Welcome to your CDP Climate Change Questionnaire 2019

C0. Introduction

C0.1

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

Eastman is a global specialty materials company that produces a broad range of products found in items people use every day. With the purpose of enhancing life in a material way, Eastman works with customers to deliver innovative products and solutions while maintaining a commitment to safety and sustainability. The company’s innovation-driven growth model takes advantage of world-class technology platforms deep customer engagement, and differentiated application development to grow its leading positions in attractive end-markets such as transportation, building and construction, and consumables. As a globally inclusive and diverse company, Eastman employs approximately 14,500 people around the world and serves customers in more than 100 countries. The company had 2018 revenues of approximately $10 billion and is headquartered in Kingsport, Tennessee, U.S.A.

C0.2

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

<table>
<thead>
<tr>
<th>Start date</th>
<th>End date</th>
<th>Indicate if you are providing emissions data for past reporting years</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1, 2018</td>
<td>December 31, 2018</td>
<td></td>
</tr>
</tbody>
</table>

C0.3

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

Belgium
Brazil
China
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.

Financial control

C-CH0.7

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

Row 1

Bulk organic chemicals
Lower Olefins (cracking)
Methanol
Polymers

**Bulk inorganic chemicals**

**Other chemicals**
- Specialty chemicals
- Specialty organic chemicals

**C1. Governance**

**C1.1**

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

Yes

**C1.1a**

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

<table>
<thead>
<tr>
<th>Position of individual(s)</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director on board</td>
<td>The Health, Safety, Environment and Security (HSES) Committee of the Board has oversight for environmental performance, including climate-related issues. The HSES Committee is led by a designated Director and includes every member of the Board. The HSES Committee routinely receives updates and presentations on climate risks and issues. In addition, Eastman’s Board of Directors Audit Committee has responsibility for Eastman’s Enterprise Risk Management (ERM) process which includes management of all risks, including climate-related risks. Eastman personnel assess climate-related issues/risks in conjunction with the Task Force on Climate-</td>
</tr>
</tbody>
</table>
related Financial Disclosures (TCFD) framework and elevate those as appropriate for consideration as part of our Enterprise Risk Management (ERM) process. The Audit Committee of the Eastman Board is also comprised of the independent, non-employee directors.

C1.1b

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

<table>
<thead>
<tr>
<th>Frequency with which climate-related issues are a scheduled agenda item</th>
<th>Governance mechanisms into which climate-related issues are integrated</th>
<th>Please explain</th>
</tr>
</thead>
</table>
| Scheduled – some meetings | Reviewing and guiding strategy  
Reviewing and guiding major plans of action  
Reviewing and guiding risk management policies  
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 | • Full Board reviews and guides strategy  
• Full Board reviews and guides major plans of action  
• Audit Committee of the BOD reviews and guides risk management policies  
• Full Board sets performance objectives  
• Finance Committee of the BOD oversees major capital expenditures, acquisitions, and divestitures  
• Health, Safety, Environment & Security Committee and other committees as appropriate monitor and oversee progress against goals and targets for addressing climate-related issues. |

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.
<table>
<thead>
<tr>
<th>Name of the position(s) and/or committee(s)</th>
<th>Responsibility</th>
<th>Frequency of reporting to the board on climate-related issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Sustainability Officer (CSO)</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>Quarterly</td>
</tr>
</tbody>
</table>

**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).

Eastman’s Chief Sustainability Officer is a member of the Executive Team and reports directly to the CEO. Eastman’s CSO leads the company’s Sustainability Council and the supporting sustainability sub-councils represent diverse functions including public policy and emerging issues, energy management, product stewardship, sustainability, innovation and life cycle analysis, legislative and regulatory advocacy, law, marketing and public communications. These corporate functions are directly aligned with the manufacturing assets through the Company’s utility operations, business organizations, regional Health, Safety, Environment and Security (HSES) staff and product stewards. The Team captures insights from these diverse functions that lead to an improved cross-functional understanding of the risks associated with emerging issues including climate-related issues. In addition, the Global Public Affairs organization tracks and manages issues and perspectives external to the company. Under the direction of Eastman’s CSO, an Environment, Social, Governance (ESG) Council, the Sustainability Council and functional organizations including Global Public Affairs, Sustainability, HSES, Product Stewardship and the Law Department work to monitor and assess climate-related issues consistent with the Task Force on Climate-related Financial Disclosures (TCFD) framework. That framework established two broad categories of risks and several specific types of risk within those categories. The Physical Risks category includes Acute and Chronic risks and the Transition Risks category denotes the transition to a lower carbon economy and includes risks in the areas of Policy/Legal, Technology, Market and Reputation. Eastman personnel then map the specific climate-related risks identified from that assessment against the TCFD framework to nineteen existing risk categories which are included in Eastman’s ERM process.

**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).

<table>
<thead>
<tr>
<th>Who is entitled to benefit from these incentives?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Executive Officer (CEO)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Types of incentives</th>
<th>Activity incentivized</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monetary reward</td>
<td>Emissions reduction target</td>
<td>Variable pay included in individual performance commitments with actual performance assessed in determination of annual cash.</td>
</tr>
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<tr>
<td>Monetary reward</td>
<td>Energy reduction target</td>
<td>Variable pay included in individual performance commitments with actual performance assessed in determination of annual cash.</td>
</tr>
</tbody>
</table>
Who is entitled to benefit from these incentives?
Chief Sustainability Officer (CSO)

Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
Variable pay included in individual performance commitments with actual performance assessed in determination of annual cash.

Who is entitled to benefit from these incentives?
Chief Sustainability Officer (CSO)

Types of incentives
Monetary reward

Activity incentivized
Energy reduction target

Comment
Variable pay included in individual performance commitments with actual performance assessed in determination of annual cash.

Who is entitled to benefit from these incentives?
Other C-Suite Officer
Types of incentives
Monetary reward

Activity incentivized
Emissions reduction target

Comment
Variable pay included in individual performance commitments with actual performance assessed in determination of annual cash.

Who is entitled to benefit from these incentives?
Other C-Suite Officer

Types of incentives
Monetary reward

Activity incentivized
Energy reduction target

Comment
Variable pay included in individual performance commitments with actual performance assessed in determination of annual cash.

Who is entitled to benefit from these incentives?
All employees

Types of incentives
Monetary reward

Activity incentivized
Energy reduction project
Comment
Awards up to $1000 for playing key roles in achieving beneficial projects, including energy efficiency, were given in the last year. Managers have discretion to use Eastman Team Recognition (ETR) cash awards to provide immediate reinforcement for energy efficiency improvements.

Who is entitled to benefit from these incentives?
All employees

Types of incentives
Monetary reward

Activity incentivized
Energy reduction target

Comment
Awards up to $1000 for playing key roles in achieving beneficial projects, including energy efficiency, were given in the last year. Managers have discretion to use Eastman Team Recognition (ETR) cash awards to provide immediate reinforcement for energy efficiency improvements.

Who is entitled to benefit from these incentives?
All employees

Types of incentives
Monetary reward

Activity incentivized
Efficiency project

Comment
Awards up to $1000 for playing key roles in achieving beneficial projects, including energy efficiency, were given in the last year. Managers have discretion to use Eastman Team Recognition (ETR) cash awards to provide immediate reinforcement for energy efficiency improvements.
Who is entitled to benefit from these incentives?
All employees

Types of incentives
Monetary reward

Activity incentivized
Efficiency target

Comment
Awards up to $1000 for playing key roles in achieving beneficial projects, including energy efficiency, were given in the last year. Managers have discretion to use Eastman Team Recognition (ETR) cash awards to provide immediate reinforcement for energy efficiency improvements.

C2. Risks and opportunities

C2.1

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

<table>
<thead>
<tr>
<th></th>
<th>From (years)</th>
<th>To (years)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term</td>
<td>0</td>
<td>3</td>
<td>Used for business planning and risk evaluation</td>
</tr>
<tr>
<td>Medium-term</td>
<td>3</td>
<td>5</td>
<td>Applicable to strategy development</td>
</tr>
<tr>
<td>Long-term</td>
<td>15</td>
<td>30</td>
<td>Capital projects are typically evaluated for a 15-year asset life</td>
</tr>
</tbody>
</table>

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.
C2.2a

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

<table>
<thead>
<tr>
<th>Frequency of monitoring</th>
<th>How far into the future are risks considered?</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1</td>
<td>Six-monthly or more frequently</td>
<td>3 to 6 years</td>
</tr>
</tbody>
</table>

Eastman’s process for identifying and assessing the risks and opportunities associated with climate change is coordinated by a working team with guidance from the Executive Team and oversight by the Board of Directors. Eastman assesses climate-related risks in conjunction with the TCFD framework. The Environmental, Social and Governance (ESG) Council is facilitated by the Public Policy and Emerging Issues Director. This council along with the Sustainability Council assesses emerging issues, including climate change, and works to identify strategies that can mitigate the risks and seize the opportunities across multiple functions at the company.

C2.2b

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

Significant risks and opportunities, including climate-related risks, are evaluated in Eastman’s Enterprise Risk Management (ERM) process. A critical element of our climate strategy involves a process to identify, assess and manage climate-related risks. Eastman identifies climate-related risks through its broader emerging issues process which monitors various key external sources. Eastman is assessing climate-related risks in conjunction with the Task Force on Climate-related Financial Disclosures (TCFD) framework. That framework established two broad categories of risks and several specific types of risk within those categories. The Physical Risks category includes Acute and Chronic risks and the Transition Risks category denotes the transition to a lower carbon economy and includes risks in the areas of Policy/Legal, Technology, Market and Reputation. Eastman personnel map the specific climate-related risks identified from the assessment against the TCFD framework to twenty existing risks categories which
are included in Eastman’s ERM process. This mapping step allows us to perform an initial gap analysis to determine if the specific climate-related risks are already accounted for within the existing risks. Following this initial determination, we can adjust the ERM process to address gaps as needed. This provides for a more robust consideration of specific climate-related risks and development of related mitigation plans to address them. Cross-functional working teams are involved in executing on identified mitigation plans.

Additionally, Eastman has developed an internal tool, Natural Hazard and Weather Risk Tool, to assess short to mid-long term (0-10+ year) risks, including water and climate change. This tool has been piloted with several Eastman sites in Europe. Significant risks and impacts identified during the pilot are now being addressed and broader distribution and use is anticipated in the next year.

Building on the pilot, Eastman is positioning to conduct scenario planning for the long-term horizons (20+ years) by leveraging our existing partnership with scientist at the Woods Hole Oceanographic Institution (WHOI), the world’s leading, independent, non-profit organization dedicated to ocean research, exploration and higher education; working to tackle three main challenges -- the ocean in the climate system, the hydrological cycle, and carbon dioxide and the climate. While forward-looking climate scenarios exist, many examine future weather and climate extremes trends at the regional and global scales—not framed to adequately support company-level decision making. Eastman recently commissioned scientist at WHOI to conduct research to deliver Eastman scientifically based insights into longer-term climate projections (20+ years) for high risk sites and locations.

C2.2c

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

<table>
<thead>
<tr>
<th>Relevance &amp; inclusion</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current regulation</strong></td>
<td>Processes in place in Global Public Affairs, Global Health, Safety, Environment, and Security and Global Product Stewardship to track regulations. Consideration in Enterprise Risk Management (ERM) process.</td>
</tr>
<tr>
<td><strong>Emerging regulation</strong></td>
<td>Processes in place in Global Public Affairs, Global Health, Safety, Environment, and Security and Global Product Stewardship to track regulations. Emerging regulations are considered in our Enterprise Risk Management (ERM) process to determine which ones will be impactful.</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Technology Organization evaluates emerging technologies and existing technologies with regard to climate risk. Evaluations are conducted to determine potential opportunities for energy reductions and emission reductions. Opportunities to enhance product attributes to address climate risk are evaluated. Consideration in Enterprise Risk Management (ERM) process.</td>
</tr>
</tbody>
</table>
### Legal
Relevant, always included
Processes in place in the Law Department to evaluate climate risk for operations and businesses. Consideration in Enterprise Risk Management (ERM) process.

### Market
Relevant, sometimes included
Through addressable market maps and business strategy. Consideration in Enterprise Risk Management (ERM) process.

### Reputation
Relevant, sometimes included
Considered in light of negative publicity, potential deselection and impact on communities, recruitment, and retention. Corporate Responsibility focus on Environment, Education, Economic Development and Empowerment also addresses consideration in this area.

### Acute physical
Relevant, always included
Crisis management plans and business continuity plans in place. Consideration in Enterprise Risk Management (ERM) process.

### Chronic physical
Relevant, sometimes included
Crisis management plans and business continuity plans in place. Consideration in Enterprise Risk Management (ERM) process.

### Upstream
Relevant, sometimes included
Procurement evaluation of potential risks. Consideration in Enterprise Risk Management (ERM) process.

### Downstream
Relevant, sometimes included
Business evaluation of potential risks. Consideration in Enterprise Risk Management (ERM) process.

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**C2.2d**

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

Significant risks and opportunities, including climate-related risks, are evaluated in Eastman's Enterprise Risk Management (ERM) process which is conducted under the auspices of the Audit Committee of the Board of Directors. A critical element of our climate strategy involves a process to identify, assess and manage climate-related risks. Eastman is assessing climate-related risks in conjunction with the Task Force on Climate-related Financial...
Disclosures (TCFD) framework. That framework established two broad categories of risks and several specific types of risk within those categories. The Physical Risks category includes Acute and Chronic risks and the Transition Risks category denotes the transition to a lower carbon economy and includes risks in the areas of Policy/Legal, Technology, Market and Reputation. Eastman personnel map the specific climate-related risks identified from the assessment against the TCFD framework to twenty existing risks categories which are included in Eastman’s ERM process. This mapping step allows us to perform an initial gap analysis to determine if the specific climate-related risks are already accounted for within the existing risks. Following this initial determination, we can adjust the ERM process to address gaps as needed. This provides for a more robust consideration of specific climate-related risks and development of related mitigation plans to address them. The Audit Committee of the Board of Directors has oversight responsibility for the plans. Cross-functional working teams are involved in executing on identified mitigation plans.

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?

No

C2.3b

(C2.3b) Why do you not consider your organization to be exposed to climate-related risks with the potential to have a substantive financial or strategic impact on your business?

<table>
<thead>
<tr>
<th>Primary reason</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risks exist, but none with potential to have a substantive financial or strategic impact on business</td>
<td>Eastman defines a substantive impact as one that would be ‘material’ information as defined by applicable law and thus requiring public disclosure to investors.</td>
</tr>
</tbody>
</table>

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?

No
C2.4b

(C2.4b) Why do you not consider your organization to have climate-related opportunities?

<table>
<thead>
<tr>
<th>Primary reason</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunities exist, but none with potential to have a substantive financial or strategic impact on business</td>
<td>Eastman defines a substantive impact as one that would be ‘material’ information as defined by applicable law and thus requiring public disclosure to investors.</td>
</tr>
</tbody>
</table>

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?

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

C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b

(C-AC3.1b/C-CE3.1b/C-CH3.1b/C-CO3.1b/C-EU3.1b/C-FB3.1b/C-MM3.1b/C-OG3.1b/C-PF3.1b/C-ST3.1b/C-TO3.1b/C-TS3.1b) Indicate whether your organization has developed a low-carbon transition plan to support the long-term business strategy.

In development, we plan to complete it within the next 2 years
(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

Eastman’s business objectives and strategy are driven by our purpose to “enhance the quality of life in a material way”. As we work to fulfill our purpose at Eastman, we strive to grow our positive impact by creating value in all that we do. We know we must create far more value than the resources we use or the future is not sustainable. Climate-related issues are a key component and are integrated into our approach to sustainability. As we address growing demands, we focus on driving resource productivity through improved processes that protect the environment in the communities where we operate, as well as understanding the impact of our products. We help our customers and their customers do the same thing. We strive for continual improvement to manage our resources responsibly including increasing energy efficiency and reducing greenhouse gas emissions. Innovation steers a sustainable portfolio that brings solutions to significant, global issues including climate change. Eastman's strategy is supported by five principles: (1) Relentlessly engaging the market, becoming an essential part of customers’ success; (2) Embracing and converting market complexity into value; (3) Leveraging world-class technology platforms into advantaged application platform; (4) Safely and relentlessly driving productivity; and (5) Inspiring talented people to innovate and drive growth. Climate-related issues are integrated into these principles and businesses, operations, and functions apply them to their objectives and strategy. Eastman's business strategy clearly reflects an emphasis on climate, including energy reduction. Eastman's energy program is a corporate program with broad participation and executive-level support that uses ENERGY STAR® resources, corporate initiatives, and designated funding to improve energy efficiency. Energy efficiency is a key part of achieving sustainability goals, such as a 20% reduction in greenhouse gas (GHG) emissions. In 2013, Eastman announced plans to convert boilers at its manufacturing sites in Kingsport, Tennessee, and Springfield, Massachusetts, from coal to natural gas. The conversion of these boilers positions Eastman to achieve significant reductions in GHG and other emissions. Completed in 2018, this project allows Eastman to meet its 2020 goal of a 20% reduction in GHG emissions. Natural resource efficiency and greenhouse gas reduction have also driven several recent product development efforts including the following:

- Eastman BioExtend™ 30 and BioExtend™ 30 HP antioxidant solutions were developed and are marketed to extend the shelf life of biodiesel and slow down the oxidation process.
- Saflex® PVB interlayers, an advanced interlayer technology for laminated glass that brings safety, security, acoustic, UV screening and reduction in summer solar heat gain to automotive and architectural glazing.
- Eastman Impera ™ performance resins help optimize wet grip and rolling resistance for tires while meeting regulatory compliance with emerging labelling and performance requirements.
- Eastman Tetrashield™ protective resin systems enable higher-solid coatings while maintaining excellent application parameters. This allows for more efficient film build, faster film drying, and ultimately a more efficient coating process.
Eastman Avra™ performance fibers are enabled by a proprietary spinning technology that delivers exceptional moisture management — drying up to 50% faster than conventional polyester fabrics.

C3.1g
(C3.1g) Why does your organization not use climate-related scenario analysis to inform your business strategy?

Eastman is evaluating and generally supportive of the framework proposed by the Task Force for Climate-related Financial Disclosures (TCFD). Currently, the evaluation of the methodology and resources necessary to conduct a scenario analysis has been qualitative in nature. Eastman anticipates that implementation of the framework will be incremental, and the initial focus will be on capital expenditures.

C4. Targets and performance

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

Intensity target

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

<table>
<thead>
<tr>
<th>Target reference number</th>
<th>Scope 1+2 (location-based)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Int 1</td>
<td></td>
</tr>
</tbody>
</table>

Scope

Scope 1+2 (location-based)
% emissions in Scope
100

Targeted % reduction from base year
20

Metric
Metric tons CO2e per metric ton of product

Base year
2008

Start year
2008

Normalized base year emissions covered by target (metric tons CO2e)
0.99

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
100

Target status
Achieved

Please explain
When submitting to CDP, Scope 1 boundary includes manufacturing sites where Eastman has controlling interest. Emissions included are emissions associated with generation of steam and electricity, feedstock emissions and fuel produced on-site. For CDP reporting purposes, the
sales of electricity and steam across the reporting boundary are considered as part of the reporting boundary and are not deducted from the total Scope 1 emissions. These sales are included in our GHG intensity data that is available on our website. A 9% decrease in absolute Scope 1-2 emissions has been achieved through year end 2018. This 9% decrease in absolute emissions is calculated including the steam and electricity sales across our boundary to other entities that use the energy. This 9% decrease in emissions has been achieved while increasing production by 12%. However, per CDP guidance that the sales to other entities be excluded, the adjusted reduction in Scope 1 and 2 emissions is 2.7%. The boundary of the Scope 1 and Scope 2 emissions are manufacturing sites where we have controlling interest and also includes the campus headquarters emissions.

% change anticipated in absolute Scope 1+2 emissions

2.7

% 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.

<table>
<thead>
<tr>
<th>Target</th>
<th>Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPI – Metric numerator</td>
<td>Hazardous Waste</td>
</tr>
<tr>
<td>KPI – Metric denominator (intensity targets only)</td>
<td>Production</td>
</tr>
<tr>
<td>Base year</td>
<td>2010</td>
</tr>
</tbody>
</table>
Start year
2010

Target year
2020

KPI in baseline year
0.0067

KPI in target year
0.0057

% achieved in reporting year

Target Status

Please explain
Eastman set a goal to reduce hazardous waste intensity by 15% by 2020 compared to a baseline year of 2010.

Part of emissions target
No, this is a separate goal.

Is this target part of an overarching initiative?
Other, please specify
Part of sustainability landscape goals.

Target
Other, please specify
TRI
KPI – Metric numerator
TRI emissions

KPI – Metric denominator (intensity targets only)

Base year
2010

Start year
2010

Target year
2020

KPI in baseline year
7,740,000

KPI in target year
5,800,000

% achieved in reporting year

Target Status

Please explain
Eastman set a goal to reduce Toxic Release Inventory Emissions as defined by the Environmental Protection Agency by 25% by 2020 compared to a baseline year of 2010.

Part of emissions target
No, this is a separate goal.
Is this target part of an overarching initiative?
Other, please specify
Part of sustainability landscape goals.

Target
Other, please specify
Volatile Organic Compounds

KPI – Metric numerator
Volatile Organic Compounds

KPI – Metric denominator (intensity targets only)

Base year
2010

Start year
2010

Target year
2020

KPI in baseline year
8,194

KPI in target year
6,965

% achieved in reporting year
Target Status

Please explain
Eastman set a goal to reduce Volatile Organic Compounds by 15% by 2020 compared to a baseline year of 2010.

Part of emissions target
No, this is a separate goal.

Is this target part of an overarching initiative?
Other, please specify
Part of sustainability landscape goals.

Target
Other, please specify
Nitrogen Oxides

KPI – Metric numerator
Nitrogen Oxides

KPI – Metric denominator (intensity targets only)

Base year
2010

Start year
2010

Target year
2020
KPI in baseline year
    11,034

KPI in target year
    8,827

% achieved in reporting year

Target Status

Please explain
    Eastman set a goal to reduce Nitrogen Oxides by 20% by 2020 compared to a baseline year of 2010.

Part of emissions target
    No, this is a separate goal.

Is this target part of an overarching initiative?
    Other, please specify
        Part of sustainability landscape goals.

Target
    Other, please specify
        Sulfur Dioxide

KPI – Metric numerator
    Sulfur Dioxide

KPI – Metric denominator (intensity targets only)
Base year
2010

Start year
2010

Target year
2020

KPI in baseline year
22,925

KPI in target year
13,755

% achieved in reporting year

Target Status

Please explain
Eastman set a goal to reduce Sulfur Dioxide by 40% by 2020 compared to a baseline year of 2010.

Part of emissions target
No, this is a separate goal.

Is this target part of an overarching initiative?
Other, please specify
Part of sustainability landscape goals.
Target
Other, please specify
Reportable Releases

KPI – Metric numerator
Reportable Releases

KPI – Metric denominator (intensity targets only)

<table>
<thead>
<tr>
<th>Metric</th>
<th>Base year</th>
<th>Start year</th>
<th>Target year</th>
<th>KPI in baseline year</th>
<th>KPI in target year</th>
<th>% achieved in reporting year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010</td>
<td>2010</td>
<td>2020</td>
<td>61</td>
<td>45</td>
<td></td>
</tr>
</tbody>
</table>

Target Status

Please explain
Eastman set a goal to reduce Reportable Releases by 25% by 2020 compared to a baseline year of 2010.
Part of emissions target
No, this is a separate goal.

Is this target part of an overarching initiative?
Other, please specify
Part of sustainability landscape goals.

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.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Number of initiatives</th>
<th>Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under investigation</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>To be implemented*</td>
<td>7</td>
<td>15,700</td>
</tr>
<tr>
<td>Implementation commenced*</td>
<td>13</td>
<td>5,900</td>
</tr>
<tr>
<td>Implemented*</td>
<td>89</td>
<td>80,000</td>
</tr>
<tr>
<td>Not to be implemented</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

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)**
5,000

**Scope**
Scope 1

**Voluntary/Mandatory**
Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**
900,000

**Investment required (unit currency – as specified in C0.4)**
1,900,000

**Payback period**
4 - 10 years

**Estimated lifetime of the initiative**
6-10 years

**Comment**
**Initiative type**
Energy efficiency: Building services

**Description of initiative**
HVAC

**Estimated annual CO2e savings (metric tonnes CO2e)**
1,600

**Scope**
Scope 2 (location-based)

**Voluntary/Mandatory**
Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**
150,000

**Investment required (unit currency – as specified in C0.4)**
500,000

**Payback period**
4 - 10 years

**Estimated lifetime of the initiative**
11-15 years

**Comment**
Energy efficiency: Processes

**Description of initiative**
Process optimization

**Estimated annual CO2e savings (metric tonnes CO2e)**
70,000

**Scope**
Scope 1

**Voluntary/Mandatory**
Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**
1,000,000

**Investment required (unit currency – as specified in C0.4)**
1,500,000

**Payback period**
1-3 years

**Estimated lifetime of the initiative**
11-15 years

**Comment**

*C4.3c*

(C4.3c) What methods do you use to drive investment in emissions reduction activities?
<table>
<thead>
<tr>
<th>Method</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedicated budget for energy efficiency</td>
<td>Eastman’s capital energy budget continues to be supported by upper management and remained at $8 million for 2018. In addition, a $2.5 million expense budget was allocated to improve energy efficiency primarily through steam leak repair and adding/replacing insulation. Eastman’s business strategy clearly reflects an emphasis on energy reduction. Since 2008, Eastman has improved energy intensity by approximately 11%.</td>
</tr>
<tr>
<td>Employee engagement</td>
<td>To guide and direct corporate-wide energy efforts, an annual energy communications plan is developed and continually updated. To build support in energy management at all levels, the Energy Team uses awareness campaigns. Eastman promoted employee engagement in energy through newsletters and videos sharing information on how employees can be more energy efficient both at work and at home. Investing in training included using outside experts to perform training on steam systems as well as expanding the internal online energy awareness training and developing a tip sheet for operators on water conservation.</td>
</tr>
<tr>
<td>Internal incentives/recognition programs</td>
<td>To motivate employees, recognition programs are used along with team celebrations and verbal and written reinforcement. Employees are motivated to contribute to company energy efficiency goals through a variety of venues including recognition for achievements in the company newsletter, individual awards, team celebrations, notes of reinforcement and nominal prizes for participation. Performance commitments of all personnel include goals and objectives for each year, and performance against these goals is a factor in determining compensation. Site energy champions are given MMBTU reduction goals for their site and these goals become part of their performance commitment. These goals help Eastman achieve GHG reduction targets.</td>
</tr>
<tr>
<td>Compliance with regulatory requirements/standards</td>
<td>Current regulatory requirements reinforce fuel conversion that results in lower GHG. Eastman is subject to emissions trading schemes in Europe and Korea, alongside additional legal compliance in Europe on energy efficiency.</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Level of aggregation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company-wide</td>
</tr>
</tbody>
</table>

**Description of product/Group of products**

Alternative Methods of Supply – Several large global capacity oxo and acetyl derivatives.

**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**

Addressing the Avoided Emissions Challenge- Chemicals sector

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

**Comment**

Calculated avoided emissions for Eastman’s use of bilateral agreements to reduce logistical emissions associated with fulfilling international contracts. The reduction represented approximately 5% of the total cradle-to-customer carbon emissions for products sold using bilateral agreements.

<table>
<thead>
<tr>
<th>Level of aggregation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
</tr>
</tbody>
</table>

---
Description of product/Group of products
TEA Ester Quats

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
Addressing the Avoided Emissions Challenge- Chemicals sector

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

Comment
Calculated avoided emissions for Eastman’s use of enzyme catalyzed esterification. The reduction represented approximately 5% or greater of the total cradle-to-gate carbon emissions for the product.

Level of aggregation
Group of products

Description of product/Group of products
Performance films for automotive and architectural interlayers

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
Avoided emissions through LCA methods

% revenue from low carbon product(s) in the reporting year
Comment
This class of products has been assessed by Harmony Environmental and through internal studies to assess the avoided emissions of both automotive and architectural interlayers.
While these studies do calculate avoided emissions for this class or product, they predate the “Addressing the Avoided Emissions Challenge” methodology and are instead comparative LCAs for various window systems. For architectural interlayers for example, heat-mirror insulate glass was the proposed solution and triple pane insulated glass was the comparative solution.

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, 2008

Base year end
December 31, 2008

Base year emissions (metric tons CO2e)
6,096,235

Comment
Eastman routinely normalizes baseline year data by removing sites divested since 2008 and including sites that were acquired after baseline year. Baseline year change due to associated GHG emissions of sales of steam being added to normalized data for the purposes of reporting to CDP. Eastman generates steam but does not consume all the steam produced, some of the steam is sold to third parties.

Scope 2 (location-based)
**Base year start**
   January 1, 2008

**Base year end**
   December 31, 2008

**Base year emissions (metric tons CO2e)**
   1,719,451

**Comment**

---

**Scope 2 (market-based)**

**Base year start**

**Base year end**

**Base year emissions (metric tons CO2e)**

**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.

C6. Emissions data

C6.1

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

<table>
<thead>
<tr>
<th>Reporting year</th>
<th>Gross global Scope 1 emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5,820,940</td>
</tr>
</tbody>
</table>

Start date: January 1, 2018
End date: December 31, 2018

Comment:
When submitting to CDP we do not include sales of steam and electricity that we generate and sell across our boundary but we do include feedstock emissions where readily available. These sales are included in our GHG intensity data that is available on our website. The 9% change in absolute Scope 1-2 emissions has been achieved through year end 2018. The 9% decrease in absolute emissions is calculated using the steam and electricity sales across our boundary to other entities that use the energy. The 2.7% decrease in absolute emissions is calculated and reported in CDP without the sales to other entities as directed by CDP guidance. The boundary of our Scope 1 and Scope 2 emissions are manufacturing sites where we have controlling interest.

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 have no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure.

**Comment**  
Eastman reports a location-based Scope 2 emissions. Scope 2 emissions are provided by the locations using standard emissions factors except as noted for fuel produced on-site.

---

**C6.3**

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

**Reporting year**

<table>
<thead>
<tr>
<th>Scope 2, location-based</th>
<th>1,606,800</th>
</tr>
</thead>
</table>

**Start date**

January 1, 2018

**End date**

December 31, 2018

**Comment**

Major shutdowns resulted in a shift in a facility-wide energy balance with more purchased energy and less produced energy compared to previous years.
C6.4

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

Yes

C6.4a

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

Source

Eastman’s boundary is manufacturing sites where we have controlling interest. Non-manufacturing site such as sales offices and technical centers are excluded but would represent less than 1% of total emissions. The Headquarters campus, which includes non-manufacturing buildings, is included.

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

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

Explain why this source is excluded

The Scope 2 emissions from non-manufacturing offices are not significant sources of emissions. The Headquarters campus, which includes non-manufacturing buildings, is included.
C6.5

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

Purchased goods and services

<table>
<thead>
<tr>
<th>Evaluation status</th>
<th>Relevant, calculated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric tonnes CO2e</td>
<td>8,798,850</td>
</tr>
</tbody>
</table>

**Emissions calculation methodology**

Primary data for mass of raw materials purchased as chemical feedstocks were used. Cradle-to-purchase GHG emissions factors for 85% (by mass) of purchased raw materials were available, largely from the thinkstep GaBi 2018 LCI dataset. A small fraction of raw materials’ GHG emissions factors were derived from USLCI or supplier-specific datasets. GHGs emitted during generation of energy feedstocks (accounted for elsewhere in C6.5 Scope 3 emissions) were excluded. Cradle-to-purchase GHG emissions for 85% by mass of purchased raw materials were calculated and the result then scaled up to estimate GHG emissions of 100% of raw materials purchased.

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

90

**Explanation**

Primary data for the mass of raw materials purchased were available for 100% of raw materials. Secondary data for GHG emissions for 85% of mass of purchased raw materials were available. Change from 2017 re-categorization of some water and changes in reporting methodology represent the main sources for the decrease.

**Capital goods**

<table>
<thead>
<tr>
<th>Evaluation status</th>
<th>Not relevant, explanation provided</th>
</tr>
</thead>
</table>

Explanation
In order to evaluate the relevance of capital on Eastman’s total footprint, GHG emissions were estimated based on capital goods expenses for FY2015. The impact of the activity was estimated using Carnegie Mellon’s economic input/output (EIO) LCA tool (http://www.eiolca.net/cgi-bin/dft/use.pl). Because annual GHG emissions from purchased capital goods are estimated to be 200,000 tons of CO2, which is <5% of Eastman annual Scope 1, Scope 2 and Scope 3 emissions, it is reasonable to conclude that emissions from purchased capital goods are not relevant to this study.

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

Evaluation status
Relevant, calculated

Metric tonnes CO2e
209,263

Emissions calculation methodology
Primary data regarding the electricity and fuel use identified in the 2018 Scope 1 and 2 Eastman GHG emissions were used. For each fuel type and region, GHG emission factors were identified largely from the commercially available LCA database thinkstep GaBi 2018. GHGs emitted during generation of purchased electricity and already reported as Scope 2 emissions were subtracted.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Explanation
Primary data from purchasing were used to identify annual fuel and energy purchased. Secondary data from purchased thinkstep GaBi 2018 datasets were used to determine specific cradle-to-purchase GHG emission factors for each purchased fuel or energy feedstock. Decreases from 2017 are due to methodological reporting changes rather than representing actual decreases in scope 2 emission.

Upstream transportation and distribution

Evaluation status
Not relevant, explanation provided
**Explanation**

In a product life cycle analysis (LCA), when Eastman has included the impact of transportation, it has been the impact of shipping a product to a customer. In considering, the “cradle to gate” analysis, the carbon emissions are less than one percent, which also serves as a good indicator for measurement and is applicable to upstream transportation. Even though transportation emissions are not significant for Eastman, studies are still being conducted on reducing the impact.

**Waste generated in operations**

**Evaluation status**
Not relevant, explanation provided

**Explanation**
Insignificant compared to our global Scope 1 and Scope 2 CO2e emissions.

**Business travel**

**Evaluation status**
Not relevant, calculated

**Metric tonnes CO2e**
5,754

**Emissions calculation methodology**
Employee commercial air travel is collected by Eastman’s travel administrator. The emissions calculation is a product of the mileage of a segment (trip) multiplied by an emissions factor. The mileage of each trip segment is maintained in our database for all flights. The emission factors are set by DEFRA which is the United Kingdom’s Department for Environment, Food, & Rural Affairs. Additional information about the formulation and accounting methodology around these emissions factors can be found on the DEFRA website http://www.ukconversionfactorscarbonsmart.co.uk.

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
100
Explanation

Employee commuting

Evaluation status
Not relevant, calculated

Metric tonnes CO2e
15,983

Emissions calculation methodology
Employee commuting GHG emission estimates were calculated assuming US-average commuting statistics for all Eastman employees in North America and European average statistics for all other employees regardless of location. Eastman 2017 human resource employee data was used to identify the number of Eastman employees at the end of 2017. The 2009 National Household Travel Survey [1] was used to identify typical distance for commuting in the US. Because of the location of Eastman sites in North America, it was assumed that all North American employees commute using personal vehicles (automobiles, trucks, vans or SUVs) as opposed to public transportation. The ecoinvent v2 LCA model for transportation by passenger car was used to determine the GHG emission factor for commute via passenger car, automobile, truck, van or SUV per person-km per year. The ecoinvent v2 LCA regular bus, average train, and tram models were used to represent public transportation and to calculate annual GHG emissions per person-km. [1]. “Summary of Travel Trends: 2009 National Household Travel Survey.” US Department of Transportation, A. Santos, N. McGuckin, H.Y. Nakamoto, D. Gray, and S. Liss. http://nhts.ornl.gov/2009/pub/stt.pdf [2] “EU Transport in Figures: Statistical Pocketbook 2016.” European Commission 2016. https://ec.europa.eu/transport/sites/transport/files/pocketbook2016.pdf

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

Explanation

Upstream leased assets
**Evaluation status**
Not relevant, explanation provided

**Explanation**
Eastman has very few upstream leased assets, and emissions are extremely small in comparison to overall corporate evaluation and measurement.

**Downstream transportation and distribution**

**Evaluation status**
Not relevant, explanation provided

**Explanation**
As noted, transportation carbon emissions based on distribution is less than one percent of total emissions. This constitutes a very small percentage of the overall product impact and is also relatable to downstream transportation distribution.

**Processing of sold products**

**Evaluation status**
Relevant, not yet calculated

**Explanation**

**Use of sold products**

**Evaluation status**
Relevant, not yet calculated

**Explanation**

**End of life treatment of sold products**
**Evaluation status**

Relevant, not yet calculated

**Explanation**

**Downstream leased assets**

**Evaluation status**

Not relevant, explanation provided

**Explanation**

Eastman has very few downstream assets, such as warehouse space, and emissions are too small for measurement.

**Franchises**

**Evaluation status**

Not relevant, explanation provided

**Explanation**

Eastman has no franchise businesses or assets.

**Investments**

**Evaluation status**

Not evaluated

**Explanation**

**Other (upstream)**

**Evaluation status**
Not evaluated

Explanation

Other (downstream)

Evaluation status
Not evaluated

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
0.00073

Metric numerator (Gross global combined Scope 1 and 2 emissions)
7,427,750

Metric denominator
unit total revenue

Metric denominator: Unit total
10,151,000,000

Scope 2 figure used
Location-based

% change from previous year
9

Direction of change
Decreased

Reason for change
The metric provided is a standard total revenue intensity metric. The metric indicates a 9% decrease compared to the previous year. This is based on a revenue increase of 6% and an absolute emissions decrease of 2.7% compared to the previous year. The decrease in emissions is related to on-going emissions related activities as highlighted in this report.

C7. Emissions breakdowns

C7.1

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

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).
Greenhouse gas | Scope 1 emissions (metric tons of CO2e) | GWP Reference
---|---|---
CO2 | 5,740,260 | IPCC Fourth Assessment Report (AR4 - 100 year)
CH4 | 2,080 | IPCC Fourth Assessment Report (AR4 - 100 year)
N2O | 31,580 | IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs | 46,760 | IPCC Fourth Assessment Report (AR4 - 100 year)
PFCs | 260 | IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

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

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Scope 1 emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia Pacific (or JAPA)</td>
<td>75,100</td>
</tr>
<tr>
<td>Europe</td>
<td>178,870</td>
</tr>
<tr>
<td>Latin America (LATAM)</td>
<td>3,750</td>
</tr>
<tr>
<td>North America</td>
<td>5,563,220</td>
</tr>
</tbody>
</table>

C7.3

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

By facility

C7.3b

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

<table>
<thead>
<tr>
<th>Facility</th>
<th>Scope 1 emissions (metric tons CO2e)</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 1</td>
<td>54,580</td>
<td>33.65</td>
<td>-85.85</td>
</tr>
<tr>
<td>Facility</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
</tr>
<tr>
<td>----------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Facility 2</td>
<td>9,540</td>
<td>39.26</td>
<td>-76.09</td>
</tr>
<tr>
<td>Facility 3</td>
<td>110</td>
<td>51.15</td>
<td>14.02</td>
</tr>
<tr>
<td>Facility 4</td>
<td>14,510</td>
<td>36.73</td>
<td>-79.88</td>
</tr>
<tr>
<td>Facility 5</td>
<td>0</td>
<td>36.68</td>
<td>-76.92</td>
</tr>
<tr>
<td>Facility 6</td>
<td>14,720</td>
<td>51.1</td>
<td>3.72</td>
</tr>
<tr>
<td>Facility 7</td>
<td>0</td>
<td>51</td>
<td>3.72</td>
</tr>
<tr>
<td>Facility 8</td>
<td>0</td>
<td>31.82</td>
<td>117.23</td>
</tr>
<tr>
<td>Facility 9</td>
<td>89,320</td>
<td>42.1</td>
<td>-72.59</td>
</tr>
<tr>
<td>Facility 10</td>
<td>1,287</td>
<td>-23.16</td>
<td>-47.05</td>
</tr>
<tr>
<td>Facility 11</td>
<td>29,740</td>
<td>39.82</td>
<td>-76.84</td>
</tr>
<tr>
<td>Facility 12</td>
<td>1,570</td>
<td>35.97</td>
<td>140.64</td>
</tr>
<tr>
<td>Facility 13</td>
<td>5,930</td>
<td>59.4</td>
<td>27.28</td>
</tr>
<tr>
<td>Facility 14</td>
<td>29,960</td>
<td>3.71</td>
<td>103.22</td>
</tr>
<tr>
<td>Facility 15</td>
<td>10</td>
<td>3.81</td>
<td>103.22</td>
</tr>
<tr>
<td>Facility 16</td>
<td>640</td>
<td>51.32</td>
<td>12.02</td>
</tr>
<tr>
<td>Facility 17</td>
<td>0</td>
<td>40.62</td>
<td>-74.24</td>
</tr>
<tr>
<td>Facility 18</td>
<td>54,810</td>
<td>51.5</td>
<td>3.61</td>
</tr>
<tr>
<td>Facility 19</td>
<td>26,260</td>
<td>40.2</td>
<td>-79.83</td>
</tr>
<tr>
<td>Facility 20</td>
<td>40</td>
<td>32.11</td>
<td>118.8</td>
</tr>
<tr>
<td>Facility 21</td>
<td>10,030</td>
<td>32.01</td>
<td>118.8</td>
</tr>
<tr>
<td>Facility 22</td>
<td>39,120</td>
<td>51.58</td>
<td>-3</td>
</tr>
<tr>
<td>Facility 23</td>
<td>24,030</td>
<td>53.64</td>
<td>9.21</td>
</tr>
<tr>
<td>Facility</td>
<td>Capacity</td>
<td>GHG Emissions</td>
<td>Methane</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>Facility 24</td>
<td>39,510</td>
<td>65.01</td>
<td>25.47</td>
</tr>
<tr>
<td>Facility 25</td>
<td>73,870</td>
<td>30.6</td>
<td>-87.16</td>
</tr>
<tr>
<td>Facility 26</td>
<td>10</td>
<td>36.7</td>
<td>-79.94</td>
</tr>
<tr>
<td>Facility 27</td>
<td>970</td>
<td>21.18</td>
<td>-102.47</td>
</tr>
<tr>
<td>Facility 28</td>
<td>570</td>
<td>38.6</td>
<td>-90.18</td>
</tr>
<tr>
<td>Facility 29</td>
<td>0</td>
<td>22.54</td>
<td>114.06</td>
</tr>
<tr>
<td>Facility 30</td>
<td>31,620</td>
<td>1.35</td>
<td>103.82</td>
</tr>
<tr>
<td>Facility 31</td>
<td>123,800</td>
<td>30.26</td>
<td>-91.1</td>
</tr>
<tr>
<td>Facility 32</td>
<td>1,830</td>
<td>31.35</td>
<td>120.59</td>
</tr>
<tr>
<td>Facility 33</td>
<td>0</td>
<td>31.25</td>
<td>120.59</td>
</tr>
<tr>
<td>Facility 34</td>
<td>3,970,100</td>
<td>36.55</td>
<td>-82.56</td>
</tr>
<tr>
<td>Facility 35</td>
<td>39,970</td>
<td>29.38</td>
<td>-94.4</td>
</tr>
<tr>
<td>Facility 36</td>
<td>1,128,030</td>
<td>32.5</td>
<td>-94.74</td>
</tr>
<tr>
<td>Facility 37</td>
<td>0</td>
<td>42.14</td>
<td>-83.18</td>
</tr>
<tr>
<td>Facility 38</td>
<td>50</td>
<td>35.54</td>
<td>129.31</td>
</tr>
<tr>
<td>Facility 39</td>
<td>149</td>
<td>19.41</td>
<td>-102.04</td>
</tr>
<tr>
<td>Facility 40</td>
<td>2,930</td>
<td>43.97</td>
<td>-75.91</td>
</tr>
<tr>
<td>Facility 41</td>
<td>0</td>
<td>30.59</td>
<td>114.31</td>
</tr>
<tr>
<td>Facility 42</td>
<td>0</td>
<td>31.34</td>
<td>119.82</td>
</tr>
<tr>
<td>Facility 43</td>
<td>0</td>
<td>36.81</td>
<td>118.06</td>
</tr>
</tbody>
</table>
C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

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

<table>
<thead>
<tr>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals production activities</td>
</tr>
<tr>
<td>5,820,940</td>
</tr>
</tbody>
</table>
| Scope 1 boundary includes manufacturing sites where Eastman has controlling interest. Emissions included are emissions associated with generation of steam and electricity, feedstock emissions, fuel produced on-site. For CDP reporting purposes, the sales of electricity and steam across the reporting boundary are considered as part of the reporting boundary and are not deducted from the total Scope 1 emissions.

C7.5

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

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Scope 2, location-based (metric tons CO2e)</th>
<th>Scope 2, market-based (metric tons CO2e)</th>
<th>Purchased and consumed electricity, heat, steam or cooling (MWh)</th>
<th>Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia Pacific (or JAPA)</td>
<td>256,620</td>
<td>0</td>
<td>1,446,516</td>
<td>0</td>
</tr>
<tr>
<td>Europe</td>
<td>303,650</td>
<td>0</td>
<td>1,692,095</td>
<td>0</td>
</tr>
<tr>
<td>Latin America (LATAM)</td>
<td>9,360</td>
<td>0</td>
<td>52,743</td>
<td>0</td>
</tr>
<tr>
<td>North America</td>
<td>1,037,180</td>
<td>0</td>
<td>5,798,156</td>
<td>0</td>
</tr>
</tbody>
</table>
**C7.6**

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

*By facility*

**C7.6b**

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

<table>
<thead>
<tr>
<th>Facility</th>
<th>Scope 2 location-based emissions (metric tons CO2e)</th>
<th>Scope 2, market-based emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility 1</td>
<td>5,770</td>
<td></td>
</tr>
<tr>
<td>Facility 2</td>
<td>4,070</td>
<td></td>
</tr>
<tr>
<td>Facility 3</td>
<td>4,420</td>
<td></td>
</tr>
<tr>
<td>Facility 4</td>
<td>23,120</td>
<td></td>
</tr>
<tr>
<td>Facility 5</td>
<td>7,340</td>
<td></td>
</tr>
<tr>
<td>Facility 6</td>
<td>61,550</td>
<td></td>
</tr>
<tr>
<td>Facility 7</td>
<td>25,400</td>
<td></td>
</tr>
<tr>
<td>Facility 8</td>
<td>68,420</td>
<td></td>
</tr>
<tr>
<td>Facility 9</td>
<td>30,110</td>
<td></td>
</tr>
<tr>
<td>Facility 10</td>
<td>2,440</td>
<td></td>
</tr>
<tr>
<td>Facility 11</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Facility 12</td>
<td>3,060</td>
<td></td>
</tr>
<tr>
<td>Facility 13</td>
<td>28,540</td>
<td></td>
</tr>
<tr>
<td>Facility 14</td>
<td>14,550</td>
<td></td>
</tr>
<tr>
<td>Facility 15</td>
<td>6,760</td>
<td></td>
</tr>
<tr>
<td>Facility</td>
<td>Emission Value</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>Facility 16</td>
<td>8,980</td>
<td></td>
</tr>
<tr>
<td>Facility 17</td>
<td>570</td>
<td></td>
</tr>
<tr>
<td>Facility 18</td>
<td>19,320</td>
<td></td>
</tr>
<tr>
<td>Facility 19</td>
<td>5,510</td>
<td></td>
</tr>
<tr>
<td>Facility 20</td>
<td>39,090</td>
<td></td>
</tr>
<tr>
<td>Facility 21</td>
<td>20,720</td>
<td></td>
</tr>
<tr>
<td>Facility 22</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Facility 23</td>
<td>9,570</td>
<td></td>
</tr>
<tr>
<td>Facility 24</td>
<td>145,860</td>
<td></td>
</tr>
<tr>
<td>Facility 25</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Facility 26</td>
<td>7,670</td>
<td></td>
</tr>
<tr>
<td>Facility 27</td>
<td>6,570</td>
<td></td>
</tr>
<tr>
<td>Facility 28</td>
<td>20,960</td>
<td></td>
</tr>
<tr>
<td>Facility 29</td>
<td>1,190</td>
<td></td>
</tr>
<tr>
<td>Facility 30</td>
<td>37,710</td>
<td></td>
</tr>
<tr>
<td>Facility 31</td>
<td>1,660</td>
<td></td>
</tr>
<tr>
<td>Facility 32</td>
<td>13,130</td>
<td></td>
</tr>
<tr>
<td>Facility 33</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Facility 34</td>
<td>56,290</td>
<td></td>
</tr>
<tr>
<td>Facility 35</td>
<td>127,530</td>
<td></td>
</tr>
<tr>
<td>Facility 36</td>
<td>714,100</td>
<td></td>
</tr>
<tr>
<td>Facility 37</td>
<td>32,470</td>
<td></td>
</tr>
<tr>
<td>Facility</td>
<td>Emission (metric tons CO2e)</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>Facility 38</td>
<td>35,800</td>
<td></td>
</tr>
<tr>
<td>Facility 39</td>
<td>350</td>
<td></td>
</tr>
<tr>
<td>Facility 40</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Facility 41</td>
<td>360</td>
<td></td>
</tr>
<tr>
<td>Facility 42</td>
<td>3,030</td>
<td></td>
</tr>
<tr>
<td>Facility 43</td>
<td>12,730</td>
<td></td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Activity</th>
<th>Scope 2, location-based, metric tons CO2e</th>
<th>Scope 2, market-based (if applicable), metric tons CO2e</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals production activities</td>
<td>1,606,800</td>
<td></td>
<td>Major shutdowns resulted in a shift in a facility-wide energy balance with more purchased energy and less produced energy compared to previous years.</td>
</tr>
</tbody>
</table>

**C-CH7.8**

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

<table>
<thead>
<tr>
<th>Purchased feedstock</th>
<th>Percentage of Scope 3, Category 1 tCO2e from purchased feedstock</th>
<th>Explain calculation methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Value Chemicals (Steam cracking)</td>
<td>17</td>
<td>Used reported quantity of purchased raw materials and multiplied it by each GHG factor. Divided by total scope 3 emissions. Total amounts of purchased material have remained relatively stable year-over-year.</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>----</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Methanol</td>
<td>2</td>
<td>Used reported quantity of purchased raw materials and multiplied it by each GHG factor. Divided by total scope 3 emissions. Total amounts of purchased material have remained relatively stable year-over-year.</td>
</tr>
<tr>
<td>Propylene (FCC)</td>
<td>9</td>
<td>Used reported quantity of purchased raw materials and multiplied it by each GHG factor. Divided by total scope 3 emissions. Total amounts of purchased material have remained relatively stable year-over-year.</td>
</tr>
<tr>
<td>Polymers</td>
<td>3</td>
<td>Used reported quantity of purchased raw materials and multiplied it by each GHG factor. Divided by total scope 3 emissions. Total amounts of purchased material have remained relatively stable year-over-year.</td>
</tr>
<tr>
<td>Soda ash</td>
<td>1</td>
<td>Used reported quantity of purchased raw materials and multiplied it by each GHG factor. Divided by total scope 3 emissions. Total amounts of purchased material have remained relatively stable year-over-year.</td>
</tr>
<tr>
<td>Other base chemicals</td>
<td>10</td>
<td>Used reported quantity of purchased raw materials and multiplied it by each GHG factor. Divided by total scope 3 emissions. Oxygen, cellulose sulfate, acetic acid, acetone, c9 resin oil, piperylene, 2-EH acid. Total amounts of purchased material have remained relatively stable year-over-year.</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>45</td>
<td>Used reported quantity of purchased raw materials and multiplied it by each GHG factor. Divided by total scope 3 emissions. Liquid nitrogen, demineralized water. Total amounts of purchased material have remained relatively stable year-over-year.</td>
</tr>
</tbody>
</table>

**C-CH7.8a**

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

<table>
<thead>
<tr>
<th>Product</th>
<th>Sales, metric tons</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (CO2)</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Change in emissions (metric tons CO2e)</th>
<th>Direction of change</th>
<th>Emissions value (percentage)</th>
<th>Please explain calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in renewable energy consumption</td>
<td>0</td>
<td>No change</td>
<td>0</td>
</tr>
<tr>
<td>Other emissions reduction activities</td>
<td>114,000</td>
<td>Decreased</td>
<td>1.5</td>
</tr>
</tbody>
</table>
projects. Since the remainder of the boiler conversions were completed in 2018, full emissions reductions will be realized in 2019 reporting year. The total Scope 1 and Scope 2 emissions in 2017 were 7,710,000 mt. We arrived at 1.5% through \((114,000/7,710,000) \times 100 = 1.5\%\).

<table>
<thead>
<tr>
<th>Category</th>
<th>Change</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Divestment</td>
<td>0</td>
<td>No change</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>0</td>
<td>No change</td>
</tr>
<tr>
<td>Mergers</td>
<td>0</td>
<td>No change</td>
</tr>
<tr>
<td>Change in output</td>
<td>29,600</td>
<td>Decreased 0.4</td>
</tr>
<tr>
<td>Change in methodology</td>
<td>0</td>
<td>No change</td>
</tr>
<tr>
<td>Change in boundary</td>
<td>0</td>
<td>No change</td>
</tr>
<tr>
<td>Change in physical operating conditions</td>
<td>50,000</td>
<td>Decreased 0.7</td>
</tr>
<tr>
<td>Unidentified</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>No change</td>
</tr>
</tbody>
</table>

Total production decreased compared to the previous year with revenues increasing as the company transitioned to a Specialty Chemicals manufacturer. The majority of emissions decreased are attributed to emissions reduction projects. Production from 2018 compared to the baseline year has increased by 12% while absolute emissions have decreased by 2.7%. We arrived at 0.4% through \((29,600/7,710,000) \times 100 = 0.4\%\). As previously stated, emissions in 2017 were 7,710,000 mt.

Major shutdowns resulted in a shift in a facility-wide energy balance with more purchased energy and less produced energy compared to previous years. This did result in a decrease in overall emissions. We arrived at 0.7% by \((50,000/7,710,000) \times 100 = 0.7\%\). As previously stated, emissions in 2017 were 7,710,000 mt.
C7.9b

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

Location-based

C8. Energy

C8.1

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

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

C8.2

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

<table>
<thead>
<tr>
<th>Energy-related Activity</th>
<th>Indicate whether your organization undertakes this energy-related activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel (excluding feedstocks)</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired heat</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired cooling</td>
<td>No</td>
</tr>
<tr>
<td>Generation of electricity, heat, steam, or cooling</td>
<td>Yes</td>
</tr>
</tbody>
</table>

C8.2a

(C8.2a) Report your organization’s energy consumption totals (excluding feedstocks) in MWh.
### Heating value

<table>
<thead>
<tr>
<th>Consumption of fuel (excluding feedstock)</th>
<th>Heating value: HHV (higher heating value)</th>
<th>MWh from renewable sources</th>
<th>MWh from non-renewable sources</th>
<th>Total MWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>0</td>
<td>0</td>
<td>4,966,430</td>
<td>4,966,430</td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>0</td>
<td>0</td>
<td>4,023,080</td>
<td>4,023,080</td>
</tr>
<tr>
<td>Consumption of self-generated non-fuel renewable energy</td>
<td>7,400</td>
<td>7,400</td>
<td>31,242,890</td>
<td>31,250,290</td>
</tr>
<tr>
<td>Total energy consumption</td>
<td>7,400</td>
<td>7,400</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### C-CH8.2a

**C-CH8.2a**

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

<table>
<thead>
<tr>
<th>Consumption of fuel (excluding feedstock)</th>
<th>Heating value: HHV (higher heating value)</th>
<th>Total MWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel (excluding feedstock)</td>
<td>HHV (higher heating value)</td>
<td>22,253,380</td>
</tr>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td></td>
<td>4,966,430</td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td></td>
<td>4,023,080</td>
</tr>
<tr>
<td>Consumption of self-generated non-fuel renewable energy</td>
<td></td>
<td>7,400</td>
</tr>
<tr>
<td>Total energy consumption</td>
<td></td>
<td>31,250,290</td>
</tr>
</tbody>
</table>

### C8.2b

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

<table>
<thead>
<tr>
<th>Consumption of fuel for the generation of electricity</th>
<th>Indicate whether your organization undertakes this fuel application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel for the generation of electricity</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of fuel for the generation of heat</td>
<td>Yes</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>Consumption of fuel for the generation of steam</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of fuel for the generation of cooling</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of fuel for co-generation or tri-generation</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**C8.2c**

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

---

**Fuels (excluding feedstocks)**

Coal

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

6,319,070

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

0

**MWh fuel consumed for self-generation of steam**

0

**MWh fuel consumed for self-cogeneration or self-trigeneration**

6,319,070
Comment
Coal is used for co-generation of electricity and steam on-site. Coal is also used as a feedstock. The feedstock coal emissions are included in the Scope 1 emissions.

<table>
<thead>
<tr>
<th>Fuels (excluding feedstocks)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td></td>
</tr>
</tbody>
</table>

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
11,573,890

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
2,961,040

MWh fuel consumed for self-generation of steam
1,107,080

MWh fuel consumed for self-cogeneration or self-trigeneration
7,505,770

Comment
Portions of the MWh consumption of natural gas is used for co-generation of steam and electricity. The remainder is used for heating purposes.
Liquefied Petroleum Gas (LPG)

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

42,800

**MWh fuel consumed for self-generation of electricity**

0

**MWh fuel consumed for self-generation of heat**

42,800

**MWh fuel consumed for self-generation of steam**

0

**MWh fuel consumed for self-cogeneration or self-trigeneration**

0

**Comment**

---

Fuels (excluding feedstocks)

Distillate Oil

**Heating value**

HHV (higher heating value)

**Total fuel MWh consumed by the organization**

29,180
MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
29,180

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Comment

---

Fuels (excluding feedstocks)
Residual Fuel Oil

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
39,130

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
39,130

MWh fuel consumed for self-generation of steam
MWh fuel consumed for self-cogeneration or self-trigeneration
0

Comment

Fuels (excluding feedstocks)
Other, please specify
Fuel Produced On-Site

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
4,249,310

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
4,249,310

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Comment
Some fuel is generated on-site and consumed onsite. Fuels produced on-site are valuable and are used to offset fossil fuel or other purchases.

**C8.2d**

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

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Emission factor</th>
<th>Unit</th>
<th>Emission factor source</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>207.3</td>
<td>lb CO2e per million Btu</td>
<td>IPCC, 4th Assessment Report</td>
<td></td>
</tr>
<tr>
<td>Distillate Oil</td>
<td>163.61</td>
<td>lb CO2e per million Btu</td>
<td>IPCC, 4th Assessment Report</td>
<td></td>
</tr>
</tbody>
</table>
### Liquefied Petroleum Gas (LPG)

**Emission factor**  
136.61  

**Unit**  
lb CO2e per million Btu  

**Emission factor source**  
IPCC, 4th Assessment Report  

**Comment**

### Natural Gas

**Emission factor**  
117.1  

**Unit**  
lb CO2e per million Btu  

**Emission factor source**  
IPCC, 4th Assessment Report  

**Comment**

### Residual Fuel Oil

**Emission factor**  
166.13  

Unit
lb CO2e per million Btu

Emission factor source
IPCC, 4th Assessment Report

Comment

Other

Emission factor
190.86

Unit
lb CO2e per million Btu

Emission factor source
Calculated for fuel produced on-site. The materials produced on-site do not have a standard emissions factor. The emissions factor listed in this report is an average emissions factor for multiple fuels produced within the scope of this report.

Comment

C8.2e

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

<table>
<thead>
<tr>
<th></th>
<th>Total Gross generation (MWh)</th>
<th>Generation that is consumed by the organization (MWh)</th>
<th>Gross generation from renewable sources (MWh)</th>
<th>Generation from renewable sources that is consumed by the organization (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>1,105,990</td>
<td>1,105,990</td>
<td>7,400</td>
<td>7,400</td>
</tr>
</tbody>
</table>
C-CH8.2e

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

<table>
<thead>
<tr>
<th></th>
<th>Total gross generation (MWh) inside chemicals sector boundary</th>
<th>Generation that is consumed (MWh) inside chemicals sector boundary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>1,105,990</td>
<td>1,105,990</td>
</tr>
<tr>
<td>Heat</td>
<td>7,321,460</td>
<td>7,321,460</td>
</tr>
<tr>
<td>Steam</td>
<td>13,825,931</td>
<td>8,436,650</td>
</tr>
<tr>
<td>Cooling</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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.

C-CH8.3

(C-CH8.3) Disclose details on your organization’s consumption of feedstocks for chemical production activities.

Feedstocks

---
Coal

**Total consumption**
400,000

**Total consumption unit**
metric tons

**Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit**
2.7

**Heating value of feedstock, MWh per consumption unit**
8.4

**Heating value**
HHV

**Comment**
All carbon feedstock is not combusted to CO2 emissions but is used as a raw material to produce chemicals.

-----------------------------

**Feedstocks**
Natural gas

**Total consumption**
3,480,000

**Total consumption unit**
million cubic feet

**Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit**
0.06
Heating value of feedstock, MWh per consumption unit
0.3

Heating value
HHV

Comment
All carbon feedstock is not combusted to CO2 emissions but is used as a raw material to produce chemicals.

C-CH8.3a

(C-CH8.3a) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.

<table>
<thead>
<tr>
<th>Percentage of total chemical feedstock (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
</tr>
<tr>
<td>Natural Gas</td>
</tr>
<tr>
<td>Coal</td>
</tr>
<tr>
<td>Biomass</td>
</tr>
<tr>
<td>Waste</td>
</tr>
<tr>
<td>Fossil fuel (where coal, gas, oil cannot be distinguished)</td>
</tr>
<tr>
<td>Unknown source or unable to disaggregate</td>
</tr>
</tbody>
</table>
## C9. Additional metrics

### C9.1

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Metric value</th>
<th>Metric numerator</th>
<th>Metric denominator (intensity metric only)</th>
<th>% change from previous year</th>
<th>Direction of change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other, please specify</td>
<td>10.9</td>
<td>Energy used</td>
<td>Production by weight</td>
<td>0.4</td>
<td>Decreased</td>
</tr>
</tbody>
</table>

**Please explain**

Eastman’s energy efficiency improvement metric is based on guidelines provided by the US Department of Energy. Rather than a simple energy intensity (energy/unit of product), the DOE recommends using advanced modelling techniques to normalize for weather and production and other pertinent variables. This results in a measure that more accurately reflects actual performance. Eastman’s energy efficiency
improvement metric is reviewed annually by both the US DOE and the Oak Ridge National Laboratory. In 2018, Eastman’s energy efficiency improvement declined. This was due to several reasons. There was an unusual number of new plant start-ups in 2018. The start-up process is inherently inefficient as plants are started, may take some time to reach full capacity and may require unexpected shutdowns to correct issues. In addition, some energy intensive processes suffered from uneven production throughout the year. Early in the year, inefficient equipment, which is not typically operated, was used as all units were needed to meet demand. Later in the year, sales declined, with production at less than full rates, again resulting in decreased efficiency. Data in early 2019 has seen improvements.

C-CH9.3a

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

<table>
<thead>
<tr>
<th>Output product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (metric tons)</td>
</tr>
<tr>
<td>Capacity (metric tons)</td>
</tr>
<tr>
<td>Direct emissions intensity (metric tons CO2e per metric ton of product)</td>
</tr>
<tr>
<td>Electricity intensity (MWh per metric ton of product)</td>
</tr>
<tr>
<td>Steam intensity (MWh per metric ton of product)</td>
</tr>
<tr>
<td>Steam/ heat recovered (MWh per metric ton of product)</td>
</tr>
</tbody>
</table>
Comment

C-CH9.6

(C-CH9.6) Disclose your organization’s low-carbon investments for chemical production activities.

C10. Verification

C10.1

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

<table>
<thead>
<tr>
<th>Scope</th>
<th>Verification/assurance status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1</td>
<td>No third-party verification or assurance</td>
</tr>
<tr>
<td>Scope 2 (location-based or market-based)</td>
<td>No third-party verification or assurance</td>
</tr>
<tr>
<td>Scope 3</td>
<td>No third-party verification or assurance</td>
</tr>
</tbody>
</table>

C10.2

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

No, we do not verify any other climate-related information reported in our CDP disclosure.
C11. Carbon pricing

C11.1

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

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.
- EU ETS
- Korea ETS
- UK carbon price floor

C11.1b

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

<table>
<thead>
<tr>
<th>EU ETS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>% of Scope 1 emissions covered by the ETS</strong></td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td><strong>Period start date</strong></td>
</tr>
<tr>
<td>January 1, 2018</td>
</tr>
<tr>
<td><strong>Period end date</strong></td>
</tr>
<tr>
<td>December 31, 2018</td>
</tr>
<tr>
<td><strong>Allowances allocated</strong></td>
</tr>
<tr>
<td>151,044</td>
</tr>
</tbody>
</table>
Allowances purchased
39,653

Verified emissions in metric tons CO2e
236,292

Details of ownership
Facilities we own and operate

Comment
Five Eastman manufacturing sites are covered by the EU ETS, which represent 57% of GHG emissions in the European region and 3% of the total scope 1 emissions from Eastman global GHG emissions.

Korea ETS

% of Scope 1 emissions covered by the ETS
0.1

Period start date
January 1, 2018

Period end date
December 31, 2018

Allowances allocated
54,393

Allowances purchased
0

Verified emissions in metric tons CO2e
73,618
Details of ownership
Facilities we own and operate

Comment
100% of Eastman’s emissions in South Korea are covered by the Korea ETS, they represent <0.1% of the total scope 1 of Eastman's global GHG emissions.

C11.1c

(C11.1c) Complete the following table for each of the tax systems in which you participate.

UK carbon price floor

<table>
<thead>
<tr>
<th>Period start date</th>
<th>Period end date</th>
<th>% of emissions covered by tax</th>
<th>Total cost of tax paid</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 10, 2018</td>
<td>December 31, 2018</td>
<td>10</td>
<td>59,974</td>
</tr>
</tbody>
</table>

Comment
CPS (carbon pricing support) only affects the fuel that is used to generate electricity - This is in addition to EUETS allowances

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?
Eastman's current strategy for allowance trading under all emission trading schemes is to properly manage the compliance obligations of facilities worldwide by pursuing operating efficiency improvements wherever possible to minimize compliance obligation. Eastman will then purchase allowances/compliance instruments to satisfy any net compliance obligations. If allowances allocated to the company exceed the current compliance obligations, allowances are generally retained for future compliance requirements. Eastman does not trade allowances speculatively.

**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.

<table>
<thead>
<tr>
<th>Objective for implementing an internal carbon price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder expectations</td>
</tr>
<tr>
<td>Drive energy efficiency</td>
</tr>
<tr>
<td>Stress test investments</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GHG Scope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1</td>
</tr>
<tr>
<td>Scope 2</td>
</tr>
</tbody>
</table>

**Application**
Capital projects globally

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

**Variance of price(s) used**
Price in countries under regulated programs will reflect market price in those Eastman site locations. For Eastman site locations not in a regulated market, price is based on purchase of offsets for carbon emissions.

**Type of internal carbon price**
Shadow price

**Impact & implication**
Used in Eastman’s financial analysis on business and investment decisions.

**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
Compliance & onboarding

**Details of engagement**

Other, please specify

We request that our suppliers complete a sustainability assessment that provides us a baseline of their current performance related to climate-related issues. With this information, Eastman representatives can engage suppliers about improvement opportunities.

% of suppliers by number

3

% total procurement spend (direct and indirect)

38

% Scope 3 emissions as reported in C6.5

**Rationale for the coverage of your engagement**

We are institutionalizing a systemic approach to assess our suppliers so that we can then engage with them to help drive improvements.

**Impact of engagement, including measures of success**

To date, Eastman has invited 573 suppliers to participate in TfS assessments; and 286 of them completed the assessment and obtained an Ecovadis score.

**Comment**

Eastman is a member of Together for Sustainability (TfS), the Chemical initiative for Sustainable Supply Chains. As part of this initiative, Eastman began assessing its supply base using the TfS assessment supplied by Ecovadis. TfS is a member-driven initiative founded in 2011 by major chemical companies. Since that time, membership has grown to 20 members, including Eastman as the first US chemical industry member. TfS develops and implements a global supplier engagement program to assess, audit and improve sustainability practices within the supply chain of the chemical industry. TfS members have two tools at their disposal to evaluate their suppliers' sustainability management: (1) assessments conducted via Ecovadis and (2) TfS audits, on-site reviews conducted by pre-approved audit companies.
C12.1b

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

<table>
<thead>
<tr>
<th>Type of engagement</th>
<th>Education/information sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Details of engagement</strong></td>
<td>Share information about your products and relevant certification schemes (i.e. Energy STAR)</td>
</tr>
<tr>
<td><strong>% of customers by number</strong></td>
<td>75</td>
</tr>
<tr>
<td><strong>% Scope 3 emissions as reported in C6.5</strong></td>
<td>70</td>
</tr>
</tbody>
</table>

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

We have conducted LCAs on approximately 80% of our products which we share with customers upon request and use that opportunity to engage with them in a deeper dialogue regarding our commitment to reducing our carbon footprint and better understanding their priorities. Additionally, we share via our website and in discussions with customers, the relevant sustainability-related certifications that our products carry. Eastman has been awarded its 8th consecutive ENERGY STAR® recognition for its outstanding energy management program. We share our ENERGY STAR® Partner of the Year status with customers regarding all of our products.

Impact of engagement, including measures of success

Positioning Eastman as a company committed to managing and reducing emissions and developing deeper engagement with customers that value this.

C12.1c

(C12.1c) Give details of your climate-related engagement strategy with other partners in the value chain.
As a member of the American Chemistry Council (ACC), Eastman encourages and supports logistics providers in becoming Responsible Care® Partners. For more than 25 years, Responsible Care® Partners have worked hand-in-hand with ACC members to promote continual environmental, health, safety and security (EHS&S) performance improvements throughout the chemical industry supply chain. Eastman is striving to collaborate with suppliers through strategic relationship management teams, performance metric reviews, and innovation discussions to surface and vet sustainable solutions for our logistics needs.

The Global Supply Chain at Eastman partners with our logistics providers to actively look for solutions that can improve our carbon footprint and reduce accidental releases of material. Our suppliers are always looking for ways to implement sustainable solutions such as upgrading to new trucks and maximizing the miles per gallon realized over mountainous terrain. Many of our logistics partners are members of SmartWay®, which encourages fuel savings and reduced emissions through a variety of sustainable strategies, such as wind deflectors, idle reduction equipment and speed control.

Eastman also engages with other partners in the value chain through membership in, support for, and participation in organizations that are involved in climate-related activities. Examples of such activities include participation in the World Business Council for Sustainable Development, the Consortium of Ocean Leadership, The Nature Conservancy, and sponsorship of the Economist World Ocean Summit. At the Economist World Ocean Summit held in Mexico in February 2018, Eastman's Senior Vice-President and Chief Sustainability Officer, served as a panelist in a discussion regarding the necessity to enhance ocean and climate research to enable better information and solutions with regard to climate change adaptation and resiliency. To that end, Eastman is partnering with the Woods Hole Oceanographic Institution (WHOI), the world’s leading, independent, non-profit organization dedicated to ocean research, exploration and higher education; working to tackle three main challenges -- the ocean in the climate system, the hydrological cycle, and carbon dioxide and the climate.

Eastman actively follows groups such as the Task Force for Climate-related Financial Disclosure and the Sustainability Accounting Standards Board.

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?**

<table>
<thead>
<tr>
<th>Focus of legislation</th>
<th>Corporate position</th>
<th>Details of engagement</th>
<th>Proposed legislative solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy efficiency</td>
<td>Support</td>
<td>Eastman has engaged the US Department of Energy, Oak Ridge National Laboratory, and Lawrence Berkeley National Laboratory and the US EPA in support of our efforts to promote energy efficiency across the company. Eastman is a DOE Better Plants Challenge partner. Our efforts have led Eastman to be named as an ENERGY STAR Partner of the Year for eight consecutive years with the last six being selected as Sustained Excellence.</td>
<td>None</td>
</tr>
<tr>
<td>Clean energy generation</td>
<td>Support</td>
<td>Eastman advocated broad definitions of clean energy to allow new and innovative approaches as well as promotion of combined heat and power for more efficient use of traditional fuels.</td>
<td></td>
</tr>
<tr>
<td>Other, please specify</td>
<td>Support</td>
<td>The Eastman Government Affairs and Public Policy group engage with policy makers and advocate for the development of laws based on sound science. With regards to the science of climate change, they represent the company position that a better understanding of the role of the oceans would enable scientists to improve climate models and reduce uncertainties.</td>
<td>Increase funding in ocean research to yield data that contributes to more informed policy making.</td>
</tr>
<tr>
<td>Other, please specify</td>
<td>Support</td>
<td>Eastman uses combined heat and power for the majority of our steam and electricity needs. Eastman works with policy makers and agencies like DOE and EPA to encourage the creation of legislation and regulations that encourage additional use of efficient combined heat and power to reduce power demand from less efficient, traditional power generation plants.</td>
<td></td>
</tr>
</tbody>
</table>

### 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.

<table>
<thead>
<tr>
<th>Trade association</th>
<th>Is your position on climate change consistent with theirs?</th>
<th>Please explain the trade association’s position</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Chemistry Council</td>
<td>Mixed</td>
<td>The American Chemistry Council does not have a published policy on climate change legislation and is generally neutral on that subject. ACC supports legislative proposals to improve energy efficiency and/or promote the increased use of materials that enable renewable energy, energy efficiency, etc. ACC generally opposes regulatory approaches that it believes will impose significant costs on the chemical industry. Eastman encourages ACC to support legislation that promotes energy efficiency. Eastman also worked through ACC to get lawmakers to correct provisions in proposed carbon trading legislation that would have disadvantaged the chemical industry.</td>
</tr>
<tr>
<td>Business Roundtable</td>
<td>Consistent</td>
<td>Business Roundtable’s position on climate change is consistent with Eastman’s and is explained as follows: Access to reliable, affordable energy undergirds U.S. national and economic security, and a clean, healthy environment is essential for economic prosperity now and for</td>
</tr>
</tbody>
</table>
future generations. The Business Roundtable supports policies that capitalize on America's strengths in technology and energy diversity to maximize U.S. energy options and preserve environmental quality. The business community has a special obligation to step forward and help build an environmentally and economically sustainable future. Because the consequences of climate change for society and ecosystems are potentially serious and far-reaching, Business Roundtable believes that steps to address the risks of such climate are prudent and supports collective actions that will lead to the reduction of greenhouse gas emissions on a global basis.

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

Eastman recognizes customer innovation is crucial in sustainable solutions and transparency in accountability both up and downstream with supply chains is imperative to the changing world and sustainability. For this reason, Eastman became a signatory member of the United Nations Global Compact (UNGC). The UNGC assists in managing risks and opportunities in “complex environmental, social and government realms” with universal principles. Participating companies utilize an accountability policy, Communication on Progress (COP), which exhibits a commitment to transparency.

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**Trade association**

Cefic

**Is your position on climate change consistent with theirs?**

Consistent

**Please explain the trade association’s position**

Cefic recognizes the industry need for reliable supplies of competitively priced energy and supports establishment of competitive energy markets with energy flowing freely across national borders in the EU. A key element is energy efficiency and a recognition that the chemical industry is a solution provider of energy efficiency and energy saving solutions throughout the economy. Policies fostering energy savings i.e. in transport and buildings will open new market opportunities for the chemical industry. At the same time, policies should safeguard industry access to competitive, reliable energy so as to remain able to provide such services to society. Cefic believes the way to achieve the move towards a low carbon economy is to fully expose renewables to the market which would drive down costs. Cefic supports a path to a low carbon economy under which the aim of the policy is to ‘innovate down’ the cost of decarbonisation to make it competitive, rather than to increase the cost of essential feedstocks and energy.

**How have you influenced, or are you attempting to influence their position?**
Eastman participates in various Cefic groups and councils that help to craft Cefic policy.

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?

Members of the ESG Council and the Sustainability Council and sub-councils work across functions within the company, including energy management, product stewardship, sustainability, innovation and life cycle analysis, legislative and regulatory advocacy, and marketing and public communications to ensure consistency with Eastman’s overall climate change strategy. These corporate functions are directly aligned with manufacturing through the Company’s utility operations, business organizations, and regional environmental permitting and compliance staff groups and product stewards. Insights from operations management and from these various functions lead to an improved cross-functional understanding of the risks associated with emerging environmental issues as well as the opportunities that could offer a competitive advantage in the marketplace. Comprehensive strategies are developed and roles and responsibilities are assigned to ensure coordinated, consistent internal and external messaging.

C12.4

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

Publication

In voluntary sustainability report
Status
Complete

Attach the document

Eastman Sustainability Report 2019.pdf

Page/Section reference

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

<table>
<thead>
<tr>
<th>Job title</th>
<th>Corresponding job category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Vice President, Chief Legal &amp; Sustainability Officer, and Corporate Secretary</td>
<td>Chief Sustainability Officer (CSO)</td>
</tr>
</tbody>
</table>