

Welcome to your CDP Climate Change Questionnaire 2019

C0. Introduction

C0.1

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

Owens Corning is a global leader in insulation, roofing, and fiberglass composite materials. Its insulation products conserve energy and improve acoustics, fire resistance, and air quality in the spaces where people live, work, and play. Its roofing products and systems enhance curb appeal and protect homes and commercial buildings alike. Its fiberglass composites make thousands of products lighter, stronger, and more durable. Owens Corning provides innovative products and solutions that deliver a material difference to its customers and, ultimately, make the world a better place. The business is global in scope, with operations in 33 countries. It is also human in scale, with 20,000 employees cultivating local and longstanding relationships with customers. Based in Toledo, Ohio, USA, the company posted 2018 sales of \$7.1 billion. Founded in 1938, it has been a Fortune 500® company for 64 consecutive years. For more information, please visit www.owenscorning.com.

C0.2

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

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Row 1	January 1, 2018	December 31, 2018	Yes	3 years

C0.3

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

- Belgium
- Brazil
- Canada
- Chile
- China
- Czechia
- Finland
- France
- India
- Italy

- Lithuania
- Mexico
- Netherlands
- Poland
- Republic of Korea
- Russian Federation
- Singapore
- Spain
- Sweden
- United Kingdom of Great Britain and Northern Ireland
- 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 consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.

Operational control

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 complete Board of Directors monitors Owens Corning's progress against sustainability and climate change. Sustainability is embedded in the company from the products we make to the actions we drive within the communities we operate. Specific

	<p>responsibility for climate change and sustainability in general lies with the Audit Committee of the Board of Directors. According to the Audit Committee Charter(http://s21.q4cdn.com/855213745/files/doc_downloads/committee_charters/Audit-Committee-Charter-(revised-2015-09-17).pdf): The Committee is responsible to review the impact of significant regulatory changes, proposed regulatory changes and accounting or reporting developments, including significant reporting developments related to the principles of sustainability.</p> <p>The Audit Committee was chosen to be responsible for climate-related issues due to their additional responsibilities overseeing risk for Owens Corning.</p>
Director on board	<p>The complete Board of Directors monitors Owens Corning’s progress against sustainability. Sustainability is embedded in the company from the products we make to the actions we drive within the communities we operate. The Audit Committee of the Board of Directors also has accountability for sustainability. The Audit Committee was chosen to be responsible for climate-related issues due to their additional responsibilities overseeing risk.</p> <p>Per the Directors’ Code of Conduct: Owens Corning is committed to the principles of sustainability. As used in this Directors’ Code, the term “sustainability” includes the concepts of: personal safety; environmental compliance; product stewardship; and the environmental and social impact of our global operations and the products we make and sell. Directors are expected to provide oversight, guidance and direction on sustainability issues and opportunities that have potential impact on the reputation and long-term economic viability.</p>

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 – all meetings	<ul style="list-style-type: none"> Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans 	<p>The complete Board of Directors monitors Owens Corning’s progress against sustainability, including GHG emissions and energy usage. Sustainability is embedded in the company from the products we make to the actions we drive within the communities we operate. GHG emission and energy usage reduction are two of our 2020 sustainability goals. The board oversees our performance related to these goals, was part of the CSR strategy that set them, and approves annual financial incentive of high level employees - including those tied to sustainability goals. Major acquisitions, capital projects and innovation are all reviewed by the board. Impact on</p>

	Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	our CSR strategy is considered in each of these areas through our risk register review and product stewardship review processes. The audit committee is responsible for all risk management policies - including climate-related risks. These risk management policies include current regulations, potential regulation changes, acute and chronic physical risks, and other climate related-issues. Climate related issues are a scheduled agenda item annually at a minimum and additionally as needed.
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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).

We have a sustainability governance structure to discuss and make decisions on all issues related to economic, environmental and social aspects. The complete Board of Directors monitors Owens Corning’s progress against sustainability and assigns tasks to senior management.

Specific responsibility for climate change and sustainability in general lies with the Audit Committee of the Board of Directors. According to the Audit Committee Charter([http://s21.q4cdn.com/855213745/files/doc_downloads/committee_charters/Audit-Committee-Charter-\(revised-2015-09-17\).pdf](http://s21.q4cdn.com/855213745/files/doc_downloads/committee_charters/Audit-Committee-Charter-(revised-2015-09-17).pdf)): The Committee is responsible to review the impact of significant regulatory changes, proposed regulatory changes and accounting or reporting developments, including significant reporting developments related to the principles of sustainability.

The Audit Committee was chosen to be responsible for climate-related issues due to their additional responsibilities overseeing risk for Owens Corning.

Per the Directors' Code of Conduct: Owens Corning is committed to the principles of sustainability. As used in this Directors' Code, the term "sustainability" includes the concepts of: personal safety; environmental compliance; product stewardship; and the environmental and social impact of our global operations and the products we make and sell. Directors are expected to provide oversight, guidance and direction on sustainability issues and opportunities that have potential impact on the reputation and long-term economic viability.

Sustainability is embedded in the company from the products we make to the actions we drive within the communities we operate. In 2007 Owens Corning appointed Frank O'Brien-Bernini as the Chief Sustainability Officer (CSO). Mr. O'Brien-Bernini reports directly to the CEO with accountability for the Corporation's compliance with environmental, safety, health, & sustainability matters. Reporting directly to the CSO within Owens Corning is a sustainability organization with approximately 40 employees. These employees are accountable for product & supply sustainability, building science, corporate toxicology, product stewardship, operations sustainability & Environmental Health & Safety.

The audit committee, the CEO, and the CSO all work together to perform the following roles:

1. Creating Sustainability vision, values
2. Creating, maintaining, and promoting the Sustainability Strategy and policies
3. Redefining targets or goals

The CSO and his organization are responsible for performance monitoring and reporting. Our environmental metrics and data are monitored using Schneider Electric's Resource Advisor system. Data is input into the system where it can be reviewed and analyzed. Owens Corning has a Enterprise Environmental and Operations Sustainability Director reporting to the CSO who works directly with the environmental leaders of each of our businesses to monitor all climate-related issues throughout the company. In addition to the business level reviews, Owens Corning's Sustainability and Reporting Analytics team monitors the company's climate-related issues from a data perspective.

Furthermore, climate-related issues are addressed through our risk management process and included in our risk registers, which are developed by the business and legal from the plant level up.

C1.3

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

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).

Who is entitled to benefit from these incentives?

Chief Executive Officer (CEO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Monetary rewards for the CEO and the corporate executive team are based on progress to our 2020 energy/emission reduction goals. This is part of our executive performance objectives, which impact variable incentives for executives within the Science and Technology Organization, each business unit, as well as our corporate sustainability function. This includes individuals such as Mike Thaman, CEO and Chairman of the Board in 2018, Brian Chambers - President and CEO since April 2019, Frank O'Brien-Bernini – VP and Chief Sustainability Officer, Luis Martens – VP of Global Operations GRS, David Rabuano - VP of Operations Insulation, Bob Marks – VP of Roofing Operations, Jose Mendez-Andino – VP R and D Insulation as it relates to our 2020 Goals to reduce Energy Intensity and GHG Intensity by 20% and 50% respectively.

Who is entitled to benefit from these incentives?

Chief Sustainability Officer (CSO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Monetary rewards for the CEO, CSO and the corporate executive team are based on progress to our 2020 energy/emission reduction goals. This is part of our executive performance objectives, which impact variable incentives for executives within the Science and Technology Organization, each business unit, as well as our corporate sustainability function. This includes individuals such as Mike Thaman, CEO and Chairman of the Board in 2018, Brian Chambers - President and CEO since April 2019 , Frank O'Brien- Bernini – VP and Chief Sustainability Officer, Luis Martens – VP of Global Operations GRS, David Rabuano - VP of Operations Insulation, Bob Marks – VP of Roofing Operations, Jose Mendez-Andino – VP R and D Insulation as it relates to our

2020 Goals to reduce Energy Intensity and GHG Intensity by 20% and 50% respectively.

Who is entitled to benefit from these incentives?

Corporate executive team

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Monetary rewards for the CEO, CSO and the corporate executive team are based on progress to our 2020 energy/emission reduction goals. This is part of our executive performance objectives, which impact variable incentives for executives within the Science and Technology Organization, each business unit, as well as our corporate sustainability function. This includes individuals such as Mike Thaman, CEO and Chairman of the Board in 2018, Brian Chambers - President and CEO since April 2019, Frank O'Brien- Bernini – VP and Chief Sustainability Officer, Luis Martens – VP of Global Operations GRS, David Rabuano - VP of Operations Insulation, Bob Marks – VP of Roofing Operations, Jose Mendez-Andino – VP R and D Insulation as it relates to our 2020 Goals to reduce Energy Intensity and GHG Intensity by 20% and 50% respectively.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	1	3	
Medium-term	3	6	
Long-term	6	100	

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Six-monthly or more frequently	>6 years	The risk committee meets semi-annually to review the emerging risks and their potential impact to the company as well as review existing risk aspects, add any new risks being identified from internal or external sources and update any risks which are no longer considered applicable to the businesses. The risk committee also reviews the mitigation actions and outputs for the annual cycle.

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

Owens Corning looks at all risks, including climate-related risks, through essentially the same process. At the asset level, our business units (BUs) create business specific risk registers which are used in their Strategic and Operational Planning processes. In creating these registers, the BUs identify internal and external factors that could pose threats and opportunities to their business. They evaluate the potential impact and likelihood, and then establish management plans to mitigate the risk.

Of the risks that we monitor, Owens Corning has established three levels for value impact. The lowest level are those risks where the company can absorb the financial impact, and the reputational impact is relatively non-existent. The next level is moderate financial impact, with a potential to be known by the public or to damage our reputation. The highest level is significant financial impact and or reputational damage, with the potential to be catastrophic to the organization. All three levels of risks have been determined important to monitor, but those in the moderate and significant levels are defined as having substantive financial impact.

At the company level, Owens Corning has a risk committee that considers significant risk. The risk registers from the individual BUs as well as legal are consolidated and evaluated for the company as a whole. The company and BUs use risk maps as a risk analysis tool. They also use correlation analysis, sensitivity analysis and stress testing. Risk are retained, reduced/transferred or avoided.

. The various types of risks are outlined as follows:

- Risks retained (risk exposure is accepted without further mitigation): raw material inflation, employment practices, political risks, trade credit & privacy & cyberliability
- Risks reduced/transferred (risk exposure is reduced or transferred to others or consequences are reduced): Property Damage, Product Liability, Cargo, General/Casualty Liability, Directors & Officers, Fiduciary, & Crime
- Risks avoided (risk exposure will be eliminated entirely, e.g., through ceasing a business): liquidity risk-refinanced debt

There are also efforts for identifying risks & opportunities with respect to climate change that are coordinated through the Sustainability organization by on-going work with each BU to identify & address opportunities & identify & reduce risk through:

1. Operations Sustainability
2. Product & Supply Chain Sustainability
3. Innovation & collaboration to deliver energy efficiency & durable material solutions at scale
4. Employee safety, health & engagement & community vitality

The company has a risk committee that considers significant risk to the corporation. They have a process in which they:

1. Review the Owens Corning Risk Register substantiated by business and functional reviews. The risks are prioritized based on their placement on the register. The Y-axis is a measure of financial impact and the X-axis is a measure of probability of occurrence. A risk, for example, located toward the upper left of the risk map would be indicative of risk that is high in financial impact but low in probability. Additional prioritization is provided by color coding. Risks plotted in green indicates that level of exposure is acceptable, while yellow indicates mitigation plans are actively in place, and red indicates that improved risk mitigation is needed.
2. Align around key mitigation programs – Based on the Risk assessment register outputs, the risk committee identifies the various mitigation actions to be taken and a planned approach is taken towards implementing them through the businesses.
3. Review Risk Register with Executive Committee – All risk assessment results and outputs are reviewed by the executive committee and feedback received is incorporated in the action register and also reflected in the mitigation planning.
4. Meet semi-annually as a Risk Committee – The risk committee meets semi-annually to review emerging risks and their potential impact to Owens Corning as well as review the existing risk aspects, add any new risks being identified from internal or external sources and update any risks which are no longer considered applicable the businesses. The risk committee also reviews the mitigation actions and outputs for the annual cycle.
5. Provide yearly update to Owens Corning Board of Directors.

C2.2c

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Our risk committee always reviews a minimum of 20 different key risk types, including evaluating Global Political Risk, which includes government action related to public policy or events, current regulations, and emerging regulations, and Loss of Tax Assets due to changes in regulation. An example of current regulation risk for Owens Corning is the updated Florida Building Energy Code, which allows for the

		<p>construction of a less efficient home simply because it comes with solar panels. There is a risk that this regulation will reduce home builders use of energy saving construction materials such as Owens Corning insulation and foam board.</p>
Emerging regulation	Relevant, always included	<p>Our risk committee always reviews a minimum of 20 different key risk types, including evaluating Global Political Risk, which includes government action related to public policy or events, current regulations, and emerging regulations, and Loss of Tax Assets due to changes in regulation. One example of emerging regulation risk identified is the California 2019 Building Energy Efficiency Standards (BEES). Owens Corning promoted a coalition of the insulation industry, environmental groups, affordable housing groups, labor, and utilities to put in place barriers to trading off PV and Storage for high ROI/persistent energy efficiency in the draft 2019 BEES. We further worked with the CA-based Passive House advocates to promote this Passive House as a compliance path in the next code cycle (2022) and in CALGreen.(CA's green code).</p>
Technology	Relevant, always included	<p>Our risk committee always reviews a minimum of 20 different key risk types, including evaluating technology related risk types such as IT Infrastructure, IT Risk, and Intellectual Property. However, technology risks underpin many other risk types, including Competitive threats - the risk of technological innovation by our competitors, energy costs - how do technology changes impact our energy procurement costs, Supply Chain - do technological innovations put our supply chain at risk compared to our competitors, and others. Some risks identified and reviewed include the risks of competitors developing new roofing shingles that perform better than our Duration and Weatherguard shingles in extreme climates, the development of low carbon products better than our current insulation product line, and the development of alternative materials other than fiberglass used in the manufacture of wind turbine blades.</p>
Legal	Relevant, always included	<p>Our risk committee always reviews a minimum of 20 different key risk types, including evaluating Competition Laws, Anti-Corruption and other Compliance, Intellectual Property, Product Liability and Fraud. There is a separate legal risk register prepared and reviewed as part of our risk management process.</p> <p>Legal risks related to climate change and environmental issues are always a major part of our risk evaluation and discussion. One example of this is the risk of product related litigation. Owens Corning has a rigorous product stewardship process that ensures that all products (new and existing) are safe for employees to make, safe for consumers, perform as intended, and can be disposed of responsibly with a minimal impact on climate change. As part of our product stewardship process, developers are asked to complete a</p>

		<p>questionnaire that generates a sustainability map of the product throughout its life cycle. This Sustainability Mapping Tool is used to evaluate how the new product or process will impact the Company's sustainability goals and to drive decisions in the design phase that will achieve a portfolio of more sustainable products. Summary reports from these assessments identifying trends and opportunities are published on a quarterly basis. Recent Owens Corning products that have gone through this Sustainability Tool mapping process include Sustaina® non-woven glass fiber fabric and Pure Safety® high-performance insulation.</p>
Market	Relevant, always included	<p>Our risk committee always reviews a minimum of 20 different key risk types, including evaluating market related risks like Trade Credit Risk, Talent risk (losing key personnel to other players in the market), Liquidity (driven partly by market factors), and also risks of changing customer preference and demand.</p> <p>Specific to climate change, we evaluate the risks of worsening climate change conditions causing us to lose customers and sales to competing solutions. Shifts in customer preference and demand away from Owens Corning products like Foam or fiberglass insulation to competing or new solutions could have a negative impact on our results.</p>
Reputation	Relevant, always included	<p>Our risk committee always reviews a minimum of 20 different key risk types, including evaluating reputational risks. A fundamental part of Owens Corning's strategy is that of our reputation as a global provider of energy saving products that are environmentally safe to use and that make the world a better place. Our published sustainability report, submissions to CDP and DJSI and other organizations are all about telling our sustainability story and ensuring that our reputation is built on our actions to save energy and combat climate change. Our philanthropic focus on housing and shelter aligns with our three goals of supporting our company's growth agenda, building a positive reputation within Owens Corning communities, and engaging our employees. For example, we have a current three-year partnership with Habitat for Humanity International, which supports neighborhood revitalization in Owens Corning communities across the U.S. and internationally. We donate building materials, provide financial support through the Owens Corning Foundation, and leverage employee volunteerism to provide safe and energy efficient housing for those in need in our communities. In partnership with Habitat for Humanity, Owens Corning helped to complete 47 home builds or renovations in 2018 in the U.S., Canada, and China, which was a 68% increase over 2017. Reputational risk driven by climate change is therefore an important part of our risk management process.</p>

Acute physical	Relevant, always included	Risks of acute physical risks like adverse weather and similar natural disasters are always included in our evaluation of risks. Much effort has been spent creating mitigation plans and scenarios to ensure that customer needs are met even in the event of a plant being down due to a climate change related acute physical event. Owens Corning had examples in the recent past where Hurricane Sandy damaged our Kearny roofing plant, and we had significant flooding in our Taloja, India, plant. The risk of disruption to customers due to a similar event, and our mitigation plans around it are always important points of consideration in our climate-related risk assessments.
Chronic physical	Relevant, always included	Chronic physical risks are included in our risk assessments, primarily in the impact of changing climate patterns on our plants. Long-term temperature change and changes in water availability are issues that we evaluate and discuss. We regularly consider the safety risks related to the forecasted impact of long-term changes in weather patterns. For example, we are concerned about the impact of heat-related illnesses in light of rising temperatures. We have experienced a rise in heat-related illnesses in our plants over the past few years, and have taken several actions to mitigate the risk of illness, including cold drink delivery to the plant floors at regular intervals. We include the costs of preventing heat-related illnesses, as well as the costs avoided through prevention, in our risk assessments and corresponding financial assessments. Living Safely is one of Owens Corning's core company values, and we are unconditionally committed to occupational health and safety.
Upstream	Relevant, always included	Raw material sourcing risks are included in Owens Corning's risk assessments. Risks to disruptions in our material supply due to climate-related disruptions (weather driven, regulatory, etc.) are included due to the impact on our production that any raw material disruption could have to our production of insulation, roofing, or composite materials. During recent hurricanes that impacted our plants in Houston and Fresno, TX, Atlanta and Savannah, GA, and Jacksonville and Lakeland, FL, Owens Corning employed upstream transportation mitigation plans devised as a result of risk planning.
Downstream	Relevant, always included	One downstream risk that is included in our climate-related risk assessments is the risk of transportation disruptions. Owens Corning uses distributors to sell our building materials products to consumers, and a disruption of transportation would put our relationship with our distributors at risk, as well as resulting in a potential loss of sales. During recent hurricanes that impacted our plants in Houston and Fresno, TX, Atlanta and Savannah, GA, and Jacksonville and Lakeland, FL, Owens Corning employed downstream transportation mitigation plans devised as a result of risk planning, including shipping from other Owens Corning plants.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

Owens Corning's risk identification and assessment process is outlined in C2.2b. The risk committee will meet with functional and business leaders throughout the organization to discuss the identified risks and manage corresponding action plans.

We have management action plans for each of our risks. For example, we have a plant in Tennessee located in a high earthquake and tornado zone. This plant is important to Owens Corning as it helps supply raw material to another business within the company as well as supply outside companies with this material. As a result, we have a plan in place that involves insurance, loss prevention, supply chain and our commercial teams to mitigate the losses in the event of a natural catastrophe. The plan includes having the appropriate amount of insurance, planning to convert other facilities to make similar product, making updates to the facility to help it withstand natural disasters and having appropriate contractual obligations with outside customers to supply a pro-rated amount of materials in the event of a disaster. This plan is reviewed and updated annually as circumstances change.

Our opportunity process, including climate related opportunities, is varied and wide. Examples of this include: Opportunities managed within the business, R&D, marketing, and our Front-End Innovation (FEI) team. FEI is a business strategy aligned corporate Innovation team designed to continuously fuel OC business pipelines with technology-based opportunities to enable growth or mitigate threats. FEI screens new emerging technologies, assessing and translating them into value for our businesses. Opportunities go through an approval process where legal, finance, supply chain, and marketing all have input before ultimate approval at the business leadership level. Any new products developed must go through our stringent product stewardship process, and each product will be evaluated for its net sustainability gains or losses compared with existing products.

Some examples of how we have followed our processes for managing climate change related risks and opportunities:

Transitional Risk - Broad and gradual tightening of limits on emissions by federal governments, the EPA, or State run EPAs could impact Owens Corning by causing a disruption in production capacity across our portfolio. Aggressive CO₂ regulations in Europe and other regions could disrupt our use of specific raw materials which in turn would disrupt our production capacity for products using those materials. One specific Owens Corning example would be the banning of certain blowing agents used in our XPS foam plants in North America and Asia. If that occurred, we would be required to make certain capital investments at our plants to use alternative blowing agents. Because we believe the likelihood of this identified risk is high in the long term, we have been working on new foam blowing agent blends with lower GWP that could be used with our existing equipment, and we have also begun preparing for the eventual capital upgrades needed to run our lines with lower GWP blowing agent.

Physical Risk - Climate Related increases in natural disasters can disrupt our production with some products produced at limited numbers of locations. Historically, our roofing shingles of the same color could not be mixed if made from different plants due to slight variations in color. Our

risk management process resulted in our development of regional roofing shingles that can be produced at multiple locations with consistent colors, allowing us to mix product from different plants in the event of an emergency at one of our facilities.

Transitional Opportunity – Owens Corning actively lobbies the U.S. DOE and other legislative bodies through its Governmental Affairs organization for increased energy conservation requirements. Risk and opportunities evaluation by the businesses determined that more aggressive building codes can help drive the use of Owens Corning's products, to save customers energy and reduce GHG emissions. We estimate that aside from the benefit to consumers, Owens Corning could see upwards of \$200 million annually from new business.

Physical Opportunity - Demand for products in our roofing business is generally driven by both residential repair and remodeling activity and by new residential construction. As the effects of climate change are felt in the increased frequency and severity of storms, Owens Corning as a building materials company may see an increased demand for our products in our roofing business due to storm related roof damage. Evaluation of climate change related physical risks and opportunities have driven changes and expansion in production and marketing of specific Owens Corning products, like Weatherguard shingles, which are rated against high winds and storm activity, as well as helped drive the creation of new products like our Cool Shingles with reflective properties.

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

Transition risk

Primary climate-related risk driver

Policy and legal: Mandates on and regulation of existing products and services

Type of financial impact

Increased costs and/or reduced demand for products and services resulting from fines and judgments

Company- specific description

Broad and gradual tightening of limits on emissions by federal governments, the EPA, or State run EPAs could impact Owens Corning by causing a disruption in production capacity across our portfolio. For example, given our global nature, we are impacted by country specific/regional CO2 regulations for the majority of our businesses. Aggressive CO2 regulations in Europe and other regions could disrupt our use of specific raw materials which in turn would disrupt our production capacity for products using those materials.

One specific Owens Corning example would be the banning of certain blowing agents used in our XPS foam plants in North America and Asia. If that occurred, we would be required to make certain capital investments at our plants to use alternative blowing agents.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

30,000,000

Potential financial impact figure – maximum (currency)

38,000,000

Explanation of financial impact figure

\$5-6MM is the capital engineering estimate for converting each of 3 lines in China to the same BA we will use for Canada in 2021, though we may also have ways to reduce the capital spend through technology.

We have an additional investment of \$15-20MM to convert the remaining 4 foam lines in USA and the smaller Mexico line to the new blowing agent.

Management method

Our management action plan is to proactively expend R & D resources to deliver revised product formulations or to have additional engineering solutions in place prior to the enforcement date of the tighter restrictions. The goal would be to prevent government fines or loss of sales, and it may have the potential to change this risk into an opportunity for increased market share if our competition is behind in modifying their products. As part of the Product Stewardship process, developers are asked to

complete a questionnaire that generates a sustainability map of the product throughout its life cycle. This Sustainability Mapping Tool evaluates how a new product or process will impact our sustainability goals and drive decisions in the design phase for more sustainable products. In 2018, 73% of new products and 78% of new processes for our products show net sustainability gains, most frequently caused by product developments that improved our manufacturing footprint (lower plant air emissions, lower material consumption, lower energy usage and higher process efficiencies).

The management plan for foam for working on new blowing agent formulations and determining the best ways to convert our existing lines to a lower GWP formulation is budgeted at about \$2,000,000 per year. Out to our sustainability goal year of 2020, this gives us an estimate of about \$4,000,000.

Cost of management

4,000,000

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Market: Increased cost of raw materials

Type of financial impact

Abrupt and unexpected shifts in energy costs

Company- specific description

Owens Corning is at risk of significant impact to our reported financial results as a result of volatile energy costs or supply disruptions. We operate in environments where the flow of energy supply has regulations that can impact our performance (ie - China). In order to mitigate, we have a commodities risk management committee that oversees financial risk related to our energy supply pricing. We deploy location specific energy sourcing strategies and have an ongoing review of energy markets. We monitor and assess energy storage and distributed energy generation technology advancements. As part of a larger total productive maintenance initiative, we ensure energy transmission reliability for key manufacturing processes. One example of this is battery storage at one of our insulation plants to mitigate volatile energy costs.

Time horizon

Current

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

5,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Having a disruption in our energy supply, or a volatile pricing market, can have a wide range of financial impacts. For example, if a plant experiences a short downtime of energy, it could (in rare cases) cause our equipment to seize and lead to financial losses in the \$15MM range (although insurance would kick in and net the loss at \$5MM). We could also have changes in pricing that could be anywhere from a small loss to significant depending on our hedging of that commodity and ability to pass through cost.

Management method

Owens Corning is at risk of significant impact to our reported financial results as a result of volatile energy costs or supply disruptions. We operate in environments where the flow of energy supply has regulations that can impact our performance. In order to mitigate, we have a commodities risk management committee that oversees financial risk related to our energy supply pricing. We deploy location specific energy sourcing strategies and have an ongoing review of energy markets. We monitor and assess energy storage and distributed energy generation technology advancements. As part of a larger total productive maintenance initiative, we ensure energy transmission reliability for key manufacturing processes. One example of maintaining transmission reliability was working in partnership with a local utility after interruptions caused by animal contact with switch gear – specifically snakes. The utility invested in infrastructure to harden the local substation from animal contact. In conjunction with the plant, the utility upgraded the switching capabilities from the substation to the plant.

Cost of management is up to \$1 million for administration of monitoring programs, energy market reviews, etc., and for physical loss prevention improvements. As part of a larger total productive maintenance initiative, we ensure energy transmission reliability for key manufacturing processes.

Cost of management

1,000,000

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Enhanced emissions-reporting obligations

Type of financial impact

Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

Many of Owens Corning's products are made from heavy manufacturing processes. While Owens Corning continuously strives to be better than regulatory requirements, our factories do produce pollutants and carbon emissions. Owens Corning operates in countries throughout the world and currently is subject to the EU Emissions Trading Scheme (ETS), and other similar schemes. Expansions to the EU ETS, or similar trading schemes being setup in other nations could impact Owens Corning by increasing our operating costs in those countries by reducing our carbon allowances. Our stock of CO2 allowances may be depleted in 2020, which would require us to purchase additional allowances after 2021. We have twelve plants that are impacted by the EU ETS: Composites plants L'Ardoise, Chambéry, Besana, and Apeldoorn, and Insulation plants Tessenderlo, Klasterec, Hallekis, Hassleholm, Skovde, Parainen, Vilnius, and Trzemeszno. Both composite glass and insulation production create GHG and other air emissions. We have banked credits in the EU and have yet to need to purchase any additional credits, but the impact will be coming in the next few years.

Time horizon

Long-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

17,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

In Europe, our existing ETS program with our Composites and Insulation businesses have a risk for needing to purchase allowances, as it appears that our stock of CO₂ allowances will be depleted in 2021.

We estimate that we will see a shortage of about 50,000 MT CO₂ per year from 2021 to 2030. With an estimate of 30 euros/MT, we would have a potential impact of 1.5 million euros per year over that 10-year period, or approximately \$17 million at current exchange rates.

Management method

Owens Corning has a definite risk of running out of ETS allowances in the next 2 years. It is therefore important that we determine and track our current allowances, and estimate our future allowance needs. Our course of action in managing these risks involves several steps:

1. Interaction with the Commission in charge of defining the new allocation rules. In reviewing the rules under EU ETS Phase IV, we determined the Continuous Filament Glass Fiber sector qualifies to continue receiving free allowances until 2030, though that is not the case for other products.
2. Using estimates for future production for our plants, we are able to calculate estimated associated emissions, and then calculate how much in allowances we will need to purchase in future years.

Our current management outcomes for our EU plants has been that we have not needed to purchase allowances yet; however, our calculations show that this will not be the case in the next couple of years.

A primary way we have been managing this risk is by emission reduction activities. In 2018, we implemented 32 projects, generating energy savings of over 59,000 MWh and reducing more than 16,500 MT of GHG emissions/year. Generally, we invest in energy/GHG reduction projects costing about \$3MM per year company wide.

Cost of management

3,000,000

Comment

Owens Corning invests in the communities where we operate at the plant level, corporately, and through the Owens Corning Foundation. These investments include product donations, employee volunteering, and direct financial support. Owens Corning also has a variety of energy and greenhouse gas reduction projects ongoing and in the pipeline.

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

More aggressive building codes and regulations regarding energy efficiency drive the use of Owens Corning's insulation and other energy savings products and systems. Increased transportation industry related energy efficiency regulations help drive the use of lighter and stronger materials like our glass-fiber reinforcements. Demand for products in our roofing business is generally driven by both residential repair and remodeling activity and by new residential construction.

Example of Owens Corning Mineral Wool products opportunities:

In response to the Grenfell Tower fire in the UK in 2017, and similar fires in Europe and the Middle East, attention has turned to the codes and standards that apply to products and wall systems. While the codes in North America are more stringent than those in

the UK and elsewhere, and enforcement is generally superior to those places, we are none-the-less seeing efforts to strengthen US codes. New York City has revised its code to limit the use of combustible materials in exterior assemblies of commercial builders, especially tall structures. Combined with strong energy codes, calling for exterior insulating sheathing, this new building and fire code requirement is likely to drive the market away from foam plastic sheathing on exterior walls to non-combustible mineral wool insulation board, like Owens Corning Thermafiber® products. It should be noted that extruded polystyrene has a much high global warming potential and is higher in embodied carbon than mineral wool board insulation. Thus, while fire and life safety were the driving forces in updating the NYC code, it will likely have a positive impact on climate as mineral wool board gets more market penetration. We expect that other large cities and even States will consider the changes that NYC has made and possibly adopt similar measures.

On the single-family residential side, we see a similar scenario arising in California in the coming years. To meet the zero-energy code, with mandates to use continuous insulation on the exterior of walls, and the urban wildland interface code, we expect to see the use of combustible expanded polystyrene (EPS) to diminish in favor of non-combustible insulative sheathings such as Owens Corning Thermafiber® mineral wool.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

208,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

72% of Owens Corning's 2018 sales were in building materials. Changes in regulations for energy efficiency could have a material impact on demand for our energy efficient products. \$208,000,000 is about 4% of our 2018 sales in Roofing and Insulation. Our estimate is driven by a number of factors, including market intelligence, historical revenue gains from changes in energy efficiency regulations, and from financial modeling.

Strategy to realize opportunity

Owens Corning actively lobbies the U.S. DOE and other legislative bodies through its Governmental Affairs organization for increased energy conservation requirements. In support of these efforts and in anticipation of tighter standards, Owens Corning's Conscientious Builder Program identifies builders that strive to build net zero buildings. These builders have partnered with us to capitalize on our building science knowledge and experience. In 2018, we continued to partner with builders throughout the US and Canada who are building in a wide variety of climates, regions and communities. One example of this is our work with the Canadian government's Natural Resources Canada (NRCan). NRCan received funding to support energy technology innovation to produce and use energy in a cleaner and more efficient way. As part of this initiative, NRCan in partnership with Owens Corning leads the housing industry in an effort to combat the ever-growing effects of climate change and global warming. Five builders across Canada in Quebec, Ontario, Nova Scotia, and Alberta were selected to develop the next generation of Canadian homes: Net Zero Energy Homes.

<http://www.zeroenergy.ca>

The cost of \$1,000,000 to realize this opportunity is the amount budgeted and spent in lobbying the various legislative bodies, and in exploring and forming partnerships with organizations like NRCan.

Cost to realize opportunity

1,000,000

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact

Increased revenue through demand for lower emissions products and services

Company-specific description

Demand for products in our roofing business is generally driven by both residential repair and remodeling activity and by new residential construction. As the effects of climate change are felt in the increased frequency and severity of storms, Owens Corning as a building materials company may see an increased demand for our products in our roofing business due to storm related roof damage. Our Weatherguard

shingle is specifically designed to protect against high winds and increased storm activity, meeting the industry's highest classification for impact resistance, and it along with our Duration shingle and our entire product line could likely see increased revenues.

Also, Owens Corning has developed low emission products in our insulation portfolio. Owens Corning has announced five types of commercial and residential insulation, independently certified as made with renewable energy, are available for specification and purchase. These products represent the first ever to have met the requirements of SCS Global Services' certification protocol to validate electricity used to make them is 100% wind powered, which, in turn, reduces their carbon footprint.

While the new offering helps Owens Corning reduce its carbon footprint – its stated goal is a 50% reduction by 2020 over its 2010 baseline – the certified insulation products, made with 100% wind energy, give commercial architects and specifiers, builders, and even homeowners the option of lower-carbon products to build greener structures. For architects, the products will help them design buildings with reduced life cycle impact and achieve the recognized goals of the Architecture 2030 Challenge and U.S. Green Building Council's LEED certification.

Time horizon

Current

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

100,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Roofing accounted for 34% of Owens Corning's revenue in 2018. Our estimate of the impact that could be felt by increased storm activity is about 4% of that revenue. This is based in part on knowledge of the impact of increased storm activity in previous years.

Strategy to realize opportunity

Owens Corning has a strong network of facilities throughout the United States. Through sophisticated supply chain planning, production from each of these locations can be redirected to serve a storm damage market. Over the last few years and continuing in 2018, Owens Corning has been developing regional shingles that

dramatically improve our ability to get shingles to weather impacted areas from multiple plants. With state of the art technology and stringent testing requirements, Owens Corning Roofing is able to provide regional shingles which allow more efficient service during storm surge demand, more flexibility for multiple locations, and easy inventory management. A regional shingle is a shingle produced at different manufacturing facilities, tested and proven to be color matched to allow mixing between all or some of the producing manufacturing facilities in a specific region. We feel our regional shingle gives us the flexibility to have a competitive advantage in storm reaction time.

Cost to realize opportunity is \$0 incremental management costs. Increased freight costs are able to be passed through in price when serving storm ravaged areas.

Cost to realize opportunity

0

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Type of financial impact

Better competitive position to reflect shifting consumer preferences, resulting in increased revenues

Company-specific description

As the awareness of environmental deterioration increases, Owens Corning's products become more important to consumers and to builders who market energy efficient structures. Our products, specifically insulation, are significant to the reduction of GHG from buildings. For example, about 2,600 homes in Texas were air sealed with Owens Corning's innovative PROPINK ComfortSeal™ gasket system that was developed by our Building Science Team with an additional ribbed featured to enhance the air tightness of homes. With code requirements dropping to 3 ACH50, few options existed for builders and with this product and air sealing systems developed by Owens Corning, builders were better able to comply with these stringent code requirements. Because of this, Owens Corning stands to benefit from the reputation of promoting sustainability, as consumers concerned with climate change and the environment are likely to prefer Owens Corning products over those of our competitors.

Other examples include:

1. Increasing the number of products produced with a “Made with 100% Wind-Powered Electricity and Reduced Embodied Carbon” Certification, including EcoTouch® Insulation for Flexible Duct and QuietR® Duct Board Insulation+. This gives commercial architects and specifiers, builders, and homeowners the option of lower carbon products to build greener structures.
2. Expanding our offering of “cool roof” shingles. Using a highly reflective granule technology that reflects the sun’s rays, Owens Corning’s Cool Roof Collection™ shingles help reduce energy use by keeping roofs cooler and reducing air conditioning energy levels. Some of our Cool Roof Collection™ shingles meet ENERGY STAR® requirements for solar reflectance.
3. Developing UltrabladeX™, a new generation of high performance fabrics that enables original equipment manufacturers to design and make longer and lighter wind turbine blades, decreasing the cost of wind energy. Based on proprietary technology, UltrabladeX allows for a 5% reduction in blade mass and up to 20% longer blades, driving down the cost of wind energy.

Time horizon

Current

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

50,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Owens Corning's estimate of \$50,000,000 potential impact is driven by a number of factors, including market intelligence, historical revenue gains from new products and from improved sales of existing products, and from financial modeling. The estimate represents potential gains in revenue from increased sales due our strong reputation as a sustainable company with energy efficient products.

Strategy to realize opportunity

Owens Corning recognizes the importance of sustainability and has embedded building science professionals into the business. We understand the impacts of our products aim

to innovate solutions that provide positive impacts on the building envelope. Our sustainability organization and sales force actively and broadly promote our company's stand for sustainability and train professionals on how to achieve maximum environmental benefits using our products. The company is a significant user of recycled content, and we strive to reduce the energy usage and GHG emissions from producing our products while tracking avoided emissions from product usage. Owens Corning Building Science engineers the complex, interconnected systems that make buildings and homes comfortable, energy efficient, high performing, durable, sustainable, and affordable – that is our material difference. Product Innovation, developing products like EcoTouch® Made with 100% Wind-Powered Electricity and Reduced Embodied Carbon™ products, and Cool Roof Collection Shingles that reduce energy and emissions, puts us in a position to take advantage of this opportunity. The cost of \$1,000,000 to realize this opportunity is calculated by adding the costs related to our building science team, product innovation team, and the time our sustainability organization and sales force spends training professionals and promoting our company's stand.

Cost to realize opportunity

1,000,000

Comment

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	In response to the identified risk of potential for increased regulation on energy efficiency and emissions standards, Owens Corning has in recent years made dramatic improvements to its product lines in all businesses, including Cool Roof Collection™ shingles, the Pure Safety® product in our insulation business, and Sustaina® in our Composites business. Owens Corning's Pure Safety® high-performance insulation provides up to 65% less dust and is mold and mildew resistant. It is the world's first building product to earn the asthma and allergy friendly™ Certification from the Asthma and Allergy Foundation of America (AAFA). Finally, in Composites, the company's new Sustaina® non-woven glass fiber fabric uses a bio-based binder system with high tensile strength performance and does not contain formaldehyde. These innovations have had a moderate impact on our revenues as we deliver new market leading products.

Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	<p>We believe transportation of materials and engagement with a supplier can be done more efficiently if the supplier is nearby, which enhances sustainability across the supply chain and minimizes the impact of storms and natural disasters. An important area where supply chain-related risks have impacted our business is regional shingle production. Historically, shingles of a particular color made at different plants were slightly different and could not be mixed on a roof. To mitigate the impact of natural disasters, we have worked with our suppliers to create regional shingles so that we can produce consistent colors across many of our roofing plants. This improves our ability to meet demand if a disaster disrupts production at one plant. Regional shingles have had a significant impact on our roofing business, as we can now mix product from different plants, greatly expanding our distribution flexibility, even in non-storm-related situations.</p>
Adaptation and mitigation activities	Impacted for some suppliers, facilities, or product lines	<p>Owens Corning has developed and implemented many adaptation and mitigation activities for our identified risks and opportunities. Approximately \$2 million has been invested for administration of programs and for physical loss prevention improvements to mitigate risks of natural disasters disrupting our production capacity. In addition, we have spent \$5 million to mitigate the risks of air pollution limits being strengthened, including the use of our Sustainability Mapping Tool in the Product Stewardship process. The risk review process has had a major impact on our adaptation and mitigation activities, since a majority of those activities have been created specifically to alleviate identified risks.</p> <p>After the cases of flooding in the Kearny and Taloja plants, we ended up raising up critical electrical systems from the ground after rebuilding part of those facilities. For our facilities, we now look at the flood history and evaluate whether we need to elevate critical electrical systems in those facilities as well to minimize flood risks.</p>
Investment in R&D	Impacted	<p>Owens Corning has invested in energy efficient and environmentally friendly products such as Cool Roof Collection™ shingles, WindStrand® high performance glass fiber roving, and others that have proven successful in the marketplace. Currently Owens Corning is investing substantially in other R and D in response to the many climate related risks and opportunities that we have defined. The risk management process has had a moderate magnitude of impact on how funds are invested in R and D, as the risk management process often leads to mitigation needs and identified business opportunities. For example, the investment in R and D for WindStrand® was driven in part by climate change related risk and opportunity evaluations. WindStrand® is a high-efficiency fabric for wind blades to make wind energy more cost</p>

		<p>effective. High-efficiency fabric is an innovative material that allows wind blade manufacturers to use 30% fewer layers of material in the molds for the blades – while getting the same quality and performance as standard fabrics. That, in turn, represents a 50% savings in the labor and production time for the blades. By enabling longer, stronger, and lighter wind blades, our high-efficiency fabric solution lowers the cost of wind energy, thus contributing to the worldwide advancement of this alternative source of energy production.</p>
Operations	Impacted	<p>Identified climate related risks and opportunities have had a significant impact for Owens Corning. In 2015 we made significant renewable energy investments. We installed a solar array at our corporate headquarters to satisfy about 30% of the buildings energy needs and offset the equivalent GHG emitted from the building's commuters. In 2015 OC signed power purchase agreements totaling 250 megawatt power purchase agreement for renewable electricity. In Q4 2016 both wind farms came online and are now providing renewable energy into the grid, impacting emissions and renewable energy in 2018. Additionally, in 2018 Owens Corning continued to look for opportunities to expand our renewable portfolio with several reviews of onsite and offsite programs.</p>
Other, please specify		

C2.6

(C2.6) Describe where and how the identified risks and opportunities have been factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	<p>Owens Corning has incorporated the identified risks and opportunities into our financial planning process. Our new product developments are factored into our forecasting, as previous climate related products like EcoTouch and Pure Safety were when they were being developed. Currently Low Carbon Products, which were introduced in 2017 and made up 26% of 2018 revenues, have also been included in future revenue projections at a forecasted rate of growth. These risks and opportunities have a moderate impact on revenues in the financial planning process.</p>
Operating costs	Impacted	<p>Owens Corning incorporates the impact of the identified risks into its operating costs for financial planning models based on a number of factors including the likelihood, timeframe, and magnitude of the financial impact of the risk or opportunity.</p>

		<p>For example, in the event of reduced production capacity due to climate-related increased in storm activity and severity, Owens Corning would potentially see increased Operating Costs with substantial magnitude of impact in the affected regions. The increase would be due to cleanup costs, as well as alternate transportation costs, increased maintenance, and likely increased production costs as the repaired line is brought back up to production. This estimated impact would be included in the financial planning process in various scenarios and analyses.</p> <p>When Hurricane Sandy damaged our Kearny roofing plant, we had a good actual example to use to adjust our planning estimates for future potential severe weather events and their impact on operating costs.</p>
Capital expenditures / capital allocation	Impacted for some suppliers, facilities, or product lines	<p>Capital expenditures and allocations are frequently impacted by identified risks and opportunities. Examples include the capital expenditures needed to make the Pure Safety® product, driven by our recognition of the reputational opportunity that Owens Corning has due to climate change. Owens Corning's Pure Safety® high-performance insulation provides up to 65% less dust and is mold and mildew resistant. It is the world's first building product to earn the asthma and allergy friendly™ Certification from the Asthma and Allergy Foundation of America (AAFA). Similarly, we included in the planning process a few years ago the new equipment required to use Foam blowing agent with a lower GWP, as the need for blowing agent changes was identified in our risk and opportunities analyses. Our response to identified climate related risks and opportunities like these has had a substantial impact on our financial planning of capital allocation.</p>
Acquisitions and divestments	Impacted for some suppliers, facilities, or product lines	<p>Identified risks and opportunities have had a moderate impact on our financial planning for acquisitions and divestments. Over the last several years acquisitions have been an important part of our growth strategy. We look for acquisition opportunities with businesses that meet specific criteria: they must provide stable and attractive margins and strong synergies, address our target growth areas, and meet our strategic objectives.</p> <p>We evaluate our acquisition candidates through multiple lenses, including sustainability, and we ask a critical question: Will this business be better with us as its owner? As sustainability guides our operations, we want to be confident that we can improve the environmental, health, and safety (EHS) performance, employee experience, customer experience, and</p>

		<p>community impact of the companies that join us. Can we bring a new perspective on safety and health? Can we improve energy efficiency and lower waste in operations?</p> <p>Owens Corning has purchased several companies in the last 3 years. The acquired businesses successfully expand the capabilities and global reach of our three business segments (Composites, Insulation, and Roofing). Improving EHS performance and enhancing the employee experience are critical elements in our acquisition integration process. The identified climate change related opportunities, including more aggressive building codes, increased building materials demand due to potentially increased storm activity and severity, and improved demand for existing products due to our reputation for sustainable products were all factors in our acquisitions to expand our product line. These opportunities continue to be involved in our financial planning process as we continue to evaluate and analyze additional acquisition targets.</p>
<p>Access to capital</p>	<p>Not yet impacted</p>	<p>Owens Corning's access to capital in our financial planning process may be impacted by the risks and opportunities we have identified. Our financial modeling incorporates the impact of risks and opportunities based on timeframe, likelihood, and magnitude of impact. Our finance organization during planning will look at different scenarios based on the likelihood of potential risks or opportunities occurring. For Owens Corning specifically, that means for example that impacts on our production facilities and capacity from increased severity of storms could negatively impact our access to capital for subsequent periods, perhaps substantially depending on the level of production capacity impact. Substantial damage to our facilities requiring capital investment beyond insurance recovery, coupled with production issues could impact our debt level and degree of leverage. As discussed in Owens Corning's 2018 10-K, other consequences from this include our ability to obtain additional debt or equity financing for working capital, capital expenditures, debt service requirements, acquisitions and general corporate or other purposes may be limited. This and the potential impacts from our other risks and opportunities are factored into the financial planning process and results for future years, however to date Owens Corning's access to capital has not yet been impacted. While the time frame for the impact of climate change is unknown, Owens Corning considers this a long-term risk which we define as a minimum of 6-10 years.</p>

		Owens Corning makes multi-year capital investments to be consistent with our strategy to remain investment grade.
Assets	Impacted	Identified risks and opportunities have had a moderate impact on our financial planning for assets, primarily through our acquisitions. Owens Corning has purchased several companies in the last 3-4 years, including InterWrap, Pittsburgh Corning, and Paroc. With these acquisitions, Owens Corning reported \$9.77 billion in total assets in 2018. These companies were seen as important to expand our portfolio of energy saving products. The identified opportunities regarding more aggressive building codes, increased building materials demand due to changes in weather patterns and storm activity, and improved demand for existing products due to our reputation for sustainable products were all factors in our acquisitions to expand our product line. These opportunities continue to be involved in our financial planning process as we continue to evaluate and analyze additional acquisition targets. In the past few years, we have had changes to our forecasted assets in our financial planning process due to our acquisition strategy. Identified risks and opportunities have had a moderate impact on our financial planning for assets and liabilities due to the expectation of the acquisitions.
Liabilities	Impacted	Identified risks and opportunities have had a moderate impact on our financial planning for liabilities, primarily through our acquisitions. Owens Corning has purchased several companies in the last 3 years., including InterWrap, Pittsburgh Corning, and Paroc. These companies were seen as important to expand our portfolio of energy saving products. The identified opportunities regarding more aggressive building codes, increased building materials demand due to changes in weather patterns and storm activity, and improved demand for existing products due to our reputation for sustainable products were all factors in our acquisitions to expand our product line. These opportunities continue to be involved in our financial planning process as we continue to evaluate and analyze additional acquisition targets. In the past few years, we have had changes to our forecasted liabilities in our financial planning process due to our acquisition strategy. Identified risks and opportunities have had a moderate impact on our financial planning for assets and liabilities due to the expectation of the acquisitions.
Other		

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform your business strategy?

Yes, qualitative and quantitative

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

Owens Corning's business strategy has been influenced by climate change risks and opportunities that have been identified and managed by our risk organization as well as within our distinct business units. All risk assessment results are reviewed by the executive committee (including the CEO). Feedback is incorporated in the action register and reflected in mitigation planning. The strategy is also influenced by our major stakeholders, which include NGOs, customers, suppliers, and investors, as well as through our interactions with universities and business groups. The internal processes we use to measure our corporate footprint and handprint also influence the decisions made by our leaders. For example, we have included energy in our risk register because Owens Corning has a 2020 goal to reduce GHG emissions intensity by 50% and primary energy intensity by 20% from our 2010 base year. Owens Corning has an active team including internal and external resources who evaluate both boutique, onsite programs for renewable energy and large offsite installations. The climate change influence on increasing frequency and severity of storms, as well as changing weather patterns over regions of the world, has driven changes to our strategy that have improved our company's products. For example, in recent years we have made it a priority to develop roofing products with higher wind resistance and greater durability.

Owens Corning sees a strategic advantage through its integration of climate change in its long-term strategy in several important ways. Our focus on sustainability and our 2020 energy and GHG emission reduction goals have led to many new product and process developments, such as the formaldehyde-free EcoTouch® insulation and Sustaina® veil products, the sustainability R&D mapping tool, reduced energy intensity and related GHG emissions, and increasing use of renewable energy. Since moving to EcoTouch® for residential insulation, we have continued to expand formaldehyde-free formulations to heavier density products, and we were the first manufacturer to announce our mineral wool will be formaldehyde-free. This combines high performance with sustainable attributes. These product qualities give us a competitive advantage in the marketplace, particularly in the green building space. Another competitive

advantage is our shingle recycling program, which lowers disposal costs for our customers and helps construction projects gain LEED credits.

The reality of increased storm activity due to climate change resulted in our development and launch of shingles with greater wind and hail resistance. The importance of reducing GHG also led Owens Corning to perform a preliminary analysis on supply chain GHG including raw materials. In 2018 we remained active in board positions in major energy efficiency organizations. The U.S. withdrawal from the Paris Agreement in 2017 does not change Owens Corning's commitment to reducing its environmental footprint.

In 2017, Owens Corning decided to launch the first insulation products to be certified as made with 100% wind-powered electricity and reduced embodied carbon, in accordance with SCS Global Services' certification protocol. The SCS certification and these new certified products were made possible by the power purchase agreements Owens Corning signed in 2015, which enabled new wind capacity in Texas and Oklahoma. Both wind farms came online in late 2016 and have the potential to generate 1.1 million megawatt hours of electricity per year. The aspects of reduced carbon and increased use of renewable energy led to the business decisions for both the wind energy PPAs and the low carbon embodied product lines. Due to customer demand, in 2018 we increased the number of certified products available.

C3.1d

(C3.1d) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios	Details
Other, please specify SBT Absolute Emissions Contraction Method	Owens Corning set aggressive 2030 GHG emissions goals using the Absolute Emissions Contraction Method from the Science Based Targets Initiative. We track emissions for the entire company based on this methodology. Our approved targets are to reduce absolute Scope 1 and 2 GHG emissions 50% from 2018 levels by 2030; and to reduce absolute scope 3 GHG emissions 30% within the same timeframe. Owens Corning ran the model for 100% of our Scope 1 & 2 emissions, using both the 1.5°C scenario and 2.0°C scenario. The Scope 1 & 2 target was determined to be in line with 1.5°C trajectory. The absolute contraction approach creates absolute targets – we considered changes to the scenarios where we created corresponding intensity or weighted average intensity targets. After performing analyses for 100% of our organization with these potential intensity targets, we reviewed with the SBTI and elected to establish absolute targets. We are establishing additional 2030 targets and creating initiatives to enable us to meet these aggressive targets. Among these goals and initiatives are plans to increase renewable energy as a portion of our portfolio and to sharply reduce emissions from our Foam products due to blowing agents. Both are business strategy changes, one in energy procurement and the other operationally for our Foam business. For example, the renewable energy goal will require Owens Corning to do

	<p>additional large renewable energy projects outside North America. We are already reviewing potential projects domestically and internationally. Additionally, Owens Corning will continue to expand its portfolio of low-carbon products certified as being made with wind energy.</p> <p>The scenario analyses have been shared with our executive committee, including the CEO. The results will be monitored by the sustainability analytics and reporting team and will be shared with business leaders up to the CEO and Board of Directors. Targets and our progress against them will be shared publicly in our annual sustainability report.</p> <p>Owens Corning chose 2030 as our target year for our third set of 10-year goals. We evaluated 2017 and 2018 as potential base years, but chose 2018 because it more accurately reflects the nature of our business today after further acquisition integration.</p>
<p>Other, please specify SBTI Sectoral Decarbonization Approach Tool</p>	<p>Owens Corning used the Sectoral Decarbonization Approach Tool from the Science Based Targets Initiative to evaluate if our existing 2020 goal was science based. The tool enables us to evaluate a time horizon from our 2010 base year out to 2050, but specifically allows us to verify what our 2020 absolute emissions should be to qualify as science based. As we will be formulating our next set of goals in the near future, the tool also allows us to evaluate other potential target and baseline years. The inputs used were our 2010 scope 1 and scope 2 emissions, our base year, our target year, and our type of industry. The numbers used for our base year were for 100% of our operations. Our emissions level in 2018 was 3,810,318, well below the 2020 target emissions calculated by the SDA tool. This has informed our business objectives and strategy by confirming that it is meeting and exceeding the Science Based Target goal. Knowing we are on the right path will help us in setting our next set of goals, and in getting them approved by the Science Based Targets Initiative. Based on this alignment between SBT and our 2020 goals, Owens Corning has invested in developing low carbon products.</p> <p>In 2017, Owens Corning launched the first insulation products to be certified as made with 100% wind-powered electricity and reduced embodied carbon, in accordance with SCS Global Services' certification protocol. In 2018, we expanded the number of certified products available from 3 to 5. Also in support of SBT SDA tool analysis, Owens Corning continues to make investments in our renewable portfolio, with several reviews of onsite and offsite programs in 2018.</p>

C4. Targets and performance

C4.1

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

Both absolute and intensity targets

C4.1a

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

Target reference number

Abs 1

Scope

Scope 1 +2 (market-based)

% emissions in Scope

100

Targeted % reduction from base year

50

Base year

2018

Start year

2019

Base year emissions covered by target (metric tons CO₂e)

3,824,027

Target year

2030

Is this a science-based target?

Yes, this target has been approved as science-based by the Science-Based Targets initiative

% of target achieved

0

Target status

New

Please explain

Owens Corning used the Absolute Emissions Contraction Method from the Science Based Target Initiative to set aggressive 2030 GHG emissions goals. Our approved targets are a commitment to reduce absolute scope 1 and 2 GHG emissions 50% by 2030 from a 2018 base year and to reduce absolute scope 3 GHG emissions 30% within the same timeframe. The Scope 1 & 2 target was determined by the Science Based Target Initiative to be in line with 1.5°C trajectory.

Target reference number

Abs 2

Scope

Scope 3 (upstream & downstream)

% emissions in Scope

100

Targeted % reduction from base year

30

Base year

2018

Start year

2019

Base year emissions covered by target (metric tons CO₂e)

3,892,181

Target year

2030

Is this a science-based target?

Yes, this target has been approved as science-based by the Science-Based Targets initiative

% of target achieved

0

Target status

New

Please explain

Owens Corning used the Absolute Emissions Contraction Method from the Science Based Target Initiative to set aggressive 2030 GHG emissions goals. Our approved targets are a commitment to reduce absolute scope 1 and 2 GHG emissions 50% by 2030 from a 2018 base year and to reduce absolute scope 3 GHG emissions 30% within the same timeframe.

C4.1b

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

Target reference number

Int 4

Scope

Scope 1 +2 (market-based)

% emissions in Scope

100

Targeted % reduction from base year

50

Metric

Metric tons CO₂e per metric ton of product

Base year

2010

Start year

2011

Normalized base year emissions covered by target (metric tons CO₂e)

5,116,981

Target year

2020

Is this a science-based target?

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

% of target achieved

97

Target status

Underway

Please explain

Owens Corning recognizes that greenhouse gas (GHG) emissions are the main cause of climate change and is committed to doing its part to reduce emissions within the company as well as through our suppliers and customers. Owens Corning has a 2020 goal to reduce its greenhouse gas intensity by 50 percent. We follow the World Resource Institute (WRI) GHG protocol to account Scope 1, 2 and 3 emissions. In 2018,

we are reporting a 48 percent reduction in GHG intensity from our base year 2010. Going forward as a company we expect the majority of our reductions to be realized in Scope 1 and Scope 2, although we will continue to implement changes to reduce our Scope 3 emissions where appropriate. During 2018, SCS Global Services' Greenhouse Gas Verification program has conducted a verification of Owens Corning's end of year 2018 emissions against the requirements of the Carbon Disclosure Project and the WRI/WBCSD GHG Protocol. The Verification Statement documents that SCS Global Services has conducted verification activities in compliance with ISO 14064-3:2006 Specification with guidance for the validation and verification of greenhouse gas assertions. The statement also attests that SCS Global Services performed a Type 2 Assurance Engagement to evaluate Owens Corning against the AA1000 Principles to a moderate level. For Scope 1 and 2 greenhouse gas emissions and energy use from 1 January 2018 to 31 December 2018, a high level of assurance was conducted. SCS's review of the management systems, data and calculations regarding Owens Corning's reporting of 2018 Scope 3 greenhouse gas emissions, water use, waste, air pollution, social performance indicators and 2018 progress towards 2020 sustainability goals were assured at a moderate-level and no material errors or misstatements identified in the final draft chapters of the report. Owens Corning's reported 2018 Scope 1 and 2 GHG emissions and energy use was assured at a high-level and can be considered reliable. In addition, Owens Corning's Report was found to conform to GRI Standards.

% change anticipated in absolute Scope 1+2 emissions

-27

% change anticipated in absolute Scope 3 emissions

0

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

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	41	19,550
To be implemented*	19	21,080
Implementation commenced*	9	14,424
Implemented*	32	16,555
Not to be implemented	3	2,502

C4.3b

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

Initiative type

Energy efficiency: Building services

Description of initiative

Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

2,794

Scope

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

340,811

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

638,563

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Six individual lighting projects focused on improving energy efficiency of lighting in various manufacturing plants across the U.S., Canada, Italy, and China

Initiative type

Energy efficiency: Processes

Description of initiative

Compressed air

Estimated annual CO2e savings (metric tonnes CO2e)

217

Scope

Scope 1

Voluntary/Mandatory

Voluntary

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

30,253

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

78,486

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Three compressed air projects focused on improving the energy efficiency of compressed air systems in plants in the U.S. and China

Initiative type

Energy efficiency: Building services

Description of initiative

Motors and drives

Estimated annual CO2e savings (metric tonnes CO2e)

2,669

Scope

Scope 1

Voluntary/Mandatory

Voluntary

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

383,359

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

472,096

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

Ten energy efficiency projects of various types across the U.S., Canada, Brazil, Italy, France, and South Korea including pump upgrades, motor upgrades, VFD upgrades, HVAC upgrades, and energy monitoring system improvements

Initiative type

Energy efficiency: Processes

Description of initiative

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

3,259

Scope

Scope 1

Voluntary/Mandatory

Voluntary

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

417,575

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

785,988

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Nine projects across the U.S., Canada, Brazil, Italy, and France impacting our processes, resulting in energy efficiency and operational improvements, including new metering systems, peak demand management, steam distribution system improvements, process equipment upgrades, and system automation and optimization

Initiative type

Energy efficiency: Processes

Description of initiative

Combined heat and power

Estimated annual CO2e savings (metric tonnes CO2e)

7,616

Scope

Scope 1

Voluntary/Mandatory

Voluntary

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

842,267

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

732,918

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

Four waste heat recovery projects focused on improving the energy efficiency of process heat systems in plants in India, France, and the Netherlands

C4.3c

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

Method	Comment
Compliance with regulatory requirements/standards	Owens Corning has an Environmental Management System (EMS) that is required at all facilities. The system includes 17 different modules which are separately tracked for implementation status. Our EMS is based on ISO guidelines and is internally self-audited, as well as through our divisional/corporate EHS audit team. Approximately 35% of our sites are ISO certified 14001 or OSHAS 18001.
Dedicated budget for energy efficiency	Owens Corning has a dedicated energy budget within each business unit that is managed by the corresponding Energy Efficiency Program Managers. The energy portfolios are created through submission of a capital request form that evaluates ROI, location, impact of CO2, MWh reductions, timing of implementation, rebate opportunities, risk, as well as the ability to propagate initiatives across other Owens Corning plants.
Employee engagement	All Owens Corning plants have designated Plant Energy Leaders (PEL's). Although this is not their full-time responsibility, they do spend

	<p>a portion of their time engaging the plant in energy efficiency projects/activities, identifying energy savings opportunities, developing/scoping out projects, as well as implementing the projects. Each business unit holds monthly or bi-monthly energy calls to report YTD and annual energy intensity performance against goals, and provides a platform to not only share status of energy projects, but also share best practices, and discuss new, innovative technologies. Owens Corning has forward reaching Sustainability Goals that includes reductions in energy intensity and GHG, which in turn become the goals for each plant as well. Additionally, in 2016 several employees toured and visited ORNL as part of being a Better Plants Partner. This visit was to help us better understand the resources and support offered through the Better Plants Program.</p>
Internal price on carbon	<p>We consider Scope 1,2 and 3 emissions, and have both internally and externally published reduction goals. We use our aligned and committed reduction goals to drive strategy and action, not an actual carbon charge such as an internal carbon tax. For use in internal decision making and risk analysis, we place an economic value on carbon emissions to help frame the challenges and opportunities in monetary, more broadly understood terms than simply tons of emissions. This includes considering the impact on our operations and our supply chain. Quantifying these added costs in the event that a price is put on carbon in regions around the world where a current price or trading scheme is not in place, provides additional insight into our business decisions. We bracket this analysis, on the low end at \$10/metric ton and high of \$60/metric ton.</p>
Internal incentives/recognition programs	<p>Owens Corning has several annual Global sustainability awards that are available to all employees. Our awards include</p> <ol style="list-style-type: none"> 1. Sustainability Innovation – awarded for projects that have enabled Owens Corning to accelerate meeting or surpassing its 2020 sustainability goals. 2. Environmental Excellence Award - This award is designed to recognize sustained excellence in environmental stewardship and areas of regulatory or public interest. 3. Environmental Outreach - This award recognizes teams or individuals who actively participate in community environmental programs or initiatives, who may organize special events to raise environmental awareness, or who work to mentor smaller facilities, customers, or vendors in environmental stewardship. 4. Environmental Impact Improvement - This award is given to a site having implemented new environmental processes or technology delivering significant impact reduction and/or compliance assurance with new or challenging environmental requirements.

	<p>Finally, the Composites business has an annual contest designed to drive participation for the Plant Energy Teams each year with cash awards with are managed by the Energy Efficiency Program Manager. This program evaluates, among other items: (1) site energy meetings with minutes generated, (2) low cost/no cost savings projects implemented, (3) kaizen events and assessments completed, (4) best practices shared across the network, (5) capital projects being implemented, and (6) energy network meetings attended.</p>
<p>Partnering with governments on technology development</p>	<p>Owens Corning completed modeling and forecasting to lay out the problem for the CEC and the state of California with respect to the problem caused by allowing solar/PV into the energy code. We have built a coalition of NGOs and Trade Assn (incl NRDC and the home builders association) to push through a stop-gap fix until the new 2019 energy code can be developed and put in place.</p>

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

Types of insulation materials manufactured throughout our global operations include fiberglass, extruded polystyrene (XPS) foam and mineral wool. These products help customers avoid emissions, as Insulation by its nature reduces energy use along with corresponding emissions.

The Cool Roof Collection™ shingles are specially designed to reflect the sun's rays, helping to make your home more comfortable and energy efficient. These shingles are specially designed with solar-reflecting granules to help decrease the amount of heat transferred into a home. The Cool Roof Collection™ meets prescriptive Cool Roof requirements in California and other compliance programs. Some Cool Roof Collection™ shingles are also Energy Star rated.

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

Insulation reduces energy and emissions. Cool Roof Collection™ shingles meet prescriptive Cool Roof requirements in California, and some are Energy Star rated.

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

65

Comment

These products help customers avoid emissions, as Insulation by its nature reduces energy use along with corresponding emissions. Cool Roof Collection™ shingles are specially designed to reflect the sun's rays, helping to make your home more comfortable and energy efficient. These shingles are specially designed with solar-reflecting granules to help decrease the amount of heat transferred into a home. Of the 65%, 16% is from residential fiberglass and XPS insulation, manufactured in 2018 in North America. This has been estimated to be 10,189,377 metric tons CO₂e/ yr (or 611,362,613 metric tons CO₂e over 60 yrs). This is publicly disclosed on page 206 of our 2018 Sustainability Report. <https://www.owenscorning.com/corporate/sustainability/docs/2019/2018-Owens-Corning-Sustainability-Report.pdf>. The remaining % total revenues is from mineral wool, commercial and industrial insulation, and from insulation outside North America, as well as several products from our Composites business.

Level of aggregation

Group of products

Description of product/Group of products

In 2017, Owens Corning launched the first insulation products to be certified as made with 100% wind-powered electricity and reduced embodied carbon, in accordance with SCS Global Services' certification protocol. The SCS certification and these new certified products were made possible by the power purchase agreements Owens Corning signed in 2015, which enabled new wind capacity in Texas and Oklahoma. Both wind farms came online in late 2016 and have the potential to generate 1.1 million megawatt hours of electricity per year.

The first five types of commercial and residential insulation independently certified as made with wind-powered electricity are:

- EcoTouch® Insulation – 35% embodied carbon reduction
- Thermafiber® RainBarrier® Continuous Insulation – 20% embodied carbon reduction
- Unbonded Loosefill Insulation – 55% embodied carbon reduction

These certified insulation products give commercial architects and specifiers, builders, and even homeowners the option of lower-carbon products to build greener structures.

Plus, they help architects design buildings with reduced life cycle impacts, which in turn helps them reach the recognized goals of the Architecture 2030 Challenge and U.S. Green Building Council's LEED® certification.

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

Low-carbon product and avoided emissions

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

Other, please specify

SCS Global Services certification

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

26

Comment

The SCS Global Services Standard can be found here:

https://www.scsglobalservices.com/files/program_documents/scs_gui_reducedcarbonfootprint_021318.pdf

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, 2010

Base year end

December 31, 2010

Base year emissions (metric tons CO₂e)

3,459,238

Comment

Scope 2 (location-based)

Base year start

January 1, 2010

Base year end

December 31, 2010

Base year emissions (metric tons CO₂e)

1,645,448

Comment

Scope 2 (market-based)

Base year start

January 1, 2010

Base year end

December 31, 2010

Base year emissions (metric tons CO2e)

1,645,448

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

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

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

2,833,980

Start date

January 1, 2018

End date

December 31, 2018

Comment

Owens Corning's GHG emissions were verified by SCS Global Services in 2018.

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

2,737,865

Start date

January 1, 2017

End date

December 31, 2017

Comment

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

2,719,681

Start date

January 1, 2016

End date

December 31, 2016

Comment

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)

2,742,084

Start date

January 1, 2015

End date

December 31, 2015

Comment

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

Owens Corning is committed to following the GHG Protocol Scope 2 Guidance and reports market-based Scope 2 emissions gathered from utilities by Schneider Electric. Owens Corning's GHG emissions were verified by SCS Global Services in 2018.

C6.3

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

Reporting year

Scope 2, location-based

1,538,880

Scope 2, market-based (if applicable)

976,338

Start date

January 1, 2018

End date

December 31, 2018

Comment

Owens Corning's GHG emissions were verified by SCS Global Services in 2018.

Past year 1

Scope 2, location-based

1,485,562

Scope 2, market-based (if applicable)

1,114,451

Start date

January 1, 2017

End date

December 31, 2017

Comment

Past year 2

Scope 2, location-based

1,562,772

Scope 2, market-based (if applicable)

1,540,925

Start date

January 1, 2016

End date

December 31, 2016

Comment

Past year 3

Scope 2, location-based

1,572,077

Scope 2, market-based (if applicable)

1,559,488

Start date

January 1, 2015

End date

December 31, 2015

Comment

C6.4

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

No

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

1,936,669.98

Emissions calculation methodology

The climate change category of Purchased Goods and Services (PG and S) is interpreted as the cradle-to-supplier-gate GWP impact of the representative raw material inputs used to manufacture Owens Corning products. The data used to model these

impacts are from Owens Corning's manufacturer-specific product LCA studies that have been conducted. The scopes of the product LCAs are either cradle-to-grave or cradle-to-gate; however, since the objective of this calculation only focuses on the activities upstream of manufacturing, discernment between whether a given LCA is cradle-to-gate or cradle-to-gate is not necessary. In each of these studies, GWP impact factors are developed using the impact assessment results for the upstream life-cycle stages that represent the input raw materials. The GWP impact data from the LCA studies are combined and multiplied by the 2018 annual production volume of the appropriate product manufactured by each of Owens Corning's three major businesses (Insulation, Composites and Roofing).

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

100

Explanation

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

136,868.32

Emissions calculation methodology

Determination of scope 3 emissions associated with capital goods was performed using an EIO-LCA based method and was calculated using the EIO-LCA on-line tool developed by Carnegie Mellon University¹. Primary data was collected internally on 2018 total spend for capital expenditure. This was in the form of multiple SAP datasets since Owens Corning's facilities use different versions of SAP. Each spend SAP dataset, contains enumerated assets, which have been categorized into one of five asset classes. These five categories are as follows: Miscellaneous Construction (MC); Machinery and Equipment (MAE); Office Equipment (OE); Land (L); and Transportation Equipment (TE). This categorization was followed by identification of the NAICS industry sector² associated with each asset category. The acquisition value total for each category was used as the indicator of economic activity. For each of the five categories and for each of the three SAP datasets, the sum of the asset acquisition value was taken. Each of the six summed values was then multiplied by the GWP per dollar of economic activity associated with the category's respective sector.

The EIO-LCA online tool measures economic activity in 2002 USD. As a result, the 2018 net sales figures were multiplied by a CPI deflator index to convert USD 2018 to USD 2002. An index of 0.72 was determined using the CPI deflator calculator found at <http://stats.areppim.com/index.html>³. These values were the input values for economic activity.

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

100

Explanation

Links to the indicated items in the methodology section:

1. <http://www.eiolca.net/>
- a. <http://www.eiolca.net/cgi-bin/dft/use.pl>
2. <https://www.census.gov/eos/www/naics/>
3. <http://stats.areppim.com/index.html>

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

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

416,520.5

Emissions calculation methodology

The calculation for Scope 3 GHG emissions for Fuel- & Energy- Related Activities (F&ERA) has been carried out by calculating impacts from both upstream and downstream activities associated with electricity generation; these are termed “Scope 3u” and “Scope 3d T&D,” respectively. “Scope 3u” accounts for upstream activities, which are cradle-to-generation in scope; these include the activities from fuel resource extraction and transportation up to, but not including, the point of power generation. “Scope 3d T&D” accounts for downstream activities, which are generation-to-consumption in scope; these include the activities of transmission and distribution, which are downstream of electricity generation. For U.S. facilities, data for these T&D line losses were calculated using U.S. EPA’s eGRID. For non-U.S. facilities, T&D factors were calculated using IEA datasets. A method of differences approach was used to calculate the CO₂e emissions from the upstream activities. First, the cradle-to-transmission impacts were calculated using LCIA factors from the geographic-specific (for U.S. facilities, NERC region-specific) “electricity, high voltage, production mix” activity datasets obtained from the “ecoinvent v3.4 cutoff cumulated LCIA matrices.”¹ Second, in order to isolate the emissions for just the upstream activities, generation-only emission rates were subtracted from the respective ecoinvent LCIA factor determined in the first step. For Owens Corning U.S. facilities, data for generation-only emission rates was obtained from eGRID20162, and for international facilities, data was obtained from IEA3. For downstream activities, the emissions calculated were those associated with T&D line losses. For facilities in the U.S., line loss factors were calculated using eGRID2016, and for international facilities, line loss factors were obtained from IEA3 datasets. For certain facilities, emission factors developed for the 2016 reporting year were used to account for variances in the level of regional data aggregation between the ecoinvent v3.41 and IEA3 datasets. This method was applied to facilities located in Canada, China and India. For these countries, ecoinvent 3.4 only contained factors for

subnational regions whereas the IEA dataset only contained country specific factors. Prior year factors were also used for facilities located in Belgium and France.

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

100

Explanation

1. Treyer K., Bauer C., electricity, high voltage, production mix, Allocation, cut-off by classification, ecoinvent database version 3.4
2. EPA (2018) eGRID, eGRID NERC region annual CO2 equivalent total output emission rate, year 2016 data. U.S. Environmental Protection Agency, Washington, DC.
3. CO2 Emissions from Fuel Combustion (2017 ed.), IEA, Paris.
4. Treyer K., Bauer C., electricity, high voltage, production mix, Allocation, cut-off by classification, ecoinvent database version 3.2
5. EPA (2017) eGRID, eGRID NERC region annual CO2 equivalent total output emission rate, year 2014 data. U.S. Environmental Protection Agency, Washington, DC.
6. CO2 Emissions from Fuel Combustion (2012 Edition), IEA, Paris.
7. IEA Statistics © OECD/IEA 2014

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

182,498.97

Emissions calculation methodology

Primary data was collected internally from Owens Corning logistic analysts for 2018 total spend associated with the inbound transportation of all purchased materials. Spend data was categorized by the mode of transportation (i.e., truck, water, and passenger ground), and the total spend for each of the three transportation mode categories was calculated. After determining the NAICS sector, which is representative of the transportation mode, the GWP intensity per unit of economic activity was determined using eiolca.net

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

100

Explanation

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Explanation

Our waste streams, which are primarily forms of glass, are inert and have negligible emissions.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

13,708.26

Emissions calculation methodology

Business Travel includes commercial air travel and rental car emissions. Methodology: Owens Corning is using Climate Leaders protocol for calculating GHG emissions related to corporate travel.

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

100

Explanation

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

34,455.76

Emissions calculation methodology

Owens Corning uses a simplified version of the Scope 3 GHG Protocol's average-data method to calculate employee commuting emissions. We use the U.S. EPA Greenhouse Gas Emissions from a Typical Passenger Vehicle (<http://www.epa.gov/otaq/climate/documents/420f14040a.pdf>) to determine an estimate of 411 grams of CO2 per mile. Starting with Worldmapper Commuting Time By Country (<http://www.worldmapper.org/display.php?selected=141>) data, we multiply those times by the number of Owens Corning employees by country to estimate our employees' average roundtrip commuting distance in miles. The corporate-average roundtrip commuting distance is multiplied by the OECD average number of days worked per year (<http://stats.oecd.org/index.aspx?DataSetCode=ANHRS>) and Owens Corning's annual employee count. Using this methodology, Owens Corning's estimated 2018 employee commuting GHG emissions is 34,456 MT CO2. Because this calculation is an estimate at a high-level, Owens Corning assumes that these calculated emissions for employee commuting are overstated, especially since we assume that all employees are in a single car commuting daily. This does not take into account telecommuting, public

transportation, carpooling, business travel days that would be accounted for separately, or other methods of commuting.

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

100

Explanation

Because this is a high level estimated calculation, Owens Corning assumes that these calculated emissions for employee commuting are overstated, since we assume that all employees are in a single car commuting daily. This does not take into account telecommuting, public transportation, carpooling, business travel days that would be accounted for separately, or other methods of commuting.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

All our relevant leased assets have been accounted for under Scope 2 emissions. We account for both their estimated electricity usage and estimated GHG Emissions based on the square footage of space while utilizing factors from the Energy Star Portfolio Manager (1) Energy Star Portfolio Manager - Energy Star Score for Warehouses in the United States for warehouses, (2) Energy Star Portfolio Manager - Energy Use in Office Buildings for building types of office and other. The data is subsequently calculated using factors from the US EPA EGRID and the 2006 IPCC International Fuel-based Electricity Emission Factors for CO2 factors as appropriate.

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

530,244.94

Emissions calculation methodology

Primary data was collected internally from Owens Corning logistic analysts for 2018 total spend associated with the outbound distribution and transportation for finished goods. Transportation spend data was allocated entirely to truck transportation as the mode of distribution for a more conservative approximation. Total transportation spend was used as the indicator of economic activity and used as the input in the EIO-LCA on-line tool.

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

100

Explanation

Processing of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

438,745.62

Emissions calculation methodology

Scope 3 emissions were calculated and determined for Owens Corning's composites business only, which primarily manufactures intermediate products. These glass fibers are, primarily, used by customers in order to make glass-fiber reinforced plastic (GFRP) materials. Calculation of Scope 3 emissions involved identifying the NAICS sector associated with GFRP manufacturing followed by developing a process scaling-factor based on the total economic flow of the NAICS sector for glass fiber manufacturing (i.e., 327212: "Other pressed and blown glass and glassware manufacturing") within the sector for GFRP manufacturing. The total economic activity generated when the Net Sales of Composites, in USD 2002, was used as the indicator of final demand economic activity within the 327212 industry sector was determined from the eiolca.net tool. The input value and selections used in the tool as well as a subset of the results can be found in the image below.

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

100

Explanation

Use of sold products

Evaluation status

Not relevant, explanation provided

Explanation

None of our products have end use energy consumption. The impact from the use of sold products is avoided emissions. Our building insulation products sold in North America during the calendar year 2018 were estimated to reduce the GHG emissions for home owners by approximately 10.2 million metric tons CO₂-e a year and 611 million metric tons over the building's lifetime.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

202,468.63

Emissions calculation methodology

Scope 3 emissions associated with the EoL of fiberglass insulation and XPS insulation products manufactured in 2018 were calculated. EoL emission factors were determined from cradle-to-grave EPDs, and the LCAs upon which they are based, on Owens Corning® fiberglass insulation and XPS insulation. The 3rd party verified LCAs were internally conducted for these products in 2012 and 2013, respectively, and were updated in 2017 and 2018. These factors (i.e., from the updated LCAs) were used in conjunction with 2018 production volumes for these two insulation materials to determine the scope 3 emissions when the production volume quantities are disposed as waste-to-landfill. Scope 3 EoL emissions were determined for Owens Corning insulation manufacturing operations, and, more specifically, only for fiberglass and XPS insulation.

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

100

Explanation

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Explanation

Owens Corning does not have any downstream leased assets.

Franchises

Evaluation status

Not relevant, explanation provided

Explanation

Owens Corning has a small basement finishing system franchise business that makes up less than 1% of annual revenues and is immaterial to the company.

Investments

Evaluation status

Not relevant, explanation provided

Explanation

Owens Corning is not a private or public financial institution. All investments in new businesses are accounted for under Scope 1 or Scope 2.

Other (upstream)

Evaluation status

Explanation

Other (downstream)

Evaluation status

Explanation

C6.7

(C6.7) Are carbon dioxide emissions from biologically sequestered 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

0.000539935

Metric numerator (Gross global combined Scope 1 and 2 emissions)

3,810,318

Metric denominator

unit total revenue

Metric denominator: Unit total

7,057,000,000

Scope 2 figure used

Market-based

% change from previous year

11

Direction of change

Decreased

Reason for change

Our 2017 scope 1 and 2 emissions were recalculated per WRI protocol to include our 2018 acquisitions. Additionally, our 2017 published response to C6.10 used a denominator of total revenue in millions rather than in individual dollars, so the 2017 was

higher by a multiple of 1,000,000. In 2018, Owens Corning completed 32 energy-use reduction projects, generating energy savings of over 59,000 MWh and reducing more than 16,500 MT of greenhouse gas emissions per year. From 2017 to 2018, we showed a year-over-year improvement of 7% GHG intensity, which is directly related to our investment in renewable energy.

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 CO ₂ e)	GWP Reference
CO ₂	1,549,172	IPCC Fifth Assessment Report (AR5 – 100 year)
CH ₄	354	IPCC Fifth Assessment Report (AR5 – 100 year)
N ₂ O	529	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	893,034	IPCC Fifth Assessment Report (AR5 – 100 year)
Other, please specify HCFC	390,892	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 CO ₂ e)
Belgium	20,147.74
Brazil	27,250.19
Canada	189,854.01
Chile	92.9
China	494,064.28

Czechia	7,080.69
Finland	25,655.83
France	75,859.09
India	28,253.38
Italy	51,738.09
Lithuania	48,195.89
Mexico	158,722.96
Netherlands	19,843.31
Poland	53,453.32
Russian Federation	73,062.2
Republic of Korea	44,343.57
Spain	64.37
Sweden	69,261.3
United Kingdom of Great Britain and Northern Ireland	2,620.62
United States of America	1,444,416.52

C7.3

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

By business division

C7.3a

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

Business division	Scope 1 emissions (metric ton CO ₂ e)
Corporate	7,150.54
Composite Solutions Business	650,911.61
Foam	1,240,529.75
Insulation Systems Business	759,708.98
Roofing	175,679.13

C7.5

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

Country/Region	Scope 2, location-based	Scope 2, market-based	Purchased and consumed electricity, heat,	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in
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	(metric tons CO2e)	(metric tons CO2e)	steam or cooling (MWh)	market-based approach (MWh)
Belgium	13,000	232	75,101	73,379
Brazil	8,611	8,610	71,580	0
Canada	33,865	32,349	225,166	0
Chile	63	63	142	0
China	129,588	129,527	206,261	0
Czechia	15,669	0	29,425	29,425
Finland	8,738	26,349	74,432	0
France	8,561	5,516	162,748	67,651
India	82,535	82,493	112,968	0
Italy	21,936	31,715	66,073	0
Lithuania	3,531	17,881	25,185	0
Mexico	103,454	103,438	222,100	0
Netherlands	9,940	0	21,321	21,321
Poland	86,860	101,248	120,105	0
Russian Federation	26,307	26,302	82,279	0
Singapore	779	826	1,971	0
Republic of Korea	55,115	55,096	105,282	0
Spain	362	656	1,467	0
Sweden	632	1,592	53,012	0
United Kingdom of Great Britain and Northern Ireland	1,912	2,512	6,825	0
United States of America	927,423	349,933	1,914,251	1,126,216

C7.6

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

By business division

C7.6a

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

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
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Composite Solutions Business	588,293	509,778
Roofing	121,821	115,428
Corporate	115,043	104,006
Foam	21,699	4,026
Insulation Systems Business	692,024	243,100

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	155,000	Decreased	4	In 2018, approximately 52% of our electricity was sourced through renewable sources, such as wind, hydro, solar, and geothermal, across our portfolio globally; this metric is defined as the renewable energy sourced from the grid as well as that sourced from our power purchase agreements (PPAs), including onsite generation. In support of our efforts to reduce our GHG emissions, Owens Corning has expanded its renewable energy portfolio, with 39% of our electricity sourced through renewable sources in 2017. Through our power purchase agreements (PPA), Owens Corning retired 1,120,536 RECs for a total of 524,877 MT CO2e in 2018. This is an increase of 120,983 MT CO2e from RECs between 2017 and 2018. Additionally, Owens Corning had two European locations that received green certificates for the first time in 2018 that

				totalled 34,017 MT CO ₂ e. Combining the PPA Recs and the green certificate plants (120,983+34,017=155,000 MT CO ₂ e) Owens Corning had an incremental 2018 change in renewable energy consumption of 155,000 MT CO ₂ e. Dividing the emissions decrease between 2017 and 2018 (155,000 MT CO ₂ e) over the 2017 Scope 1 and Scope 2 combined total of 3,852,316 gives a decrease of 4.0% in MT CO ₂ e. $((155,000)/3,852,316)*100=4.0\%$ decrease.
Other emissions reduction activities	16,555	Decreased	0.4	Owens Corning had many emission reduction activities during 2018 that had an impact of (16,555 MT). These included energy reduction projects resulting in improved energy efficiency at plants. Dividing the decrease between 2017 and 2018 (16,555 MT CO ₂ e) over the 2017 Scope 1 and Scope 2 combined total of 3,852,316 gives a decrease of 0.4% in MT CO ₂ e. $((16,555)/3,852,316)*100=0.4\%$ decrease
Divestment				
Acquisitions				
Mergers				
Change in output	129,557	Increased	3.4	Our total GHG increase from 2017 due to a change in output is 129,557 MT CO ₂ e. Dividing the increase between 2017 and 2018 of 129,557 MT over the 2017 Scope 1 and Scope 2 combined total of 3,852,316 gives an increase of 3.4% in MT CO ₂ e. $((129,557)/3,852,316)*100=3.4\%$ increase.
Change in methodology				
Change in boundary				
Change in physical operating conditions				
Unidentified				

Other				
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C7.9b

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

Market-based

C8. Energy

C8.1

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

More than 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 undertakes this energy-related activity
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
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 MWh

Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	7,069,873	7,069,873
Consumption of purchased or acquired electricity		1,847,668	1,718,537	3,566,205
Consumption of purchased or acquired heat		0	10,605	10,605
Consumption of purchased or acquired steam		0	884	884
Total energy consumption		1,847,668	8,799,899	10,647,567

C8.2b

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

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

C8.2c

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

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

6,127,613

Comment

Fuels (excluding feedstocks)

Fuel Oil Number 6

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

33,120.68

Comment

Fuels (excluding feedstocks)

Propane Liquid

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

113,693.8

Comment

Fuels (excluding feedstocks)

Jet Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

12,503

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

20,023.82

Comment

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

5,992.03

Comment

Fuels (excluding feedstocks)

Liquefied Natural Gas (LNG)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

39.98

Comment

Fuels (excluding feedstocks)

Petrol

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1,072.83

Comment

Fuels (excluding feedstocks)

Kerosene

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

462.08

Comment

Fuels (excluding feedstocks)

Fuel Oil Number 2

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

4,178.95

Comment

Fuels (excluding feedstocks)

Coke

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

751,173

Comment

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Coke

Emission factor

94.6

Unit

kg CO2e per million Btu

Emission factor source

The Climate Registry 2018 Gen. Reporting Protocol - USA Industrial

Comment

Diesel

Emission factor

74.203

Unit

kg CO₂e per million Btu

Emission factor source

US EPA MRR: Final Rule (40 CFR 98) - Industrial Sector 2013

Comment

Fuel Oil Number 2

Emission factor

74.203

Unit

kg CO₂e per million Btu

Emission factor source

US EPA MRR: Final Rule (40 CFR 98) - Industrial Sector 2013

Comment

Fuel Oil Number 6

Emission factor

75.343

Unit

kg CO₂e per million Btu

Emission factor source

US EPA MRR: Final Rule (40 CFR 98) - Industrial Sector 2013

Comment

Jet Gasoline

Emission factor

9.75

Unit

kg CO₂e per gallon

Emission factor source

The Climate Registry: 2016 Gen. Reporting Protocol - USA Industrial

Comment

Kerosene

Emission factor

75.443

Unit

kg CO₂e per million Btu

Emission factor source

US EPA MRR: Final Rule (40 CFR 98) - Industrial Sector 2013

Comment

Liquefied Natural Gas (LNG)

Emission factor

4.46

Unit

kg CO₂e per gallon

Emission factor source

The Climate Registry: 2018 Gen. Reporting Protocol - USA Transport

Comment

Liquefied Petroleum Gas (LPG)

Emission factor

61.953

Unit

kg CO₂e per million Btu

Emission factor source

US EPA MRR: Final Rule (40 CFR 98) - Industrial Sector 2013

Comment

Natural Gas

Emission factor

53.115

Unit

kg CO₂e per million Btu

Emission factor source

US EPA MRR: Final Rule (40 CFR 98) - Industrial Sector 2013

Comment

Petrol

Emission factor

70.463

Unit

kg CO₂e per million Btu

Emission factor source

US EPA MRR: Final Rule (40 CFR 98) - Industrial Sector 2013

Comment

Propane Liquid

Emission factor

63.113

Unit

kg CO₂e per million Btu

Emission factor source

US EPA MRR: Final Rule (40 CFR 98) - Industrial Sector 2013

Comment

C8.2f

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

Basis for applying a low-carbon emission factor

Power Purchase Agreement (PPA) with energy attribute certificates

Low-carbon technology type

Wind

Region of consumption of low-carbon electricity, heat, steam or cooling

North America

MWh consumed associated with low-carbon electricity, heat, steam or cooling

1,120,536

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

Owens Corning has PPAs for 250 megawatts of renewable electricity - 125 megawatts of wind energy in Texas, and another 125 megawatts in Oklahoma. Through our power purchase agreements (PPA), Owens Corning retired 1,120,536 RECs for a total of 524,877 CO₂e in 2018.

Basis for applying a low-carbon emission factor

Power Purchase Agreement (PPA) with energy attribute certificates

Low-carbon technology type

Solar PV

Region of consumption of low-carbon electricity, heat, steam or cooling

North America

MWh consumed associated with low-carbon electricity, heat, steam or cooling

1,954

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

The solar array system installed at the Toledo, Ohio, world headquarters will satisfy about 25 percent of the building's energy needs. In addition, the project is a highly visible commitment to renewable energy.

Basis for applying a low-carbon emission factor

Power Purchase Agreement (PPA) with energy attribute certificates

Low-carbon technology type

Solar PV

Region of consumption of low-carbon electricity, heat, steam or cooling

North America

MWh consumed associated with low-carbon electricity, heat, steam or cooling

3,381

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

In 2013 Owens Corning announced the developed of 2.7-megawatt solar generation project that would supply renewable electricity to the Delmar, New York, site. For 2018, this installation provided approximately 7 percent of the electricity required.

Basis for applying a low-carbon emission factor

Contract with suppliers or utilities (e.g. green tariff), not supported by energy attribute certificates

Low-carbon technology type

Hydropower

Region of consumption of low-carbon electricity, heat, steam or cooling

Europe

MWh consumed associated with low-carbon electricity, heat, steam or cooling

67,650.73

Emission factor (in units of metric tons CO₂e per MWh)

0.000159

Comment

Owens Corning's L'Ardoise, France facility has 100 percent of its electric power supplied by hydro-electric power.

Basis for applying a low-carbon emission factor

Power Purchase Agreement (PPA) with energy attribute certificates

Low-carbon technology type

Wind

Region of consumption of low-carbon electricity, heat, steam or cooling

Europe

MWh consumed associated with low-carbon electricity, heat, steam or cooling

9,552.5

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

Our Tessenderlo, Belgium, location sourced 12% of its electricity from wind turbines onsite and offsite.

Basis for applying a low-carbon emission factor

Contract with suppliers or utilities (e.g. green tariff), supported by energy attribute certificates

Low-carbon technology type

Wind

Region of consumption of low-carbon electricity, heat, steam or cooling

Europe

MWh consumed associated with low-carbon electricity, heat, steam or cooling

21,321

Emission factor (in units of metric tons CO2e per MWh)

0

Comment

Our Apeldoorn site in the Netherlands has a contract with a supplier for wind energy supported by EAC's.

Basis for applying a low-carbon emission factor

Contract with suppliers or utilities (e.g. green tariff), supported by energy attribute certificates

Low-carbon technology type

Hydropower

Region of consumption of low-carbon electricity, heat, steam or cooling

Europe

MWh consumed associated with low-carbon electricity, heat, steam or cooling

29,425

Emission factor (in units of metric tons CO2e per MWh)

0

Comment

Our Klasterec site in the Czech Republic has a contract with a supplier for hydropower supported by EAC's.

Basis for applying a low-carbon emission factor

Grid mix of renewable electricity

Low-carbon technology type

Solar PV

Wind

Hydropower

Nuclear
Biomass (including biogas)

Region of consumption of low-carbon electricity, heat, steam or cooling

North America

MWh consumed associated with low-carbon electricity, heat, steam or cooling

197,444

Emission factor (in units of metric tons CO₂e per MWh)

Comment

Emission factors vary based on eGrid region.

Basis for applying a low-carbon emission factor

Power Purchase Agreement (PPA) with energy attribute certificates

Low-carbon technology type

Solar PV

Region of consumption of low-carbon electricity, heat, steam or cooling

North America

MWh consumed associated with low-carbon electricity, heat, steam or cooling

344.7

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

Kearny, New Jersey roofing plant with solar

Basis for applying a low-carbon emission factor

Contract with suppliers or utilities (e.g. green tariff), supported by energy attribute certificates

Low-carbon technology type

Hydropower

Region of consumption of low-carbon electricity, heat, steam or cooling

Europe

MWh consumed associated with low-carbon electricity, heat, steam or cooling

63,826.72

Emission factor (in units of metric tons CO₂e per MWh)

0

Comment

Our Tessenderlo site in Belgium has a contract with a supplier for hydropower supported by EAC's.

Basis for applying a low-carbon emission factor

Grid mix of renewable electricity

Low-carbon technology type

Solar PV
Wind
Hydropower
Nuclear

Region of consumption of low-carbon electricity, heat, steam or cooling

Asia Pacific

MWh consumed associated with low-carbon electricity, heat, steam or cooling

155,964

Emission factor (in units of metric tons CO₂e per MWh)

Comment

IEA Emission factors vary based on country.

Basis for applying a low-carbon emission factor

Grid mix of renewable electricity

Low-carbon technology type

Solar PV
Wind
Hydropower
Nuclear

Region of consumption of low-carbon electricity, heat, steam or cooling

Europe

MWh consumed associated with low-carbon electricity, heat, steam or cooling

82,297

Emission factor (in units of metric tons CO₂e per MWh)

Comment

IEA Emission factors vary based on country.

Basis for applying a low-carbon emission factor

Grid mix of renewable electricity

Low-carbon technology type

Solar PV

Wind

Hydropower

Nuclear

Region of consumption of low-carbon electricity, heat, steam or cooling

Latin America

MWh consumed associated with low-carbon electricity, heat, steam or cooling

93,981

Emission factor (in units of metric tons CO₂e per MWh)

Comment

IEA Emission factors vary based on country.

C9. Additional metrics

C9.1

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

Description

Metric value

Metric numerator

Metric denominator (intensity metric only)

% change from previous year

Direction of change

Please explain

C10. Verification

C10.1

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

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

C10.1a

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

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

High assurance

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/ section reference

Pages 225-227 SCS Global Services Independent Assurance Statement.

Scope

For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted.

Standards

AA1000 Assurance Standard (2008).

Global Reporting Initiative's (GRI) Standards for reporting.

ISAE 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information

ISO 14064-3:2006

P. 226 Conclusions

Relevant standard

A1000AS

Proportion of reported emissions verified (%)

100

 2018-Owens-Corning-Sustainability-Report.pdf

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

High assurance

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/ section reference

Pages 225-227 SCS Global Services Independent Assurance Statement.

Scope

For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted.

Standards

AA1000 Assurance Standard (2008).

Global Reporting Initiative's (GRI) Standards for reporting.

ISAE 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information

ISO 14064-3:2006

P. 226 Conclusions

Relevant standard

A1000AS

Proportion of reported emissions verified (%)

100

 2018-Owens-Corning-Sustainability-Report.pdf

Scope

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

High assurance

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/ section reference

Pages 225-227 SCS Global Services Independent Assurance Statement.

Scope

For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted.

Standards

AA1000 Assurance Standard (2008).

Global Reporting Initiative's (GRI) Standards for reporting.

ISAE 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information

ISO 14064-3:2006

P. 226 Conclusions

Relevant standard

A1000AS

Proportion of reported emissions verified (%)

100

 2018-Owens-Corning-Sustainability-Report.pdf

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

High assurance

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/ section reference

Pages 225-227 SCS Global Services Independent Assurance Statement.

Scope

For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted.

Standards

AA1000 Assurance Standard (2008).

Global Reporting Initiative's (GRI) Standards for reporting.

ISAE 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information

ISO 14064-3:2006

P. 226 Conclusions

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

 2018-Owens-Corning-Sustainability-Report.pdf

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

High assurance

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/ section reference

Pages 225-227 SCS Global Services Independent Assurance Statement.

Scope

For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted.

Standards

AA1000 Assurance Standard (2008).

Global Reporting Initiative's (GRI) Standards for reporting.

ISAE 3000 (Revised)

ISO 14064-3:2006 Specification with guidance for the validation and verification of GHG assertions

P. 226 Conclusions

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

 2018-Owens-Corning-Sustainability-Report.pdf

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

High assurance

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/ section reference

Pages 225-227 SCS Global Services Independent Assurance Statement.

Scope

For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted.

Standards

AA1000 Assurance Standard (2008).

Global Reporting Initiative's (GRI) Standards for reporting.
ISAE 3000 (Revised), Assurance Engagements Other than Audits or Reviews of
Historical Financial Information
ISO 14064-3:2006

P. 226 Conclusions

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

 2018-Owens-Corning-Sustainability-Report.pdf

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

High assurance

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/ section reference

Pages 225-227 SCS Global Services Independent Assurance Statement.

Scope

For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of
assurance was conducted.

Standards

AA1000 Assurance Standard (2008).

Global Reporting Initiative's (GRI) Standards for reporting.

ISAE 3000 (Revised)

ISO 14064-3:2006 Specification with guidance for the validation and verification of GHG
assertions

P. 226 Conclusions

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

 2018-Owens-Corning-Sustainability-Report.pdf

Scope

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

High assurance

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/ section reference

Pages 225-227 SCS Global Services Independent Assurance Statement.

Scope

For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted.

Standards

AA1000 Assurance Standard (2008).

Global Reporting Initiative's (GRI) Standards for reporting.

ISAE 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information

ISO 14064-3:2006

P. 226 Conclusions

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

 2018-Owens-Corning-Sustainability-Report.pdf

Scope

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

High assurance

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/ section reference

Pages 225-227 SCS Global Services Independent Assurance Statement.

Scope

For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted.

Standards

AA1000 Assurance Standard (2008).

Global Reporting Initiative's (GRI) Standards for reporting.

ISAE 3000 (Revised)

ISO 14064-3:2006 Specification with guidance for the validation and verification of GHG assertions

P. 226 Conclusions

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

 2018-Owens-Corning-Sustainability-Report.pdf

C10.1b

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

Scope

Scope 3- all relevant categories

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/section reference

P 225-227

Scope

A moderate level of assurance was performed for 2018 Scope 3 greenhouse gas emissions

Standards

Conclusions

Our review of the management systems, data and calculations regarding Owens Corning's reporting of 2018 Scope 3 greenhouse gas emissions ... were assured at a moderate-level and no material errors or misstatements identified in the final draft chapters of the report.

Relevant standard

AA1000AS

Scope

Scope 3- all relevant categories

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/section reference

P 225-227

Scope

A moderate level of assurance was performed for 2018 Scope 3 greenhouse gas emissions

Standards

Conclusions

Our review of the management systems, data and calculations regarding Owens Corning's reporting of 2018 Scope 3 greenhouse gas emissions ... were assured at a moderate-level and no material errors or misstatements identified in the final draft chapters of the report.

Relevant standard

ISAE3000

Scope

Scope 3- all relevant categories

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Attach the statement

 2018-Owens-Corning-Sustainability-Report.pdf

Page/section reference

P 225-227

Scope

A moderate level of assurance was performed for 2018 Scope 3 greenhouse gas emissions

Standards

Conclusions

Our review of the management systems, data and calculations regarding Owens Corning’s reporting of 2018 Scope 3 greenhouse gas emissions ... were assured at a moderate-level and no material errors or misstatements identified in the final draft chapters of the report.

Relevant standard

ISO14064-3

C10.2

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

Yes

C10.2a

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

Disclosure module verification relates to	Data verified	Verification standard	Please explain

C8. Energy	Other, please specify Global Energy Sources	ISAE 3000, AA1000	Energy consumption amount for all energy sources are verified in compliance with ISAE 3000. The statement attests that SCS Global Services provides a high level of assurance.
C6. Emissions data	Year on year change in emissions (Scope 1 and 2)	ISAE 3000, AA1000, ISO 14064-3	The scope of SCS' work included Owens Corning's global operations. A Type 2 Assurance Engagement was performed to evaluate Owens Corning against the AA1000 Principles to a moderate level. In addition, SCS provided assurance on the reasonableness of specific performance data. For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted. A moderate level of assurance was performed for 2018 Scope 3 greenhouse gas emissions and the following 2018 performance data: water usage, waste streams, specified air pollution emissions (particulate matter 2.5 microns or less, NOX and SOX), key social performance indicators, and 2018 progress towards 2020 sustainability goals included in the Report.
C6. Emissions data		ISAE 3000, AA1000, ISO 14064-3	The scope of SCS' work included Owens Corning's global operations. A Type 2 Assurance Engagement was performed to evaluate Owens Corning against the AA1000 Principles to a moderate level. In addition, SCS provided assurance on the reasonableness of specific performance data. For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted. A moderate level of assurance was performed for 2018 Scope 3 greenhouse gas emissions and the following 2018 performance data: water usage, waste streams, specified air pollution emissions (particulate matter 2.5 microns or less, NOX and SOX), key social performance indicators, and 2018 progress towards 2020 sustainability goals included in the Report.
C8. Energy	Renewable energy products	AA1000, ISAE 3000	The scope of SCS' work included Owens Corning's global operations. A Type 2 Assurance Engagement was performed to evaluate Owens Corning against the AA1000 Principles to a moderate level. In addition, SCS provided assurance on the reasonableness of specific

			performance data. For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted. A moderate level of assurance was performed for 2018 Scope 3 greenhouse gas emissions and the following 2018 performance data: water usage, waste streams, specified air pollution emissions (particulate matter 2.5 microns or less, NOX and SOX), key social performance indicators, and 2018 progress towards 2020 sustainability goals included in the Report.
C4. Targets and performance	Financial or other base year data points used to set a science-based target	AA1000, ISAE 3000	The scope of SCS' work included Owens Corning's global operations. A Type 2 Assurance Engagement was performed to evaluate Owens Corning against the AA1000 Principles to a moderate level. In addition, SCS provided assurance on the reasonableness of specific performance data. For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted. A moderate level of assurance was performed for 2018 Scope 3 greenhouse gas emissions and the following 2018 performance data: water usage, waste streams, specified air pollution emissions (particulate matter 2.5 microns or less, NOX and SOX), key social performance indicators, and 2018 progress towards 2020 sustainability goals included in the Report.
C5. Emissions performance	Progress against emissions reduction target	AA1000, ISAE 3000	The scope of SCS' work included Owens Corning's global operations. A Type 2 Assurance Engagement was performed to evaluate Owens Corning against the AA1000 Principles to a moderate level. In addition, SCS provided assurance on the reasonableness of specific performance data. For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted. A moderate level of assurance was performed for 2018 Scope 3 greenhouse gas emissions and the following 2018 performance data: water usage, waste streams, specified air pollution emissions (particulate matter 2.5 microns or less, NOX and SOX), key social performance indicators, and 2018 progress towards 2020 sustainability goals included in the Report.

C4. Targets and performance	Progress against emissions reduction target	AA1000, ISAE 3000	The scope of SCS' work included Owens Corning's global operations. A Type 2 Assurance Engagement was performed to evaluate Owens Corning against the AA1000 Principles to a moderate level. In addition, SCS provided assurance on the reasonableness of specific performance data. For 2018 Scope 1 and 2 greenhouse gas emissions and energy use, a high level of assurance was conducted. A moderate level of assurance was performed for 2018 Scope 3 greenhouse gas emissions and the following 2018 performance data: water usage, waste streams, specified air pollution emissions (particulate matter 2.5 microns or less, NOX and SOX), key social performance indicators, and 2018 progress towards 2020 sustainability goals included in the Report.
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C11. Carbon pricing

C11.1

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

Yes

C11.1a

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

- Beijing pilot ETS
- California CaT
- EU ETS
- Korea ETS
- Québec CaT

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

Beijing pilot ETS

% of Scope 1 emissions covered by the ETS

1

Period start date

January 1, 2018

Period end date

December 31, 2018

Allowances allocated

24,854

Allowances purchased

588

Verified emissions in metric tons CO₂e

24,613

Details of ownership

Facilities we own and operate

Comment

California CaT

% of Scope 1 emissions covered by the ETS

1

Period start date

January 1, 2018

Period end date

December 31, 2018

Allowances allocated

32,384

Allowances purchased

0

Verified emissions in metric tons CO₂e

17,193

Details of ownership

Facilities we own and operate

Comment

EU ETS

% of Scope 1 emissions covered by the ETS

16

Period start date

January 1, 2018

Period end date

December 31, 2018

Allowances allocated

156,626

Allowances purchased

0

Verified emissions in metric tons CO₂e

449,986

Details of ownership

Facilities we own and operate

Comment

Korea ETS

% of Scope 1 emissions covered by the ETS

3

Period start date

January 1, 2018

Period end date

December 31, 2018

Allowances allocated

86,954

Allowances purchased

0

Verified emissions in metric tons CO₂e

91,912

Details of ownership

Facilities we own and operate

Comment

Québec CaT

% of Scope 1 emissions covered by the ETS

5

Period start date

January 1, 2018

Period end date

December 31, 2018

Allowances allocated

122,625

Allowances purchased

0

Verified emissions in metric tons CO₂e

144,950

Details of ownership

Facilities we own and operate

Comment

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

Owens Corning implemented a global strategy to reduce emissions of greenhouse gas across our operations. This strategy is represented in our greenhouse intensity goal of a 50% reduction from 2010 to 2020. As a company, we focus on reducing the emissions from our raw materials and processing, increasing renewable energy sources, while also implementing low cost/no-cost solutions to drive reductions. The EU ETS is a tool that we can use to ensure that we reduce our GHG emissions and reduce our costs related to the trading scheme.

Additionally, in prior years we have reorganized operations by loading and upgrading the most efficient assets. Owens Corning has a long-term strategy to manage its CO₂ allowances focused on compliance with regulations and then driving cost reductions while taking advantage of market opportunities in areas where trading schemes are in existence. Facilities under EU ETS continue to improve their energy and GHG efficiency. However, allowances are decreasing year on year by a flat rate without consideration of production increase. This explains the emissions being higher than allowances. The difference is compensated by surplus allowances from previous years.

One way we seek to reduce our emissions is through energy savings projects. In 2018, we implemented 32 projects, generating energy savings of over 59,000 MWh and reducing more than 16,500 MT of GHG emissions/year. Generally, we invest in energy/GHG reduction projects costing about \$3MM per year company-wide.

C11.2

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

No

C11.3

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

Yes

C11.3a

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

Objective for implementing an internal carbon price

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

GHG Scope

- Scope 1
- Scope 2
- Scope 3

Application

Includes all 2018 Scope 1 and Scope 2 (Market-based) Emissions as well as 2018 Scope 3 Emissions for business travel only for a total of 3,824,027 MT CO₂e.
Price of \$60 (internal analytics used from \$10/metric ton to a high of \$60/metric ton)
We consider Scope 1, 2 and 3 emissions, and have both internal and externally published reduction goals. We use our aligned and committed reduction goals to drive strategy and action, not an actual carbon charge such as an internal carbon tax. For use in internal decision making and risk analysis, we place an economic value on carbon emissions to help frame the challenges and opportunities in monetary, more broadly understood terms than simply tons of emissions. This includes considering the impact on our operations and our supply chain. Quantifying these added costs, in the event that a price is put on carbon in regions around the world where a current price or trading scheme is not in place, provides additional insight into our business.

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

60

Variance of price(s) used

Price of \$60 (internal analytics used on the low end at \$10/metric ton and a high of \$60/metric ton)

Type of internal carbon price

Internal fee

Impact & implication

We consider Scope 1, 2 and 3 emissions, and have both internal and externally published reduction goals. We use our aligned and committed reduction goals to drive strategy and action, not an actual carbon charge such as an internal carbon tax. For use in internal decision making and risk analysis, we place an economic value on carbon emissions to help frame the challenges and opportunities in monetary, more broadly understood terms than simply tons of emissions. This includes considering the impact on our operations and our supply chain. Quantifying these added costs, in the event that a price is put on carbon in regions around the world where a current price or trading scheme is not in place, provides additional insight into our business decisions. We bracket this analysis, on the low end at \$10/metric ton and a high of \$60/metric ton.

One example of how we have used the internal price on carbon is to estimate a cost savings associated with reaching our 2020 50% intensity reduction goal for GHG emissions. We can take the estimated difference in metric tons CO₂e from 2018 year-end and the end of our 2020 goals and then multiply that by \$60/metric ton to get the high-end estimate of the cost savings from emissions reduction. This range of emissions reduction costs (using cost per ton of \$10/metric ton to \$60/metric ton) can be used for planning purposes to evaluate options to reach our 2020 goals.

We have also been able to quantify our current risk in the event of a carbon tax, how dramatically we have reduced that since our peak GHG emissions year of 2007, and also value our future forecasted reductions of emissions.

C12. Engagement

C12.1

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

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

C12.1a

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

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Climate change performance is featured in supplier awards scheme

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

As part of Owens Corning's annual Supplier Awards, a Sustainability Award is given. Sustainability performance is a factor in the determination of the overall Supplier of the Year award. All suppliers are eligible for the award.

Impact of engagement, including measures of success

The impact of the engagement is to understand Owens Corning's sustainability strategy and what our suppliers can do to help us meet it. The measure of success is the number of suppliers nominated for the Owens Corning Sustainability Award, as well as the impact of their contribution to our improved sustainability performance. Helping us to achieve our targets can only be done by our suppliers improving their own sustainability performance, so this is a win/win situation for our value chain. Companies are nominated for the award by our commodity leaders based on their knowledge of our supplier's sustainability performance and initiatives. The Award ceremony on Supplier Day is an opportunity to share Owens Corning's sustainability goals and initiatives, and also share the best practices from our suppliers who win the award. As more suppliers recognize the benefit to them to become more engaged with sustainability, it helps us as the inputs to our products are better, eventually reflected in our LCAs. One example of how this improved engagement from the sustainability award process has been successful for us is a customer who approached Owens Corning about their efforts to increase their recycled content, which in turn increased the amount of recycled content in our own products.

Comment

Type of engagement

Compliance & onboarding

Details of engagement

Included climate change in supplier selection / management mechanism
Code of conduct featuring climate change KPIs
Climate change is integrated into supplier evaluation processes

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

We believe all suppliers should have sustainability goals as part of their performance objectives, and measure progress against those goals. Supply chain transparency helps us evaluate impact, foresee risks, and identify opportunities to improve environmental, social, and economic performance. Where we find gaps, Owens Corning is committed to driving measurable improvements in supplier focus, prioritization, engagement, performance, and risk mitigation through world-class sourcing practices. All suppliers are covered by our Code of Conduct. In addition, all suppliers are evaluated by the same process, which includes climate change related criteria. Our supplier code of conduct outlines the various expectations we have of our suppliers, including key principles we expect our suppliers to embrace, and acts prospectively as a reference for us in our sourcing selection processes. The supplier code of conduct states that suppliers are expected to • Provide adequate management systems for EHS and product stewardship programs; • Provide products that are safe and environmentally sound during use and disposal; • Have programs to reduce the environmental impact of their products, such as reduction of discharges into natural surroundings and other sources of pollution; and • Establish goals and monitor the reduction of their environmental footprint.

Impact of engagement, including measures of success

Supply chain transparency helps us evaluate impact, foresee risks, and identify opportunities to improve environmental, social, and economic performance. Where we find gaps, Owens Corning is committed to driving measurable improvements in supplier focus, prioritization, engagement, performance, and risk mitigation through world-class sourcing practices. Owens Corning is committed to carrying out our 2020 supply chain sustainability goal, including setting clear expectations for sustainability progress by our suppliers. Owens Corning has sustainability risk indicators that coincide with aspects of our supplier code of conduct. Based on these indicators and performance indicators described in our segmentation process, we adopted a risk assessment framework that maps environmental, social, and governance risks for the segmented supplier base. We conduct an annual supplier survey mapped to the ESG risk categories. This survey is kept open throughout the year to allow any new suppliers to contribute. Based on responses, we assess all participating suppliers holistically. The analytics drawn from our survey results help identify risks, best practices, and opportunities across our supply base. In 2017, we advanced our understanding of the analytics and standardized the way we create, communicate, and execute strategies between key suppliers and our commodity leaders, continuing this in 2018. Furthermore, we train all Owens Corning commodity leaders globally to ensure a consistent process across the company. Our organization utilizes an industry standard format for corrective actions that includes a

short-term action and containment plan, root cause analysis, identification and verification of long-term corrective actions, implementation of long-term corrective action, and final verification and sign-off by stakeholders.

Comment

C12.1b

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

Type of engagement

Education/information sharing

Details of engagement

Share information about your products and relevant certification schemes (i.e. Energy STAR)

% of customers by number

30

% Scope 3 emissions as reported in C6.5

0

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

In 2017 Owens Corning manufactured the world's first products certified as made with 100% wind-powered electricity and reduced embodied carbon: EcoTouch® Insulation, Thermafiber® RainBarrier® continuous insulation, and unbonded loosefill insulation. Owens Corning engaged its insulation customers on its low carbon products through direct communication by the sales force, by press releases, with an updated website, and through speaking and presenting at conferences such as Greenbuild, AIA, AEC, the Net Zero conference, and others.

In 2018, due to increasing customer demand, we expanded the number of certified products available.

Impact of engagement, including measures of success

In 2017, Owens Corning launched the first insulation products to be certified as made with 100% wind-powered electricity and reduced embodied carbon, in accordance with SCS Global Services' certification protocol. The SCS certification and these new certified products were made possible by the power purchase agreements Owens Corning signed in 2015, which enabled new wind capacity in Texas and Oklahoma. Both wind farms came online in late 2016 and have the potential to generate 1.1 million megawatt hours of electricity per year. The first three types of commercial and residential insulation independently certified as made with wind-powered electricity are:

• EcoTouch® Insulation – 35% embodied carbon reduction • Thermafiber® RainBarrier® Continuous Insulation – 20% embodied carbon reduction • Unbonded Loosefill Insulation – 55% embodied carbon reduction. In 2018, we added QuietR Duct Board Insulation and EcoTouch Insulation for Flexible Ducts. These certified insulation products give commercial architects and specifiers, builders, and even homeowners the option of lower-carbon products to build greener structures. Plus, they help architects design buildings with reduced life cycle impacts, which in turn helps them reach the recognized goals of the Architecture 2030 Challenge and U.S. Green Building Council's LEED® certification. We measure success by how well we have educated the marketplace, including architects, builders, etc. To make homes more energy efficient and have lower embodied carbon, we influence building codes and try to showcase more incentives for people to pay attention to low carbon products. We want to create pull through in the market place for these types of products. Owens Corning's products, like low embodied carbon insulation, help make the world a better place. The ultimate measure of success is increased sales of our low carbon products.

C12.1c

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

In addition to suppliers and customers, we consider it critical to execute a climate engagement strategy including architects and builders. A key element that drives product sustainability for Owens Corning is our building science work. Building science is about ensuring that buildings and homes are built to be comfortable, energy efficient, high performing, durable, sustainable, and affordable. Our building science team applies scientific knowledge and experience to analyze and control the physical phenomena that affect building structures. We view homes and other buildings as systems, looking beyond standard improvements, such as adding internal insulation, while also considering location and climate. Our predictive capabilities – when applied, for example, to building materials, the building envelope, heating, ventilation, and air conditioning systems – enable architects, builders, contractors, and homeowners to optimize building performance, understand or prevent building failures, and ensure year-round comfort. Our work in this area includes several broad strategies:

1. Developing innovative building products and systems to improve energy efficiency and building comfort;
2. Partnering and collaborating with builders, contractors, architects, and homeowners to adopt better building products and systems, based on building science;
3. Supporting building code compliance and advocating for code improvements; and
4. Sharing our building science expertise across the building industry through education

We actively partner with builders, contractors, architects, and homeowners to improve building performance and comfort. Our building science team works closely with them to support projects from blueprint through the construction phase. Together, we address climate challenges and achieve performance goals as measured in part by the Home Energy Rating System (HERS) Index.

One of the primary performance goals for our building science team has been to support the design and construction of net-zero-energy (NZE)-ready buildings. An NZE building has zero annual net energy consumption, meaning the total amount of energy the building produces equals the amount of energy it consumes. An NZE-ready building is designed to be ultra-efficient, and when combined with the use of renewable energy, such as solar panels, it can achieve net-zero energy status.

In 2015, we set a goal to increase the number of Owens Corning-supported NZE-ready buildings year-over-year, compared to a 2015 baseline of 35. Through strategic partnerships with several homebuilders, we continue to outperform our goal. We supported more than 400 such homes in 2018.

A pathway to achieving NZE is the Owens Corning ComfortBuilt® Home, a building performance program that helps builders profitably design, construct, and market better-built homes using Owens Corning solutions. The program established a target of HERS50 for participating builders, intended to be a stretch above the building code and in sight of NZE. This program helps builders advance on the path to creating more sustainable homes and more profitable businesses while differentiating themselves.

Owens Corning offers building science information such as modeling, techniques for air sealing, and continuous insulation as well as marketing assistance to help realize the goal that everyone can win with higher-performing homes.

In some instances, we use our building science expertise to advocate for building code improvements that make compliance easier and help to achieve better energy performance. Our work in Chile is a great example. To keep homes warm in Chile, many residents burn large amounts of wood, which has resulted in severe environmental pollution across the country, especially in regions in South Chile where winters are very cold. Through research, benchmarking with international standards, and fieldwork discussions with builders and homeowners, our building science team found that additional improvements in insulation and air sealing would help keep homes warmer – allowing residents to cut down on wood burning and, therefore, reduce environmental pollution. We worked closely with Chilean organizations to support increases in requirements related to external and internal insulation. A revised version of the code, with the proposed changes, is under consideration by the Housing and Urban Development Ministry in Chile. If implemented as proposed, envelope requirements will significantly reduce heat transmission values in all regions of the country by increasing insulation requirements and air sealing.

C12.3

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

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

C12.3a

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

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Energy efficiency	Support	Texas Energy Code Compliance and Enforcement: Local engagement with State Energy and Building Professionals to facilitate consistent compliance or enforce energy codes.	After legislation and regulations are in place, the challenge is to pivot to education and training so as to drive compliance. Owens Corning has worked with Building Official Assns, SPEER, Home Energy Raters, and local governments trying to get consistent and uniform compliance with the energy codes. Owens Corning provides education and training for home builders, trade contractors, and resource poor building depts and inspectors on the proper application of the energy code.
Energy efficiency	Support	Local and State Energy Codes, Gaining adoption of 2015 energy codes: Local engagement with State Energy and Building Professionals to either adopt or enforce energy codes; Engagement and training with local leaders, building codes officials, policy makers. Mostly at the State level.	Adopt the 2015 Energy Code, Enforce the energy codes that have been adopted.
Other, please specify Indoor Environmental Quality	Support	Starting with schools and especially classrooms/learning environments, we are working to get acoustics and noise control requirements adopted. Poor acoustics disproportionately impacts people with learning disabilities, head injuries, and senior citizens. We have this adopted in various State agency rules and working to put this into the 2021 Intl Building Code (IBC). Further, we are exploring voluntary guidelines for restaurants, and mandatory provisions for courtrooms, jury deliberation rooms, and medical	We engage with the following: The federal US Access Board with accountability for the American's with Disabilities Act (ADA) Accessibility Guidelines; the US Dept of Justice (which implements the ADA); the US Dept of Education which issues rules and guidelines for schools and children with disabilities; State depts of Education and state building code authorities to put in place the ANSI/ICC A117.1 Accessibility Standards which includes provisions for

		care facilities, including those impacted by HIPPA. Owens Corning organized and facilitates an ad hoc Working Group on Acoustics in Classrooms and other occupancies.	classrooms and learning environments.
Clean energy generation	Support	Owens Corning supported legislative efforts to fix Ohio's wind setback law, restricting wind turbines on commercial wind farms from being constructed within 1,300 feet from the closest property line.	Legislation that was being considered in the Ohio Statehouse would amend the setback to 120 percent of a turbine's height.
Energy efficiency	Support	2018 International Energy Conservation Code - defended conservation, included new compliance options for builders for Net Zero Ready Homes: We worked to defend against the weakening of the 2015 IECC, limit the inclusion and reach of solar PV as a compliance path, and create new options for builders with attic systems and duct systems.	Owens Corning lead the stealth effort to build a scientific and economic model showing how ill-advised it was on consumers and climate to allow solar/PV to be included in the code "unrestrained" and mapped out a win-win path that allowed solar into the code provided some mandatory minimums were complied with in new homes.
Energy efficiency	Support	Grain Belt Express Clean Line: Owens Corning publicly supported a large scale wind opportunity, Grain Belt Express Clean Line, brought by a transmission company to build a line to transmit 4,000 megawatts of low-cost wind energy from Kansas to Missouri and PJM.	Owens Corning encouraged the Missouri Public Service Commission to provide companies increased access to affordable, renewable energy by approving the Grain Belt Express Clean Line.
Energy efficiency	Support	CA 2019 Bldg Energy Efficiency Standards (BEES) – worked with the various investor owned utilities (IOUs) to present our rationale for improvements to the 2019 BEES to ensure homes and building efficiency was maximized and not orphaned and traded-off against intermittent and not 24/7 generation (PV). Further worked	Owens Corning promoted a coalition of the insulation industry, environmental groups, affordable housing groups, labor, and utilities to put in place barriers to trading off PV and Storage for high ROI/persistent energy efficiency in the draft 2019 BEES. We further worked with the CA-based Passive House advocates

		<p>with the CA Energy Commission (CEC) to ensure that low-load homes and buildings were given their justified weigh in the calculus that determines what is cost effective. Promoted a shift to a carbon model for the next code cycle (2022) rather than simply a peak-load driven set of criteria. Also engaged the CPUC, CARB, NRDC and other environmental groups to ensure that the scales were not emotionally tilted excessively towards generation and storage until persistent and 24/7 base building load reductions were more firmly enshrined in the code.</p>	<p>to promote this Passive House as a compliance path in the next code cycle (2022) and in CALGreen.(CA's green code). Further. We weigh in with the CPUC on new and existing home incentives for EE, and work through NGOs to impact CA's Integrated Energy Policy Report – the state's roadmap for hitting climate, carbon, and energy goals.</p>
Energy efficiency	Support	<p>CA Local Govt Solar Mandates/Ordinances – worked with the CEC and other affected parties to create a model ordinance addressing local govt mandates to adopt solar in new construction to ensure that this did not allow builders to reduce the levels of energy efficiency in new homes as a means to meet the State energy code.</p> <p>Intervened with local govts to ensure that the protections for baseline energy efficiency and a strong building envelope are included and maintained in their local ordinance.</p>	<p>CA Energy Commission “model local govt ordinance” impacted, and local govt ordinances adopted are impacted to protect energy efficiency from being traded off against solar/PV AND storage/battery.</p>
Energy efficiency	Support	<p>State Code Adoptions in FL, GA, NC, VA, OR: Worked through trade associations, NGOs, and directly to impact the energy codes being drafted in these states and other. In GA, NC and VA home builder efforts to hold on to the current codes was very strong and they have the political clout to impact outcomes.</p>	<p>Progress on State energy codes in these States was thwarted by the home building industry, particularly in GA and NC and partially in VA. In FL we prevented a back-slide but in OR we made progress and countered the builders.</p>

Energy efficiency	Support	<p>State Housing Finance Agencies and Qualified Allocation Plans (QAPs) for Affordable Housing and Low Income Housing Tax Credit (LIHTC): This sector is the most ripe for acceptance of above code requirements, green, and sustainability features. Working with the Nat'l Assn of State Energy Officials, Natl Council of State Legislators, lending institutions/banks in this space, and various housing affordability orgs we have moved over 30 States to include Passive House as a "sweetener" or option for private developers bidding on these State/local Govt projects. OC has formed and adhoc Working Group on Passive House in LIHTC/Affordable Housing to mainstream efforts. Further, OC has pushed to add other attributes or measures to the sweetener list that developers can choose from. Where we can we bake these into the mandatory, rather than voluntary options. These include products with EPDs, offset manufacturing with certified renewable energy, Asthma and Allergy Friendly and other certifications and attributes. Owens Corning organized and facilitates an ad hoc group promoting Passive House in policy, regulation, codes, and voluntary programs.</p>	<p>Various State regulatory and legislative vehicles are used to drive this depending on the opportunity. We always partner with local State-based affordable housing groups, environmental/climate groups, and green building advocates. The primary vehicle used in the States Affordable Housing QAP. Further we monitor federal activities impacting this space but the real impacts have and remain in the States.</p>
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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

NAIMA (North American Insulation Manufacturers Association)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

NAIMA works closely with worldwide manufacturers of fiber glass, rock wool and slag wool insulation products and other allied organizations to advance sustainable development through activities that promote the following as they relate to insulation: 1. Pollution reduction through increased insulation 2. Energy efficiency awareness 3. Natural resource preservation. NAIMA, along with other international organizations, unite to inform government agencies, environmental building organizations, manufacturing companies, consumers and academia around the globe about the role insulation plays in energy efficient construction, the reduction of greenhouse gas emissions and mitigating climate change.

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

We are active on the board and committees to further these goals

Trade association

ACMA (American Composites Manufacturers Association)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

ACMA has supported efforts to improve resilience of our nation's energy grid, surface transportation and water infrastructure through the promotion of fiber-reinforced polymer composites and advanced materials. The association and its member companies have advocated for the benefits of composites, such as corrosion resistance, ease of installation, extreme weather resilience and superior service life.

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

We are active on the board and committees to further these goals

Trade association

BRT (Business Round table)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

"The Business Roundtable is an association of CEOs of America's leading companies working to promote a thriving U.S. economy and expand opportunity for all Americans through sound public policy." BRT "supports an open and constructive dialogue about the principles that should shape climate policy and the pros and cons of various options." Currently, the membership agrees on the following:

- Voluntary public reporting of emissions reductions progress by industry;
- Improved use of energy efficiency;
- Development and deployment of low GHG technologies;
- Increasing RD&D investment;
- Investing in climate science; and,
- Adopting global solutions to a global problem.

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

We are active on the committees to further these goals.

Trade association

XPSA (The Extruded Polystyrene Foam Association)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

"The Extruded Polystyrene Foam Association (XPSA) is a trade association representing manufacturers of Extruded Polystyrene Foam (XPS) insulation products and the industry's raw material suppliers." XPSA has expressed a commitment to "complying with international and U.S. regulations" developed to address the issue of climate change. The association's members "continuously develop technologies that take into consideration climate change, sustainability, quality, and safety."

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

We are active on the board and committees to further these goals

C12.3d

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

No

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?

Our climate policy is stated on our sustainability website and is clearly in favor of reducing energy use and greenhouse gas emissions. Our policy work and engagement with trade groups is focused on these same goals, to facilitate the ease of consumers and industry professionals to employ energy efficiency and renewable energy practices in conjunction with Owens Corning or using Owens Corning's expertise and products. In addition, "engaging our impact through sustainability" is a company value. The Owens Corning company values underpin our company operations, and all decisions are made through the lens of our corporate values, including sustainability. From the standpoint of engaging with policy makers, our Government Affairs team controls all aspects of our communications and ensures that these activities are completely aligned with our climate policy. We regularly review language and activities with both external affairs and sustainability and conduct legal reviews of all external communications including letters, testimony and activities with outside advocates or NGOs.

C12.4

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

Publication

In mainstream reports

Status

Complete

Attach the document

 2018 10K Filed 2019-02.pdf

Page/Section reference

Environmental Control - Emission Targets and other metrics are mentioned on PDF page 6

Risks & Opportunities - Page 8-15 Talk about risk factors for our business. Among the Climate change related factors are weather/storms, wind energy, environmental

Strategy - Page 4-6 discuss our strategy focused on products that conserve energy and make products lighter, stronger, and more durable.

Content elements

Governance
Strategy
Risks & opportunities
Emission targets
Other metrics

Comment

Annual 10-K Filing

Publication

In mainstream reports

Status

Complete

Attach the document

 2019-Proxy-Statement.pdf

Page/Section reference

Page 6 - The Commitment to Building a Sustainable Enterprise.

Page 8 - World-Class Sustainability: Increasing Handprint; Reducing its Footprint

Page 10 -60 - Corporate Governance

Content elements

Governance
Strategy
Emission targets
Other metrics

Comment

Annual Proxy Filing

Publication

In voluntary sustainability report

Status

Complete

Attach the document

 2018-Owens-Corning-Sustainability-Report.pdf

Page/Section reference

The whole report relates to Climate Change and GHG. Some specific sections include:
Governance - P 157
Climate Change and associated Strategy, risks, and opportunities - P. 110

Risks and Information on emissions figures and targets are listed throughout each individual environmental aspect chapter and in the appendices.

Content elements

- Governance
- Strategy
- Risks & opportunities
- Emissions figures
- Emission targets
- Other metrics

Comment

C14. 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.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

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