Value Model defines how Grace creates and delivers value to customers, investors, and employees. Our focused portfolio and customer-driven innovation enable us to meet the needs of our customers in a carbon constrained world. Through operating excellence and disciplined capital allocation Grace continually improves through critical investments in resource intensity reduction, energy efficiency and cost reduction projects that ensure our

facilities will be competitive. Among our key growth drivers are the demand for stricter environmental standards and an increasing global focus on sustainability.

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

Year target was set

2020

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Base year

2019

Covered emissions in base year (metric tons CO2e)

751,449

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)

100

Target year

2029

Targeted reduction from base year (%)

22

Covered emissions in target year (metric tons CO2e) [auto-calculated]

586,130.22

Covered emissions in reporting year (metric tons CO2e)

632,676.99

% of target achieved [auto-calculated]

71.8442333049

Target status in reporting year

New

Is this a science-based target?

Yes, we consider this a science-based target, but it has not been approved by the Science-Based Targets initiative

Target ambition

Please explain (including target coverage)

We are committed to cutting energy consumption and associated greenhouse gas emissions by improving energy efficiency and sourcing energy from renewables. In 2020, Grace established a target to reduce Scope 1 and Scope 2 Greenhouse gas (GHG) emissions by 22% from a 2019 baseline by 2029 resulting in a 2.2% year over year reduction to align with CDP guidance on Science-Based Targets.

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	0	0
To be implemented*	0	0
Implementation commenced*	23	0
Implemented*	10	0

Not to be implemented	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)

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

1,000,000

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

Payback period

11-15 years

Estimated lifetime of the initiative

21-30 years

Comment

At this time, we do not track emissions savings for initiatives.

C4.3c

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

Method	Comment
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.

Internal price on carbon	Grace has also adopted a 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 or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

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

Level of aggregation

Group of products

Description of product/Group of products

Products that avoid GHG emissions in the use phase of the final product.

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

Avoided emissions

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

Other, please specify

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

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

4

Comment

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-performance plastic resins made with Grace's Polytrack® polypropylene catalysts, because of their inherent strength, require less polymer per article, reducing the weight of automobile parts, thereby improving vehicle fuel efficiency, and reducing emissions. PHONOSORB® adsorbents made with 3A zeolite synthetic molecular sieves prevent moisture accumulation in multi-pane glass windows and allow window manufacturers to meet the EU's quality requirements for reducing energy usage for heating and cooling. Graces DeNOx line of additives assists refineries in the catalytic

reduction of NOx emissions to support environmental compliance and reduce facility wide emissions. Graces EnRich GT Catalysts enable drop in biofuels that can be used in conventional engines and existing refining infrastructure to economically convert renewable feedstocks into transportation fuels.

C5. Emissions methodology

C5.1

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

Scope 1

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

571,329.53

Comment

Grace is establishing its base year emissions in alignment with CDP guidance for 2020. In 2020, we improved our data collection and emissions calculation methodologies. This reporting year we are also excluding 'non-industrial buildings'.

Scope 2 (location-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

160,648.84

Comment

Grace is establishing its base year emissions in alignment with CDP guidance for 2020. In 2020, we improved our data collection and emissions calculation methodologies. This reporting year we are also excluding 'non-industrial buildings'.

Scope 2 (market-based)

Base year start

January 1, 2019

Base year end

December 31, 2019

Base year emissions (metric tons CO2e)

170,326.59

Comment

Grace is establishing its base year emissions in alignment with CDP guidance for 2020. In 2020, we improved our data collection and emissions calculation methodologies. This reporting year we are also excluding 'non-industrial buildings'.

C5.2

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

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

US EPA Mandatory Greenhouse Gas Reporting Rule

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)

517,327.46

Comment

In 2020, Grace reported 10% reduction in Scope 1 emissions from 2019. Grace's global production volume dropped by 8% from 2019 primarily because of the COVID-19 pandemic. We expect a slight increase in our Scope 1 emissions for 2021 as our production operations normalize.

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

114,115.39

Scope 2, market-based (if applicable)

115,349.53

Comment

In 2020, Grace reported a 34% reduction in Scope 2 emissions from 2019. This was driven by energy emission initiatives (i.e. combined heat and power plant go-live at our Curtis Bay facility accounting for 15% of Grace's total reduction) and reduced purchased electricity and purchased steam reduction at our facilities due to the COVID-19 pandemic. We expect a slight increase in our Scope 2 emissions in 2021 as our production operations normalize.

C6.4

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

Yes

C6.4a

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

Source

Sales offices and warehouses within our operational control.

Relevance of Scope 1 emissions from this source

No emissions from this source

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

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

Emissions are not relevant

Explain why this source is excluded

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

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

1,107,132.8

Emissions calculation methodology

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 spend associated with all purchased goods and services to estimate Category 1 emissions. The Grace procurement team provided spend data associated with all purchased goods and services for calendar years 2019 and 2020 then categorized spend into subcategories based on the type of purchase (i.e., capital good, standard good, or service), as well as the relevant sector (outlined in Tables 5 and 6 of this memo) to provide an input for the tool.

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO2e

65,176.75

Emissions calculation methodology

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 spend noted as capital goods during the categorization exercise associated with Category 1 to estimate emissions for Category 2.

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

Evaluation status

Relevant, calculated

Metric tonnes CO2e

152,490.41

Emissions calculation methodology

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 2019 and 2020 greenhouse gas inventories as input.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

0

Emissions calculation methodology

Emissions estimated using WRI Scope 3 Evaluator Tool.

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

0

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

Metric tonnes CO2e

24,898.42

Emissions calculation methodology

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 spend on waste management services to estimate the emissions associated with Category 5. The Grace team provided total spend on waste management utilities as input.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

785.1

Emissions calculation methodology

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. Additionally, Grace provided the total spend via Concur associated with rental vehicles. This was also used as input as part of a hybrid approach.

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

6,290

Emissions calculation methodology

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

Metric tonnes CO2e

5,947.66

Emissions calculation methodology

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. See the Assumptions section for more details.

Processing of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

678,967.84

Emissions calculation methodology

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. It was determined by the Grace team that while Grace's products are used in third-party manufacturing processes, many are recovered at the

conclusion of the process and therefore should not be included in this category as an emission source (e.g., catalysts associated with fuel manufacturing). To provide an input for Category 10, Grace provided total weight of product associated with Specialty Catalysts and Materials Technology which are sold to third parties and used as inputs for their products (e.g., additives for paints).

Use of sold products

Evaluation status

Not relevant, explanation provided

Please explain

There are no emissions associated with WR Grace's products after they are sold and therefore this category is not relevant.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

95,001.44

Emissions calculation methodology

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 associated with relevant products to estimate the emissions associated with Category 12. Similar to Category 10, some of Grace’s products are recovered at the conclusion of the process and therefore should not be included in this category as an emission source (e.g., catalysts associated with fuel manufacturing). Alternatively, products that are sold and not recovered were considered relevant for this category and therefore the revenue for Specialty Catalysts and Materials Technology as reported in the 2020 and 2021 10K filings were used as inputs for the tool.

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.

C6.7

(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

0.000286

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

632,676.99

Metric denominator

unit total revenue

Metric denominator: Unit total

2,211,900,000

Scope 2 figure used

Market-based

% change from previous year

5

Direction of change

Increased

Reason for change

As part of our ongoing efforts to measure our environmental impact, we invested in improving our data tracking and calculation methodology. Due to this we have seen meaningful improvement in the quality of our emissions values and expect they will remain comparable in future reporting years.

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 all ART revenue to align with graces operational control over all production.

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	505,880.96	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	240.83	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	229.09	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	10,015.73	Other, please specify California Air Resource Board
Other, please specify Mix of various refrigerants, process emissions, and other greenhouse gases	0	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Americas	348,631.04
Europe, Middle East and Africa (EMEA)	157,222.53
Asia Pacific (or JAPA)	8,391.48
Other, please specify Latin America	3,082.41

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)
Advanced Refining Technologies (ART)	35,530.21
Refining Technologies (RT)	262,672.11
Specialty Catalysts (SC)	11,835.02
Material Technologies (MT)	202,816.81
Administrative	4,473.31

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
Curtis Bay	85,285.94	39.21	-76.57
Lake Charles	122,192.51	30.16	-93.34
Worms	123,131.51	49.66	8.36
Rest of World	186,717.51	39.19	-76.9

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Administrative	4,473.31
Non-Administrative	512,854.15

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	512,854.15	This reporting year we are excluding 'non-industrial buildings' in alignment with CDP guidance for 2020.

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Americas	94,414.14	94,402.52	14,652.02	0

Europe, Middle East and Africa (EMEA)	4,846.44	6,092.2	17,642.4	0
Asia Pacific (or JAPA)	11,874.54	11,874.54	7,655.44	0
Other, please specify Latin America	2,980.27	2,980.27	73,038.13	0

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)
Advanced Refining Technologies (ART)	7,563.33	7,681.21
Refining Technologies (RT)	55,915.11	56,509.04
Specialty Catalysts (SC)	2,519.33	2,550.56
Material Technologies (MT)	43,173.69	43,689.04
Administrative	4,943.92	4,919.68

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)
Curtis Bay	16,497.4	16,414.71
Lake Charles	33,145.158	33,053.245
Worms	594.412	350.15
Rest of World	63,878.42	65,531.42

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	4,943.92	4,919.68
Non-Administrative	109,171.46	110,429.84

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	109,171.46	110,429.84	This reporting year we are excluding 'non-industrial buildings' in alignment with CDP guidance for 2020.

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	34.94	WRI Scope 3 Evaluator Tool 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?

Decreased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	Utilities are continuing to expand renewable offerings through PPAs and the issuance of Renewable Energy Certificates. Grace is continuing to explore incorporating these options into its current energy mix. We have sourced significant portions of our energy from geographic locations that have integrated renewable energy sources into the general power grid.
Other emissions reduction activities	28,492.17	Decreased	96	The completion of key energy efficiency projects at several facilities resulted in an estimated reduction of 28492.17 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 baseline emissions through 100 – ((28,492/751488)*100) = 96
Divestment	0	No change	0	

Acquisitions	0	No change	0	
Mergers	0	No change	0	
Change in output	60,115.89	Decreased	91	The global COVID-19 pandemic had an impact on our global manufacturing and administrative operations. The number of onsite personnel, demand for our products all impacted the volume of finished goods produced and the amount of utilities used at administrative sites. In aggregate we estimate the total reduction in utility consumption to be approximately 60,115.89 MT CO2e based on the reduction in the production of finished goods and the 12% reduction in revenue through 100 – (60115.89/633122.5)*100) = 91.
Change in methodology	21,454.21	Decreased	97	Changes in methodology, improved data collection including regional emission factors that align to updated eGrid values lead to a decrease in reported emissions from 2019 to 2020. Our total Scope 1 and Scope 2 emissions in 2019 summed to 633122, therefore we arrived at 97% through 100 –((21835/633122)*100) = 97%.
Change in boundary	0	No change	0	
Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	0	No change	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	No

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	3,184,642.6	3,184,642.6
Consumption of purchased or acquired electricity		0	286,467.26	286,467.26

Consumption of purchased or acquired steam		0	98,405.27	98,405.27
Total energy consumption		0	3,569,515.12	3,569,515.12

C-CH8.2a

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

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	3,160,337.32
Consumption of purchased or acquired electricity		271,472.78
Consumption of purchased or acquired steam		98,405.27
Total energy consumption		3,530,215.36

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	Yes
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.

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

8,262.56

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.00025

Unit

metric tons CO2 per MWh

Emissions factor source

EPA 2020 Emissions Factors

Comment

Diesel fuel is used for both stationary and mobile combustion so average emission factor is provided.

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

2,262.96

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.00119

Unit

metric tons CO2 per MWh

Emissions factor source

EPA 2020 Emissions Factors

Comment

LPG is used for both stationary and mobile combustion so average emission factor is provided.

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

878.75

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.00018

Unit

metric tons CO2 per MWh

Emissions factor source

EPA 2020 Emissions Factors

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

2,885,020.87

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

387,133.68

Emission factor

0.00024

Unit

metric tons CO2 per MWh

Emissions factor source

EPA 2020 Emissions Factors

Comment

Fuels (excluding feedstocks)

Propane Liquid

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

498.44

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.00021

Unit

metric tons CO2 per MWh

Emissions factor source

EPA 2020 Emissions Factors

Comment

Propane fuel is used for both stationary and mobile combustion so average emission factor is provided.

C8.2e

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

Sourcing method

None (no purchases of low-carbon electricity, heat, steam or cooling)

Low-carbon technology type

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

MWh consumed accounted for at a zero emission factor

Comment

Our Curtis Bay facility has signed a power purchase agreement with Exxon to procure nuclear power for the site beginning 2021. This initiative is expected to significantly reduce Curtis Bay's energy consumption.

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

74,199.69

Metric numerator

MT

Metric denominator (intensity metric only)

% change from previous year

9.3

Direction of change

Increased

Please explain

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)

428,266

Capacity (metric tons)

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

1.47

Electricity intensity (MWh per metric ton of product)

8.33

Steam intensity (MWh per metric ton of product)

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	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Process step integration	Large scale commercial deployment	≤20%		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. 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 biodiesel fuels.

C10. Verification

C10.1

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

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

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

28.44

% of Scope 2 emissions covered by the ETS

4.72

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

65,229

Allowances purchased

58,250

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

% of Scope 1 emissions covered by the ETS

5.13

% of Scope 2 emissions covered by the ETS

5.93

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

25,371

Allowances purchased

1,000

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. 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.

C11.2

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

No

C11.3

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

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

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers

C12.1a

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

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

3

% total procurement spend (direct and indirect)

40

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

0

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, and townhalls.

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

Grace reviews its strategic suppliers based on several factors, including ESG/sustainability risk through EcoVadis. Based EcoVadis scorecard results and other factors, Grace determines which suppliers to engage for the upcoming year and/or if corrective actions need to be taken.

Grace is in the process of developing specific KPIs and success measures related to its supplier engagement.

Comment

Please note that while Grace onboarded EcoVadis in 2020, it conducted its first supplier assessment campaign and hosted its first engagement townhalls in 2021. Data provide is based on 2021.

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

% of suppliers by number

% total procurement spend (direct and indirect)

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

Rationale for the coverage of your engagement

We directly engage with suppliers through town halls where we discuss processes and associated feedback.

Impact of engagement, including measures of success

The discussion during these town halls is used to inform Grace's internal business decisions to enhance practices/processes.

Comment

C12.1b

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

Type of engagement

Collaboration & innovation

Details of engagement

Other, please specify

Develop innovative products that address our customers' sustainability requirements.

% of customers by number

49

% 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.

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
and is derived from products that improve processes by increasing the efficiency of the manufacturing process used to make a product. Here is an example:

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.

Grace is actively working to extend markets for equilibrium catalyst by taking a “design for recyclability” approach, pairing new innovative products that can operate complimentarily with equilibrium catalyst when our customers need it. In 2020, recycled equilibrium catalysts accounted for $94 million of Grace’s revenue.

C12.3

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

Trade associations

C12.3b

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

Yes

C12.3c

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

Trade association

American Chemistry Council

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s 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: https://www.americanchemistry.com/ACC-Climate-Policy-Principles.pdf

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

Grace participates in several committees throughout the organization.

Trade association

CEFIC

Is your position on climate change consistent with theirs?

Mixed

Please explain the trade association's 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.

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

Grace participates as a member of the organization.

Trade association

CAIC

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's 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.

The Canadian chemistry industry agrees that climate change is an urgent issue. Achieving Canada's emissions goals will require chemistry-based solutions in housing, transportation, energy storage, clean energy and numerous other applications. Canada's chemistry industry can continue to meet those needs with some of the lowest carbon chemistry pathways currently available and while attracting new investment in innovative products and processes to drive emissions even lower.

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

Grace participates through its commitment to Responsible Care® and implementation of the associated management system.

C12.3f

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

Grace has established a Government Relations group which is responsible for directing all political activity and coordinating company interactions with Government Officials in all countries in which Grace conducts business. The Vice President of Government Relations and Environment Health and Safety is also our chief corporate officer responsible for developing and implementing climate change related policies. We have established mechanisms, such as our EHS policy and Responsible Care Management system, to ensure that activity seeking to externally influence policy agendas aligns with the company's commitments and strategic objectives.

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 communications

Status

Complete

Attach the document

Grace-2020-SAB-Report.pdf

Page/Section reference

1-8

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

C15. Signoff

C-FI

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

C15.1

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

	Job title	Corresponding job category
Row 1	Senior Vice President Public Affairs & Environment Health and Safety, Chief Sustainability Officer	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	2,211,900,000

SC0.2

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

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	US	38388F1084

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

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

373.34

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

83.05

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

Allocation level
Company wide

Allocation level detail

Emissions in metric tonnes of CO2e
11,497.34

Uncertainty (±%)

Major sources of emissions
Utilities

Verified
No

Allocation method
Allocation based on the volume of products purchased

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

Allocation level
Company wide

Allocation level detail

Emissions in metric tonnes of CO2e
2,537.68

Uncertainty (±%)

Major sources of emissions
Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

880.6

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

Allocation level
Company wide

Allocation level detail

Emissions in metric tonnes of CO2e
196.09

Uncertainty (±%)

Major sources of emissions
Utilities

Verified
No

Allocation method
Allocation based on the volume of products purchased

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

Allocation level
Company wide

Allocation level detail

Emissions in metric tonnes of CO2e
186.4

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

41.52

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

691.59

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

Allocation level
Company wide

Allocation level detail

Emissions in metric tonnes of CO2e
154.56

Uncertainty (±%)

Major sources of emissions
Utilities

Verified
No

Allocation method
Allocation based on the volume of products purchased

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

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail

Emissions in metric tonnes of CO2e
2,209.33

Uncertainty (±%)

Major sources of emissions
Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

OMV AG

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

484.46

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

144.95

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

32.29

Uncertainty (±%)

Major sources of emissions
Utilities

Verified
No

Allocation method
Allocation based on the volume of products purchased

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

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail

Emissions in metric tonnes of CO2e
7.9

Uncertainty (±%)

Major sources of emissions
Utilities

Verified
No

Allocation method
Allocation based on the volume of products purchased

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

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

Stearinerie Dubois

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

Emissions in metric tonnes of CO2e

1.76

Uncertainty (±%)

Major sources of emissions

Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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

Allocation level
Company wide

Allocation level detail

Emissions in metric tonnes of CO2e
429.3

Uncertainty (±%)

Major sources of emissions
Utilities

Verified
No

Allocation method
Allocation based on the volume of products purchased

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

Allocation level
Company wide

Allocation level detail

Emissions in metric tonnes of CO2e
95.62

Uncertainty (±%)

Major sources of emissions
Utilities

Verified

No

Allocation method

Allocation based on the volume of products purchased

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

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).

No published information is being referenced in our response

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

Please confirm below

I have read and accept the applicable Terms