# **General Motors Company - Climate Change 2018**

## **C0. Introduction**

## **C0.1**

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

General Motors Co. is a global company committed to delivering safer, better and more sustainable ways for people to get around. With global headquarters in Detroit, Michigan, GM employs 180,000 people in nearly 300 facilities across six continents.

GM offers a comprehensive range of vehicles and services in more than 120 countries around the world. The largest national market for its products is China, followed by the U.S., Brazil, United Kingdom, Germany, Canada and Italy. Along with its strategic partners, GM produces cars and trucks, and sells and services for these vehicles through the following brands: Chevrolet and Cadillac globally, and Baojun, Buick, GMC, Holden, Isuzu, Jiefang, and Wuling in certain regions or specific countries.

GM also maintains equity stakes in major joint ventures including SAIC-GM, SAIC-GM-Wuling, FAW-GM in China and GM Korea, as well as subsidiaries such as OnStar, a recognized industry leader in vehicle safety, security and information services and Cruise Automation, a leader in autonomous driving technology. .

More information on the new GM is available at www.gm.com.

GM’s commitment to sustainability applies to every part of our business and creates value for customers. It underscores GM’s philosophy of “Customer-Driven Sustainability” – an approach for meeting customers’ needs through sustainability by making the mobile experience safer, more efficient and better integrated with everyday life. As part of that commitment and philosophy, it continually assesses and takes steps to reduce the environmental impact of its products and operations. Focusing on areas such as energy management, carbon and waste intensity reduction, resource preservation and more efficient vehicles through its technological advances, global reach and innovative employees, helps the Company reduce its environmental footprint and also share best practices around the world for broad results.

Sustainability is also an important part of GM’s people and culture. The company integrates sustainability across every business function and through each level of the organization. GM is actively engaged in cross-functional efforts to seize environmental and social opportunities to improve our Company and the communities in which we operate.

The GM Environmental Principles are the foundation for the Company’s environmental efforts and regional–specific policies around the world. Developed over 20 years ago, the Environmental Principles state:

As a responsible corporate citizen, GM is dedicated to protecting human health, natural resources, and the global environment. This dedication reaches further than compliance with the law to encompass the integration of sound environmental practices into our business decisions.

The following environmental principles provide guidance to GM personnel worldwide in the conduct of their daily business practices.

• We are committed to actions to restore and preserve the environment.

• We are committed to reducing waste and pollutants, conserving resources, and recycling materials at every stage of the product life cycle.

• We will continue to participate actively in educating the public regarding environmental conservation.

• We will continue to pursue vigorously the development and implementation of technologies for minimizing pollutant emissions.

• We will continue to work with all governmental entities for the development of technically sound and financially responsible environmental laws and regulations.

• We will continually assess the impact of our plants and products on the environment and the communities in which we live and operate with a goal of continuous improvement.

GM also maintains Environmental Performance Criteria (GM EPC) to support the consistent implementation of the GM Environmental Principles across the globe, particularly where regulatory programs do not clearly address those goals. The GM EPC supplements applicable legal requirements by setting baseline environmental management and performance regardless of where GM operations are located. The GM EPC provides a common process for planning and implementing resource conservation and pollution prevention or control measures.

General Motors is reporting greenhouse gas emissions (GHG) consistent with GHG Protocol for operations where we have operational control or influence for GHG emissions for owned and joint ventures as applicable. Our operations are managed regionally in North America, South America, and International Operations (rest of world) and will be reporting Scope 1 and 2 emissions by these regions, as well as company wide.

## **C0.2**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Start date** | **End date** | **Indicate if you are providing emissions data for past reporting years** | **Select the number of past reporting years you will be providing emissions data for** |
| Row 1 | janvier 1 2017 | décembre 31 2017 | Yes | 2 years |
| Row 2 | janvier 1 2016 | décembre 31 2016 | <Not Applicable> | <Not Applicable> |
| Row 3 | janvier 1 2015 | décembre 31 2015 | <Not Applicable> | <Not Applicable> |
| Row 4 | <Not Applicable> | <Not Applicable> | <Not Applicable> | <Not Applicable> |

## **C0.3**

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

Argentina

Australia

Brazil

Canada

Chile

China

Colombia

Ecuador

Egypt

India

Mexico

Republic of Korea

Russian Federation

Thailand

United States of America

Uzbekistan

Viet Nam

Other, please specify (Rest of World)

## **C0.4**

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

USD

## **C0.5**

### **(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your consolidation approach to your Scope 1 and Scope 2 greenhouse gas inventory.**

Operational control

## **C-TO0.7/C-TS0.7**

### **(C-TO0.7/C-TS0.7) For which transport modes will you be providing data?**

Light Duty Vehicles (LDV)

## **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) of the individual(s) on the board with responsibility for climate-related issues.**

|  |  |
| --- | --- |
| **Position of individual(s)** | **Please explain** |
| Director on board | (i) The Governance and Corporate Responsibility Committee (GCRC) of the GM Board of Directors (ii) is comprised of three independent directors. The Committee selects members of the Board; provides leadership in shaping GM’s corporate governance which is important for long-term environmental, social and corporate governance “ESG” success; and oversees GM’s policies and strategies related to Sustainability which is achieved through a standing agenda item for ESG related activities which includes climate-related updates. The members of this committee have extensive leadership and strategy experience gained at companies respected for their ESG performance. Their input is valuable as GM further integrates sustainability into its business strategy and addresses climate change on its drive toward a future of zero emissions. |

## **C1.1b**

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

|  |  |  |
| --- | --- | --- |
| **Frequency with which climate-related issues are a scheduled agenda item** | **Governance mechanisms into which climate-related issues are integrated** | **Please explain** |
| Scheduled – some meetings | Reviewing and guiding strategy  Reviewing and guiding major plans of action  Reviewing and guiding risk management policies | The Governance and Corporate Responsibility Committee (GCRC) of the board of directors of General Motors assists the board in its oversight of the company's governance structures, programs, and policies., It brings to the attention of the Board and management as appropriate, current and emerging global political, social, and policy issues that may affect the business operations, profitability, or public image or reputation of the Company. The GCRC oversees global public policy matters as well as specific functions of the Company, as appropriate, including strategy, action plans, and risk management. Company functions reviewed by the GCRC include Legal, Global Public Policy, sustainability including climate change, corporate social responsibility, and philanthropic activities. |

## **C1.2**

### **(C1.2) Below board-level, provide the highest-level management position(s) or committee(s) with responsibility for climate-related issues.**

|  |  |  |
| --- | --- | --- |
| **Name of the position(s) and/or committee(s)** | **Responsibility** | **Frequency of reporting to the board on climate-related issues** |
| Chief Executive Officer (CEO) | Assessing climate-related risks and opportunities | As important matters arise |
| Other C-Suite Officer, please specify (GM's Manufacturing Leadership Exec. VP) | Both assessing and managing climate-related risks and opportunities | More frequently than quarterly |

## **C1.2a**

### **(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored.**

GM’s CEO is also Chairman of the Board of Directors. Under the CEO’s leadership, GM envisions a world with zero crashes, to save lives; zero emissions, so future generations can inherit a healthier planet; and zero congestion, so customers get back a precious commodity -- time.

The CEO is focused on strengthening GM’s core business of light-duty vehicles, while also working to lead the transformation of personal mobility through advanced technologies like connectivity, electrification, autonomous driving and car sharing. The CEO has also established a strategic direction based on putting the customer at the center of everything the company does and GM’s customers expect GM to help mitigate, if not eliminate, issues such as congestion and emissions.

The CEO receives regular updates and is involved in key decisions that further our long-term strategic objectives including our efforts to reduce GHG emissions toward a future of zero emissions.

The Risk Committee of the Board is responsible for overseeing GM’s management of enterprise-level risks. The Strategic Risk Management (SRM) team, led by an executive director with dedicated resources, has risk management responsibility and is supported by the Risk Advisory Council (RAC)—executives who directly report to the Executive Leadership Team (ELT). A global network of executives representing GM’s key functions and markets are given additional responsibilities as risk officers to support the overall SRM program and process. GM’s risk and opportunities identification process is as follows:

- RAC and Risk officers appointed

- Annual identification, evaluation and assessment of Company and asset risks and opportunities.

- Ongoing mitigation plan development and monitoring by RAC and Risk Officers and approval by the ELT.

(i) Risks and opportunities are categorized based on frequency, velocity, and impact on financials, operations, reputation, etc.

- All top risks have approved mitigation plans, and are reviewed regularly by the ELT and the Board.

- All other risks have either an approved mitigation plans and are reviewed at least once a year by the ELT, or after being fully analyzed, are put on a “watch list” and are monitored by the risk officer and their respective ELT member.

(ii) Asset level risks have mitigation plans that are the responsibility of local management. Exposure to and experience with catastrophic risk or losses from climate change or other natural events are continuously analyzed and reviewed for ongoing operations and when evaluating new sites and supplier selection. Asset level risks are generally those that are anticipated to occur with regular or high frequency, but have a low impact on the Company and can be managed locally. Lessons learned are incorporated into future site planning, supplier selection process, and risk mitigation and strategic development. For Manufacturing, each site has a Plant director (PD) that has profit and loss responsibility for operations. PD often need support for asset level risk and rely on the Manufacturing Leadership Team (MLT), comprised of Executive VP for Global Manufacturing, regional VPs of Manufacturing, VP of Sustainable Workplaces, Manufacturing representative on RAC, and other resources for risk management and action planning and implementation. The MLT has subject matter experts in risk management and sustainability as resources to PD for risk management.

## **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.**

### **Who is entitled to benefit from these incentives?**

Corporate executive team

### **Types of incentives**

Monetary reward

### **Activity incentivized**

Emissions reduction target

### **Comment**

GM introduced its vision of a future with zero crashes, zero emissions, and zero congestion in 2017. Related, GM updated its executive compensation program in 2017 to continue our leaders focus on the key areas that both drive the business forward and align to the short-term and long-term interests of our shareholders. Accordingly, GM’s Short-term Incentive Plan was modified to include an individual performance component weighted at 25%, including results that had a positive impact on Environmental, Social, and Governance (ESG) measures. Individual performance is based on GM’s "Commitment and Accountability Partnership" or CAP system for performance evaluation and compensation. CAP goals are set at the beginning of the year and reviewed every 6 months for performance. For example, as highlighted in GM’s 2018 Proxy statement, GM CEO’s compensation was evaluated against GM’s 2017 strategic objectives and included the introduction of GM’s vision of zero crashes, zero emissions, and zero congestion, expanding car-sharing capabilities, announcing plans for at least 20 new electric vehicles by 2023, and achieving a record number of electric vehicles sold in 2017. Another example include Business Unit managers, or plant managers, have meeting Energy targets for their facilities as one of their goals that relates to compensation.

## **C2. Risks and opportunities**

## **C2.1**

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **From (years)** | **To (years)** | **Comment** |
| Short-term | 1 | 3 |  |
| Medium-term | 3 | 5 |  |
| Long-term | 5 | 10 |  |

## **C2.2**

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

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

## **C2.2a**

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Frequency of monitoring** | **How far into the future are risks considered?** | **Comment** |
| Row 1 | Annually | >6 years | One of the most significant risks likely to impact GM are regulatory risks. Due to the potentially catastrophic effects of climate change, governments around the world have or are likely to enact policies and regulations that could impact our operations and products. Because it may take 3-5 years to design and develop a vehicle before it is launched in the market and then remain competitive and compliant for another 4-7 years, GM uses a long-term approach to regulatory risks. |

## **C2.2b**

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

GM’s Executive Director of Strategic Risk Management (SRM), is fully dedicated to risk management at GM and supports executive leadership, including our Chairman and CEO who considers herself the Chief Risk Officer, as well as GM’s Board and Risk Committee. The Risk Committee of the Board is responsible for overseeing the Company’s management of enterprise-level risks, including climate-related risks such as climate-related policies and regulations that can impact our products, services, and operations, along with the Strategic Risk Management (SRM) program and processes. This executive director leads the SRM team and is supported by the Risk Advisory Council (RAC)—executives who directly report to the Executive Leadership Team (ELT). A global network of executives representing GM’s key functions and markets are given additional responsibilities as Risk Officers to support the overall SRM program and process. GM’s risk and opportunities identification process is as follows: - RAC and Risk officers appointed; Annual identification, evaluation and assessment of Company and asset risks and opportunities conducted; Ongoing mitigation plan development and monitoring by RAC and Risk Officers and approval by the ELT.

- Asset level risks have mitigation plans that are the responsibility of local management. Exposure to and experience with catastrophic risk or losses from climate change or other natural events are continuously analyzed and reviewed for ongoing operations and when evaluating new sites and supplier selection. Asset level risks are generally those that are anticipated to occur with regular or high frequency, but have a low impact on the Company and can be managed locally. Lessons learned are incorporated into future site planning, supplier selection process, and risk mitigation and strategic development.

- The process and terminology in place for assessing relative significance of all identified risks, including climate-related risks such increased and more stringent GHG emission regulations, is as follows: (i) Risks and opportunities are categorized based on frequency, velocity, and impact on financials, operations, reputation, etc. - All top risks have approved mitigation plans, and are reviewed regularly by the ELT and the Board. - All other risks have either an approved mitigation plans and are reviewed at least once a year by the ELT, or after being fully analyzed, are put on a “watch list” and are monitored by the risk officer and their respective ELT member.

- GM assesses risks based on management’s professional judgment, the relevant case law, definitions and guidance from the U.S. Securities and Exchange Commission (the “SEC”) and discussions with external auditors. This includes both a quantitative and qualitative assessment. From a quantitative perspective, GM considers the risk as a percentage of various financial statement amounts (*e.g.*, assets, liabilities, revenues, earnings, etc.). From a qualitative perspective, GM considers all of the relevant circumstances including, whether the risk is strategically integral or important to the company’s business plan, whether the risk will have an impact on future results of operations or financial condition, and whether the risk is important to an understanding of the company’s business. As a result, risks that we have identified as having a substantive impact will vary from risk to risk in terms of quantitative and qualitative perspectives.

## **C2.2c**

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

|  |  |  |
| --- | --- | --- |
|  | **Relevance & inclusion** | **Please explain** |
| Current regulation | Relevant, always included | Our products are subject to extensive laws, governmental regulations and policies, that can significantly increase our costs and affect how we do business. We are significantly affected by governmental regulations that can increase costs related to the production of our vehicles and affect our product portfolio. Meeting or exceeding many of these regulations is costly and often technologically challenging with respect to mandated emissions and fuel economy standards, especially where standards may not be harmonized across jurisdictions. Driven by climate change and other related factors such as air quality and energy security, GHG and fuel consumption standards have become more stringent to meet policy priorities. We anticipate that the number and stringency of these regulations, and the related costs and changes to our product portfolio, may increase significantly in the future. These government regulatory requirements could significantly affect our plans for global product development and given the uncertainty surrounding enforcement and regulatory definitions, may result in substantial costs, including civil or criminal penalties. In addition, an evolving but un-harmonized regulatory framework may limit or dictate the types of vehicles we sell and where we sell them, which can affect revenue. |
| Emerging regulation | Relevant, always included | We see autonomous technology leading towards a future of zero congestion, zero emissions and zero crashes, since more than 90% of crashes are caused by driver error, according to the National Highway Traffic Safety Administration (NHTSA). We are among the leaders in the industry with significant global real-world experience in delivering connectivity, safety and security services to millions of customers through OnStar, LLC (OnStar) and advanced safety features that are the building blocks to more advanced automation features that are driving our leadership position in the development of autonomous technology. An example of advanced automation is Super Cruise, a hands-free driving customer convenience feature that is available on the 2018 Cadillac CT6 sedan. We are actively testing autonomous vehicles on public roads in San Francisco, California; Scottsdale, Arizona; and Warren, Michigan. Additionally, we plan to develop an integrated network of on-demand autonomous vehicles in the U.S. In November 2017 we announced that our growing fleet of test vehicles will accumulate a significant number of miles in 2018, and based on our current rate of change we expect commercial launch at scale in dense urban environments in 2019. Many of our advanced technologies, including autonomous, present novel issues with which domestic and foreign regulators have only limited experience and will be subject to emerging regulation and evolving regulatory frameworks. Any current or future regulations in these areas could impact whether and how these technologies are designed and integrated into our products, and may ultimately subject us to increased costs and uncertainty. |
| Technology | Relevant, sometimes included | Technology in our products and facilities is included in Climate Change risk assessments on a case by case basis. In 2018, GM conducted a Climate Workshop (Scenario Analysis) using a 2 degree scenario. The time frame of the analysis was out to 2030. The inputs for the analysis included a number of trends and forecasts such as vehicle sales, technology and innovation, policies and regulations, energy, consumer behaviors, etc. One of the key findings are that the world on a 2 degree C path has implications for key drivers of GM's technology that include vehicle fuel efficiency, vehicle-to-vehicle/customer/infrastructure connectivity, and advance vehicle technology. |
| Legal | Relevant, always included | In the current uncertain regulatory framework, environmental liabilities for which we may be responsible and that are not reasonably estimable could be substantial. Alleged violations of safety or emissions standards could result in legal proceedings, the recall of one or more of our products, negotiated remedial actions, fines, restricted product offerings or a combination of any of those items. Any of these actions could have substantial adverse effects on our operations including facility idling, reduced employment, increased costs and loss of revenue. There are several putative class actions pending against GM in federal courts in the U.S. and in the Provincial Courts in Canada alleging that various vehicles sold including model year 2011-2016 Duramax Diesel Chevrolet Silverado and GMC Sierra vehicles, violate federal and state emission standards. GM also faces a series of additional lawsuits based primarily on allegations in the Duramax suit, including putative shareholder class actions claiming violations of federal securities law. The securities and shareholder demand lawsuits have been voluntarily stayed by the plaintiffs. At this stage of these proceedings, we are unable to provide an evaluation of the likelihood that a loss will be incurred or an estimate of the amounts or range of possible loss. |
| Market | Relevant, sometimes included | Marketing of our products is included in Climate Change risk assessments on a case by case basis. In 2018, GM conducted a Climate Workshop (Scenario Analysis) using a 2 degree scenario. The time frame of the analysis was out to 2030. The inputs for the analysis included a number of trends and forecasts such as vehicle sales, technology and innovation, policies and regulations, energy, consumer behaviors, etc. One of the key findings are that the world on a 2 degree C path has implications for key drivers of GM's marketing that include the sharing economy and mobility as a service, fleet turn-over rates, and advance vehicle technology adoption rates, |
| Reputation | Relevant, always included | The costs and effect on our reputation of product safety recalls and alleged defects in products and services could materially adversely affect our business. Government safety standards require manufacturers to remedy certain product safety defects through recall campaigns. Under these standards, we could be subject to civil or criminal penalties or may incur various costs, including significant costs for free repairs. At present, the costs we incur in connection with these recalls typically include the cost of the part being replaced and labor to remove and replace the defective part. The costs to complete a recall or customer satisfaction action could be exacerbated to the extent that such action relates to a global platform. Concerns about the safety of our products, including advanced technologies like autonomous, whether raised internally or by regulators or consumer advocates, and whether or not based on scientific evidence, can result in product delays, recalls, lost sales, governmental investigations, regulatory action, private claims, lawsuits and settlements, and reputational damage. These circumstances can also result in damage to brand image, brand equity and consumer trust in the Company’s products and ability to lead the disruption occurring in the automotive industry. We currently source a variety of systems, components, raw materials and parts, including but not limited to air bag inflators, from third parties. From time to time these items may have performance, quality or reputational issues that could harm our reputation and cause us to incur significant costs. For example, we are currently conducting recalls for certain Takata air bag inflators used in some of our prior model year vehicles. Further recalls, if any, that may be required to re-mediate Takata air bag inflators in our vehicles could have a material impact on our business' Increased scrutiny of compliance with emissions standards may result in changes to standards, including implementation of “real world driving” emissions (RDE) tests, as well as stricter interpretations or redefinition of related standards and more rigorous enforcement. This may lead to increased costs, penalties, and lack of certainty related to product portfolio planning, negative publicity or reputation impact for us. |
| Acute physical | Relevant, sometimes included | Acute physical considerations of climate change in our facilities are included in risk assessments on a case by case basis. An example is at water stressed sites, like San Luis Potosi, Mexico, GM performed a risk assessment of water scarcity and elected to install Zero Liquid Discharge equipment and operate it to mitigate the risk. |
| Chronic physical | Relevant, sometimes included | Chronic physical considerations from climate change in our facilities are included in risk assessments on a case by case basis. An example is at our Detroit Hamtramck a risk assessment was done based on high cost of storm water discharge based on flooding events. Working with the City of Detroit, we installed larger storm ponds and filtration equipment to reuse the stormwater. |
| Upstream | Relevant, sometimes included | Upstream considerations in our direct and indirect operations is included in risk assessments on a case by case basis. Our upstream logistics operations had increased cost and carbon emission risk that drove efforts to reduce cost and GHG emissions in 2017. Based on significant cost and GHG risk in logistics, GM evaluated mitigation using SmartWay in North America to track emissions and share best practices with carriers third party logistic companies and internal company methods to analyze logistics operations and develop and implement cost and carbon savings initiatives. In 2017, we implemented 1,095 initiatives for significant cost and GHG savings. |
| Downstream | Relevant, sometimes included | Downstream considerations in our use of sold products by our customers is included in risk assessments on a case by case basis. In 2018, GM conducted a Climate Workshop (Scenario Analysis) using a 2 degree scenario. The time frame of the analysis was out to 2030. The inputs for the analysis included a number of trends and forecasts such as vehicle sales, technology and innovation, policies and regulations, energy, consumer behaviors, etc. One of the key findings are that the world on a 2 degree C path has implications for the use of sold vehicles by our customers such as vehicle fuel efficiency, electric vehicle miles traveled, vehicle-to-vehicle/customer/infrastructure connectivity, the sharing economy and mobility as a service, fleet turn-over rates and advance vehicle technology adoption rates, energy transition, and policies that put a price/value on carbon. |

## **C2.2d**

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

The Strategic Risk Management process views risks as new opportunities and therefore, our process takes this into account. All risks and opportunities, including climate-related risks and opportunities, are prioritized based on frequency of occurrence, how quickly they may materialize, and on their potential impact to the Company. Impact may be measured by a number of variables including reputational, operational, financial, etc. Risk management tools employeed to help with decision making and mitigation plan development include War-games, Game Theory, and Scenario Planning. For example, the 2 degrees climate scenarios workshop that the SRM team conducted not only focused on future risks, but also resulted in future new business opportunities.

With regard to climate change, risks and opportunities vary from government regulations to supply chain disruption. These are prioritized differently based on frequency of occurrence, time to respond, and impact. For example, government regulations such as new fuel economy/CO2 tailpipe emissions are occurring at a high frequency, but the time to respond is generally adequate to execute mitigation plans that minimize the impact to the Company.

Company level Risks and opportunities are categorized as Tier 1, 2 or 3 based on frequency, how quickly they may materialize, and on their potential impact to the Company. Impact may be measured by variables including reputational, operational, revenue, etc.

- All Tier 1 risks and opportunities have approved plans for mitigation and/or business development, and are reviewed in detail regularly by the ELT and by the Board.

- All Tier 2 risks and opportunities have approved mitigation plans and are reviewed at least once a year by the ELT and by the BOD.

- All Tier 3 risks and opportunities have been fully analyzed, put on a “watch list” and are regularly reviewed by the risk officer and their respective ELT member.

In the short term (0-5 years), GM is responding to climate change in multiple ways. For its operations to reduce physical risk of rising energy prices and take advantage of the opportunity to reduce cost, it has set aggressive energy and GHG intensity reduction targets through 2020. This internal process used is to integrate energy reduction into our business plan. Annually, we develop energy and GHG reduction targets at a global, regional, and facility level and include methods in our annual business planning process which GM calls its Business Plan Deployment (BPD). These methods include behavioral - cold shutdown, energy efficiency - LED lights, HVAC controls, and low carbon solutions - for example use landfill gas to generate electricity. An example of how this process has influenced the business strategy is the development of an ongoing dedicated fund for energy savings projects of $20 million USD and use of energy performance contracting to fund the energy and carbon reduction methods. In 2017, energy and carbon reduction projects resulted in 4.2% carbon reduction on an absolute basis. GM exceeded our 2020 operations carbon reduction goal with 22% on an intensity basis since 2010 and an absolute reduction even though vehicle volume increased by 27%.

GM’s global risk management process includes climate change issues such as policy/regulatory changes and changing consumer behaviors are discussed at our Board of Directors, Executive Operations Committee (highest management committee), Corporate Strategy Committee, and the Product Development Committee.

To achieve our long term (>5 years) carbon reduction plans, we are focusing on our total carbon footprint, including use of sold products (vehicles). For our vehicles we have established and publicly disclosed carbon reduction goals and we have made a commitment to launch 20 new electric vehicles by 2020. Annually, we track our progress to these goals using market sales and measured vehicle emission factors by our Public Policy Group and regional resources. To ensure that we meet these goals on a long term basis, in 2017 we invested $7.3B in research and development activities. This includes strategic planning to develop and bring to market affordable products that incorporate technologies that improve vehicle safety, displace petroleum with biofuels and electricity, increase fuel efficiency, reduce emissions, and provide additional value and benefits to our customers. In keeping with this strategy, we remain committed to bringing more electrified and fuel-efficient options to market. By the end on 2017, GM had over 300,000 vehicles on the road in US with some form of electrification- which includes eAssist, two-mode hybrid, extended-range electric vehicle and all electric vehicle models. These products represent mitigation of climate change risk for our value chain and provide an opportunity to sell low carbon products into the market.

## **C2.3**

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

Yes

## **C2.3a**

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

### **Identifier**

Risk 1

### **Where in the value chain does the risk driver occur?**

Customer

### **Risk type**

Transition risk

### **Primary climate-related risk driver**

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

### **Type of financial impact driver**

Technology: Capital investments in technology development

### **Company- specific description**

CARB's latest requirements include increasing ZEVs offered for sale in CA and ZEV volumes for 2018 model year and later. Quebec plans to adopt ZEV requirements starting with 2018 model year; other jurisdictions may follow. The Clean Air Act permits states with air quality compliance issues to adopt CA emission standards in lieu of federal requirements; 13 states use these standards, 10 of which have adopted ZEV requirements. GM’s cost profile is private but a third-party cost examination of the Chevy Bolt estimates GM loses $7,400 per Bolt EV sold. We intend to mitigate this risk by launching 20 new profitable EVs by 2023 and are working to reduce near-term total enterprise costs associated with the Bolt EV .

### **Time horizon**

Medium-term

### **Likelihood**

Likely

### **Magnitude of impact**

Medium-high

### **Potential financial impact**

30192000

### **Explanation of financial impact**

GM’s cost profile is private but a third-party cost examination of the Chevy Bolt estimates GM loses $7,400 per Bolt EV sold. In 2017, GM produced 40,794 EVs (0.5% of annual sales). As an estimate, if ZEV mandates require GM to produce an additional 10% of EVs, it would amount to an additional 4,080 units or $7,400 times 4,080 = $30M.

### **Management method**

On a long term basis, we intend to mitigate this risk by launching 20 new profitable EVs by 2023. We currently offer seven models in the U.S. featuring some form of electrification and continue to develop plug-in hybrid electric vehicle technology and extended range electric vehicles such as the Chevrolet Volt and Bolt EV. In October 2017 we announced our plans to launch more than 20 new Zero Emission Vehicles (ZEVs) in global markets by 2023, including two in the next 18 months. In the short term we are working to increase battery electric vehicle production at our Orion Assembly in 2017-8 and a significant expansion of our battery lab in Warren, MI, already one of the largest in the world, brings the facility to more than 100,000 sq. ft. that includes new heavy and mild battery abuse test areas.

### **Cost of management**

7300000000

### **Comment**

GM's current amount of research and development cost is $7.3 Billion. The continued development of our EV portfolio rests upon 20 years of electrification knowledge and experience and the investment of billions in research and development.

### **Identifier**

Risk 2

### **Where in the value chain does the risk driver occur?**

Customer

### **Risk type**

Physical risk

### **Primary climate-related risk driver**

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

### **Type of financial impact driver**

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

### **Company- specific description**

Increases in the frequency of drought conditions can further depress water availability for production in water-stressed areas. GM has production facilities in Mexico, an area that was hit hard by drought in 2016-2017, and there is a risk that increases in the frequency of such events could disrupt production due to lack of water availability. Mexico accounts for approximately 7% of GM’s global production.

### **Time horizon**

Short-term

### **Likelihood**

About as likely as not

### **Magnitude of impact**

Medium-high

### **Potential financial impact**

850000000

### **Explanation of financial impact**

Mexico accounts for approximately 7% of GM’s global production. 7% of GM’s sales and revenues = $10.1 billion and a one month disruption due to water scarcity would = $850,000,000.

### **Management method**

GM integrated water management into its annual business planning process and set targets for each facility to reduce water use intensity by 15% by 2020. Reduction methods are implemented at a facility level and include conservation with behavioral activities, improving equipment efficiency to reduce, and reuse. When plants are located in water-stressed areas, special consideration is given to water treatment technologies. A Zero Liquid Discharge (ZLD) system was installed at our San Luis Potisi, Mexico facility that produces vehicles and transmissions and is being operated to reuse water in the process, reduce withdrawal from deep wells, and reduce the risk of lack of water for production while providing an opportunity to continue production without interruption. The installed cost was $12M and ongoing operations are $200k

### **Cost of management**

12200000

### **Comment**

### **Identifier**

Risk 3

### **Where in the value chain does the risk driver occur?**

Customer

### **Risk type**

Transition risk

### **Primary climate-related risk driver**

Market: Changing customer behavior

### **Type of financial impact driver**

Market: Reduced demand for goods and/or services due to shift in consumer preferences

### **Company- specific description**

Changing consumer behavior could weaken the demand for our higher margin full-size pick-up trucks and sport utility vehicles, which could reduce our market share in affected markets, decrease profitability, and have a material adverse effect on our business if we are unable to offer alternatives that are of interest to our customers. (i) Volatility in fuel pricing and tax incentives may affect consumer behavior. As of 2017, carbon-pricing schemes are operating in at least 33 countries and 18 sub-national jurisdictions, covering around 20 percent of global emissions. Though CO2 pricing schemes vary widely around the world, all are intended to encourage consumers to purchase vehicles that emit less carbon or, at a minimum, to help raise public awareness about the importance of CO2 reduction. (ii) There is a risk that there may be less demand for GM's larger, less fuel efficient vehicles. Changing consumer behavior could weaken the demand for our higher margin full-size pick-up trucks and sport utility vehicles, which could reduce our market share in affected markets, decrease profitability, and have a material adverse effect on our business if we are unable to offer alternatives that are of interest to our customers.

### **Time horizon**

Medium-term

### **Likelihood**

More likely than not

### **Magnitude of impact**

Medium

### **Potential financial impact**

128000000

### **Explanation of financial impact**

On a global basis, a decrease in sales due to changing consumer behavior of 1% for example may result in a decrease in earnings before interest and taxes adjusted of $128 million USD

### **Management method**

Continuous innovation and advanced technology development is key to keeping up with changing consumer behavior. One way GM achieves this is through our global network of engineering centers and R&D labs around the world as well as active collaboration with academia, suppliers and start-ups to identify and develop new technologies centered on five strategic areas: 1. Automotive Cleantech that improves fuel economy and decreases mobile emissions through advanced engine and transmission technology, next-generation batteries and electric motors, and power electronics; 2. Connected Vehicles that leverage data, enhance vehicle safety and connect drivers with their digital worlds in a responsible way; 3. Advanced Materials that lead to more fuel-efficient vehicles through reduced mass; Sensors, Processors and Memory that can accelerate the advent of the autonomous vehicle; 4. Manufacturing Technologies that yield cost and quality improvements while decreasing our use of resources and materials. We currently offer 7 vehicle models in US with some form of electrification. In 2017 we offered the Chevrolet Bolt, a battery electric vehicle and we plan to continue to invest heavily to support the expansion of our electric vehicle offerings and in-house development and manufacturing capabilities of advanced batteries, electric motors and power control systems.

### **Cost of management**

7300000000

### **Comment**

In 2017, GM invested approximately $7.3 billion in research and development activities for vehicles.

## **C2.4**

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

Yes

## **C2.4a**

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

### **Identifier**

Opp1

### **Where in the value chain does the opportunity occur?**

Customer

### **Opportunity type**

Products and services

### **Primary climate-related opportunity driver**

Development and/or expansion of low emission goods and services

### **Type of financial impact driver**

Increased revenue through demand for lower emissions products and services

### **Company- specific description**

Autonomous electric vehicles offer GM a significant business opportunity to combat climate change. AV systems integrate more seamlessly with EVs than vehicles with conventional internal combustion engines. All-electric AVs also will help accelerate more widespread adoption of electric propulsion technologies. We see autonomous technology leading toward a future of zero congestion, zero emissions and zero crashes, since more than 90% of crashes are caused by driver error, according to the National Highway Traffic Safety Administration (NHTSA).

### **Time horizon**

Short-term

### **Likelihood**

Likely

### **Magnitude of impact**

Medium-high

### **Potential financial impact**

2500000000

### **Explanation of financial impact**

Assuming AV is a trillion dollar global market from third party sources and GM’s global market share is 10.2%, we calculated our financial opportunity within the AV market as $100B. Today, the market is approximately $5B. We do not publicly report on the financial positive implications at this time, but we did publicly report that SoftBank made a $2.5B investment in Cruise, which we are including as our financial positive implications for this year.

### **Strategy to realize opportunity**

We are actively testing autonomous vehicles on public roads in San Francisco, California; Scottsdale, Arizona; and Warren, Michigan. Additionally, we plan to develop an integrated network of on-demand autonomous vehicles in the U.S. We are growing a fleet of test vehicles that will accumulate a significant number of miles in 2018, and based on our current rate of change we expect commercial launch at scale in dense urban environments in 2019.

### **Cost to realize opportunity**

581000000

### **Comment**

Investment for Cruise.

### **Identifier**

Opp2

### **Where in the value chain does the opportunity occur?**

Direct operations

### **Opportunity type**

Resource efficiency

### **Primary climate-related opportunity driver**

Move to more efficient buildings

### **Type of financial impact driver**

Reduced operating costs (e.g., through efficiency gains and cost reductions)

### **Company- specific description**

Energy Efficiency projects implemented in our manufacturing operations in South Korea results in the opportunity to sell carbon credits into the Emission Trading Scheme in South Korea. Implementing energy efficiency in GM operations in Korea began with an energy treasure hunt in early 2017 and ended with the implementation of various initiatives - LED lights, compressed air and building management. These initiatives represents an opportunity for us to reduce our operational costs and to sell carbon credits into the Korean Carbon Emission Trading Scheme.

### **Time horizon**

Current

### **Likelihood**

Virtually certain

### **Magnitude of impact**

Medium-low

### **Potential financial impact**

2100000

### **Explanation of financial impact**

Cost savings resulted from reduced use of electricity and natural gas in GM Korea operations from the implementation of energy conservation and efficiency measures - LED lights, compressed air and building management, and other efficiency projects. In 2018 we expect to receive $8M from trading carbon credits into the ETS, partially as a result of implementing energy conservation measures.

### **Strategy to realize opportunity**

GM identifies energy and carbon savings opportunities using a standardized Energy Treasure Hunt process as documented by USEPA Energy Star. Action plans were developed to implement energy conservation measures and implemented to provide cost savings and reduction of carbon emissions at GM's Bupyeong, South Korea site that manufacturers vehicles and parts. The process utilized our Operational Excellence process to track progress and measure success. The cost to implement energy conservation measures was $1.3M.

### **Cost to realize opportunity**

1313000

### **Comment**

### **Identifier**

Opp3

### **Where in the value chain does the opportunity occur?**

Direct operations

### **Opportunity type**

Resource efficiency

### **Primary climate-related opportunity driver**

Reduced water usage and consumption

### **Type of financial impact driver**

Increased production capacity, resulting in increased revenues

### **Company- specific description**

As extreme drought conditions occur, GM facilities in Mexico with water reuse systems are resilient and can continue to operate. Increases in the frequency of drought conditions can cause disruptions to GM production in our highest water use and production critical process of painting vehicles, due to water stress. Proper mitigation using water conservation and water reuse allows production to continue without added water stress on local water systems. GM’s water management approach at production facilities located in water stressed areas offers an opportunity to continue production without disruptions due to lack of water for people and critical paint shop production. In our San Luis Potosi Assembly plant in Mexico, GM uses a Zero Liquid Discharge system to minimize the reliance on well water withdrawal.

### **Time horizon**

Current

### **Likelihood**

Likely

### **Magnitude of impact**

Medium

### **Potential financial impact**

75000000

### **Explanation of financial impact**

Estimated financial implications As Mexico accounts for about 7% of total global production and a one month disruption of GM’s production could result in loss of $75 Million in net income (EBITA), the opportunity to GM is the continuance of production avoiding a potential loss of $75 Million USD.

### **Strategy to realize opportunity**

Plants located in water-stressed areas, such as Mexico, are given special consideration by GM for water treatment technologies. Minimizing water use and withdrawals from shared water sources allows the GM plant to minimize the stress it is placing on local water sources, which in turn helps lessen the risk that, in times of drought, local water sources will have been depleted beyond capacity potentially causing production disruption. The invested amount for ZLD was $12M with ongoing operations cost of $200k/year An example of the engineering method used is in our San Luis Potosi plant, where a closed loop water system (Zero Liquid Discharge) was engineered to reuse 90% of the facility’s wastewater for the next cycle of plant operations and the remaining 10% is sent to an onsite pond where it evaporates. The plant has reduced its water withdrawals by 90% by reusing wastewater. The plant also reduced its water intensity by 10% since opening using BPD management methods and remains our best operating plant for water efficiency.

### **Cost to realize opportunity**

12200000

### **Comment**

## **C2.5**

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

|  |  |  |
| --- | --- | --- |
|  | **Impact** | **Description** |
| Products and services | Impacted for some suppliers, facilities, or product lines | Driven by climate change and other related factors such as air quality and energy security, risks to our business include GHG and fuel consumption standards have become more stringent to meet policy priorities. We anticipate that the number and stringency of these regulations, and the related costs and changes to our product portfolio, may increase significantly in the future. These government regulatory requirements could significantly affect our plans for global product development and may result in substantial costs, including civil or criminal penalties. In addition, an evolving but unharmonized regulatory framework may limit or dictate the types of vehicles we sell and where we sell them, which can affect revenue. Opportunities include the planned launch of 20 new EVs by 2023 and are working to costs associated with EVs. The development of new technologies affects all aspects of our business from vehicle development, supply chain, marketing, and operations. The anticipated lack of EV charging infrastructure is a risk to long-term EV sales. Therefore, we are engaged with the electric utility industry, utility regulators, states, EV charging service providers and numerous EV-related infrastructure efforts, to pave the way for sustained EV charging infrastructure investments. In the past year, GM has supported over 20 utilities in program filings, testified at more than 10 state/federal legislative and regulatory hearings and reviewed state plans. We’ve initiated a national collaborative stakeholder effort to drive available state funding towards EV infrastructure, and funded another collaborative industry effort to educate state utility regulators on the benefits of EVs and the need for utilities to prepare for this “smart” load. It’s now expected that over the next several years, we will see major EV infrastructure investments across the U.S., including a combined $260 million or more in state-directed funds, an additional $500 million investment in a national infrastructure program and at least $300 million in utility investments, based in part on precedent-setting approvals by utility regulators. Consumers want to know there is enough EV charging infrastructure to ensure they can drive anywhere they need to go—and we are seeing the critical building blocks for a scalable and sustainable infrastructure solution coming together. |
| Supply chain and/or value chain | Impacted for some suppliers, facilities, or product lines | Driven by climate change and other related factors such as air quality and energy security, risks to our business include GHG and fuel consumption standards have become more stringent to meet policy priorities. Suppliers play a key role in helping GM mitigate risks and take advantage of new opportunities. GM is planning to launch 20 new EVs by 2023 and are working to reduce near-term costs associated with EVs. Suppliers develop or assist in the development of new technologies which affect all aspects of our business from vehicle development, supply chain, marketing, and operations helping to meet regulations and changing consumer preferences. Suppliers such as LG Chem and LG Electronics, Inc., helped integrate a 60-kWh, lithium-ion battery pack in the award-winning Chevrolet Bolt EV, while Magna Exteriors developed a multiaxial laser cutting and welding process on painted thermoplastic, enabling lighter weight design of the 2017 Chevrolet Camaro XL1 fascia which helps with fuel efficiency and we believe consumer appeal. |
| Adaptation and mitigation activities | Impacted for some suppliers, facilities, or product lines | Droughts have been drier and lasting longer in recent years thanks in part to climate change. GM experiences risk to the continuance of manufacturing operations at our San Luis, Mexico Assembly and Transmission facilities due to water stress brought on by drought. Mitigation efforts include integrating water conservation into our business plan and installation and operation of Zero Liquid Discharge technology equipment to reduce stress on the non-renewable wells. Manufacturing vehicles in the water stressed area of San Luis Potosi. Mexico provides GM with an opportunity to show our leadership in water reduction, recycle, and reuse. Providing jobs in a water stressed area while having minimum impact on the aquifer provides positive local, regional, and global recognition of the extreme efforts taken by GM to protect and conserve water, one of our most precious and important natural resources. |
| Investment in R&D | Impacted for some suppliers, facilities, or product lines | Costs for research, manufacturing engineering, product engineering and design and development activities relate primarily to developing new products or services or improving existing products or services including activities related to vehicle and greenhouse gas (GHG) emissions control, improved fuel economy, electrification, autonomous vehicles, the safety of drivers and passengers, and urban mobility. Research and development expenses were $7.3 billion in 2017. |
| Operations | Impacted | GM has integrated energy and carbon management into our business plan for every major operating facility globally. Additionally, to meet our company goals for energy and carbon intensity reduction, each of approximately 120 facilities has a sufficiency plan to implement efficiency projects to meet their goal. The impact to GM in 2017 was a savings of $22.4 M USD in operating cost. |
| Other, please specify | Please select |  |

## **C2.6**

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

|  |  |  |
| --- | --- | --- |
|  | **Relevance** | **Description** |
| Revenues | Impacted for some suppliers, facilities, or product lines | GM applied for and received $5.6 M USD in utility incentives as part of our $41M spend for energy efficiency project investment. Utility incentives are treated as revenue and included in our financial planning. |
| Operating costs | Impacted | GM invested $23M of operating expense in 2017 in energy savings and carbon reduction projects to save $12.6 M in operating cost at our approximately 120 manufacturing and other facilities globally . |
| Capital expenditures / capital allocation | Impacted | GM invested $18M of capital expenditures in 2017 in energy savings and carbon reduction projects to save $9.8 M in operating cost at our approximately 120 manufacturing and other facilities globally . |
| Acquisitions and divestments | Impacted for some suppliers, facilities, or product lines | GM’s vision of a future with zero crashes, zero emissions and zero congestion includes autonomous vehicles (AV) and advanced mobility. As part of that vision, GM acquired Cruise in 2016 for $581M and invested $500M in Lyft to enhance our participation in AV and mobility. |
| Access to capital | Not impacted | We have not experienced an impact on access to capital based on Climate Change risks and opportunities. |
| Assets | Not impacted | We have not experienced an impact on Assets based on Climate Change risks and opportunities. |
| Liabilities | Not impacted | We have not experienced an impact on Liabilities based on Climate Change risks and opportunities. |
| Other | Please select |  |

## **C3. Business Strategy**

## **C3.1**

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

Yes

## **C3.1a**

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

Yes, qualitative

## **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.**

Yes

## **C3.1c**

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

i. How has the business strategy been influenced? Climate change (CC) has influenced our short- and long-term business strategy. We recognize that we need to find lower carbon solutions for our products and operations and have publicly stated that we see an economic opportunity by lowering our carbon footprint. Our business strategy includes five key priorities, namely 1) Earn Customers for Life; 2) Grow our Brands; 3) Lead in Technology & Innovation; 4) Drive Core Efficiencies; and 5) Build a Culture to Win.

In the short term (0-5 years), GM is responding to CC by setting aggressive energy and GHG intensity reduction targets through 2020. Our 2020 GHG target is to reduce GHG intensity by 20% from 2010.

The internal process used is to integrate energy reduction into our business plan. Annually, we develop energy and GHG reduction targets at a global, regional, and facility level and include methods in our annual business planning process which GM calls its Business Plan Deployment (BPD). These methods include behavioral - cold shutdown, energy efficiency - LED lights, HVAC controls, and low carbon solutions - for example use landfill gas to generate electricity. Each month data is collected on energy use and carbon emissions performance which is compared, at each site, to the target and if it is not met, countermeasures are developed to meet the targets. An example of how this process has influenced the business strategy is the development of an ongoing dedicated fund for energy savings projects of $20 million USD and use of energy performance contracting to fund the energy and carbon reduction methods. In 2017, energy and carbon reduction projects resulted in 4.2% carbon reduction on an absolute basis.

GM’s global risk management process includes CC issues such as policy/regulatory changes and changing consumer behaviors are discussed at our Board of Directors, Executive Operations Committee (highest management committee), Corporate Strategy Committee, and the Product Development Committee.

To achieve our long term (>5 years) carbon reduction plans, we are focusing on our total carbon footprint, including use of sold products (vehicles). For our vehicles we have established and publicly disclosed carbon reduction goals. Annually, we track our progress to these goals using market sales and measured vehicle emission factors by our Public Policy Group and regional resources. To ensure that we meet these goals on a long term basis, in 2017 we invested $7.3B in research and development activities. This includes strategic planning to develop and bring to market affordable products that incorporate technologies that improve vehicle safety, displace petroleum with biofuels and electricity, increase fuel efficiency, reduce emissions, and provide additional value and benefits to our customers. In keeping with this strategy, we remain committed to bringing more electrified and fuel-efficient options to market. By the end on 2017, GM had over 300,000 vehicles on the road in US with some form of electrification- which includes eAssist, two-mode hybrid, extended-range electric vehicle and all electric vehicle models.

ii. What aspects of climate change have influenced the strategy?

Events such as extreme weather, national, state/provincial and/or policy changes to address CC including new and proposed fuel economy/CO2 emission standards around the world as well as adaption purposes for consumer behavior have influenced the strategy.

iii. The most important components of the short term strategy that have been influenced by CC:

With energy management integrated into our BPD, we’re engaging employees in our efforts to reduce energy and carbon to increase awareness about climate change. We have a dedicated fund for energy and carbon reduction projects which has enabled us to further reduce energy and carbon in our facilities thanks to employee suggestions. An example of this is the implementation of team member Energy Observation Tours, which, similar to safety tours, help to find and implement energy savings opportunities.

iv. The most important components of the long term strategy that have been influenced by CC: We have an aggressive focus on advanced propulsion technologies that will benefit customers and the environment as we strive toward a zero emission future. We focus on inventions that make our vehicles more sustainable. We operate global engineering centers and R&D labs and collaborate with academia, suppliers and start-up companies to identify, develop and implement new technologies as well as new business models that will provide more value to our customers as well as use less materials, require less energy to build, and emit fewer GHG emissions.

v. How this is gaining you strategic advantage over your competitors?

Our R&D progress is significant. We’ve received more than 700 patents in fuel cell technologies since 2002--more than any other company-- and we lead all companies in terms of most U.S. clean-energy patents granted since 2002, according to Clean Energy Patent Growth Index of U.S. Patents. This effort was key to developing the Chevrolet Volt. As a result, the Chevrolet Volt is one of the most award winning vehicles on the road today and has been the best-selling plug-in vehicle in the US through 2017.

vi. What have been the most substantial business decisions made?

The most substantial business decision made for GM was our long-term strategic decision to be a leader in electrified, connected, shared, and autonomous vehicles.

The most substantial aspect of climate change that has influenced this decision was the increasing concentration of CO2e ppm concentration in Earth’s atmosphere which is leading countries around the world to enact increasingly more stringent fuel efficiency and CO2 emission regulations and cities to restrict or prohibit the use of some vehicles in city centers. CC is influencing consumer behavior and governmental policies / regulations that affect our products, manufacturing facilities, and business models. Our strategy enables us to look for opportunities in these changing preferences and policies.

GM made the following key decisions in 2017 - Operate in a more transparent manner and actively request external input from stakeholders, -Nine manufacturing commitments with 2020 targets including RE-100 and carbon reduction from our facilities of 20% from a 2010 baseline which was achieved, -Accelerate & expand the electrification of GM’s global fleet to take advantage of changing consumer behaviors and preferences, -Execute a light-weighting initiative to make all of our vehicle products more fuel efficient, -continue to invest in a new car and ride-sharing brand, MAVEN, - Continue to invest in Cruise Automation, a leader in autonomous vehicle technology, and - Provide access to registered software developers into GM OnStar’s proprietary application program interface to take advantage of changing consumer behaviors with their permission.

## **C3.1d**

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

|  |  |
| --- | --- |
| **Climate-related scenarios** | **Details** |
| 2DS | In 2018, GM conducted a Climate Workshop (Scenario Analysis) using a 2 degree scenario. The time frame of the analysis was out to 2030. The inputs for the analysis included a number of trends and forecasts such as vehicle sales, technology and innovation, policies and regulations, energy, consumer behaviors, etc. (i) The key assumption is that the world is on a 2 degree C path which has implications for key drivers of our business such as vehicle fuel efficiency and GHG emission standards; electric vehicle miles traveled, vehicle-to-vehicle/customer/infrastructure connectivity, the sharing economy and mobility as a service, fleet turn-over rates and advance vehicle technology adoption rates, energy transition, and policies that put a price/value on carbon. (ii) Analytical Methods – axes of uncertainty were evaluated and two were selected to develop and analyze different worlds in which GM could be operating in the future. A cross-functional team from risk management, engineering, public policy, legal, and sustainability are currently still reviewing and analyzing the results of the workshop. |

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

### **(C-AC3.1e/C-CE3.1e/C-CH3.1e/C-CO3.1e/C-EU3.1e/C-FB3.1e/C-MM3.1e/C-OG3.1e/C-PF3.1e/C-ST3.1e/C-TO3.1e/C-TS3.1e) Disclose details of your organization’s low-carbon transition plan.**

GM's low-carbon transition plan is through renewable energy and vehicle electrification. Our renewable electricity commitment of 100% use in our operations by 2050 (RE-100) will provide for near zero of GHG in our scope 2 emissions. Our four tier approach includes - increasing energy efficiency in our operations, sourcing renewable electricity, addressing intermittent supply through storage, and influencing policy to drive scale. We anticipate being at 20% by the end of 2018.

Additionally, working with governments and utilities for expanded use of renewable electricity globally will greatly reduce carbon in our supply chain (#2 scope 3 GHG) and reduce our #1 scope 3 emission from use of our sold products, including ride share activities. The fourth tier of our RE-100 strategy is to drive scale, globally, for the use of renewable electricity to enhance decarbonization.

Another element of our low-carbon transition plan is reducing operational waste to further reduce our scope 3 emissions. Using EPA WARM model, GM tracks progress of carbon reduction through waste reuse, recycle, and reduction of landfill materials. In 2017, GM avoided 7.7 Million metric tons of CO2e emissions from landfill-free activities - reuse, re-purpose, and/or recycling our wastes. The amount of GHG avoided is more than our combined scope 1 and 2 emissions from our operations. Additionally, we have a goal to have 150 landfill-free sites by 2020 and are on a pathway to meet the goal with 142 in 2017.

Lastly, to address scope 3 emissions from the use of our sold products, we are committed to an all-electric future with zero emissions. To achieve this long-term goal, GM currently sells 13 models globally with some form of electrification and have announced that we will launch 20 new battery electric vehicles by 2023.

## **C4. Targets and performance**

## **C4.1**

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

Intensity target

## **C4.1b**

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

### **Target reference number**

Int 1

### **Scope**

Scope 1 +2 (market-based)

### **% emissions in Scope**

100

### **% reduction from baseline year**

20

### **Metric**

Metric tons CO2e per vehicle produced\*

### **Base year**

2010

### **Start year**

2010

### **Normalized baseline year emissions covered by target (metric tons CO2e)**

6173746

### **Target year**

2020

### **Is this a science-based target?**

No, but we anticipate setting one in the next 2 years

### **% achieved (emissions)**

100

### **Target status**

Underway

### **Please explain**

General Motors met our GHG target in 2017 with 22% intensity reduction compared to 2020 target of 20%. Even with a 27% increase in vehicle volume produced, we were able to reduce absolute emissions. We are in the process of evaluating new targets. Energy efficiency and our RE-100 progress were key success factors in achieving our carbon reduction goal 3 years early.

### **% change anticipated in absolute Scope 1+2 emissions**

-0.4

### **% change anticipated in absolute Scope 3 emissions**

-3.7

## **C4.2**

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

### **Target**

Renewable energy consumption

### **KPI – Metric numerator**

100% renewable electricity use in all GM operations by 2050 (RE-100)

### **KPI – Metric denominator (intensity targets only)**

Not Applicable

### **Base year**

2016

### **Start year**

2017

### **Target year**

2050

### **KPI in baseline year**

3

### **KPI in target year**

100

### **% achieved in reporting year**

7

### **Target Status**

Underway

### **Please explain**

GM announced a renewable energy goal in September 2016 to use 100% renewable electricity by 2050 in our global facilities operations. Our four tier approach includes - increasing energy efficiency in our operations, sourcing renewable electricity, addressing intermittent supply through storage, and influencing policy to drive scale. We anticipate being at 20% by the end of 2018.

### **Part of emissions target**

RE-100 compliments our Scope 2 portion of the GHG target for operations.

### **Is this target part of an overarching initiative?**

RE100

### **Target**

Energy usage

### **KPI – Metric numerator**

Energy use in GM operations globally, including manufacturing and non-manufacturing.

### **KPI – Metric denominator (intensity targets only)**

Vehicles produced

### **Base year**

2010

### **Start year**

2010

### **Target year**

2020

### **KPI in baseline year**

0

### **KPI in target year**

20

### **% achieved in reporting year**

76

### **Target Status**

Underway

### **Please explain**

Energy efficiency and conservation is integrated into our manufacturing business plan within the continuous improvement element.

### **Part of emissions target**

Our energy intensity reduction target is a key success factor in GHG reduction goal as is a major factor in our RE-100 goal.

### **Is this target part of an overarching initiative?**

RE100

### **Target**

Waste

### **KPI – Metric numerator**

Kilograms of Waste

### **KPI – Metric denominator (intensity targets only)**

Vehicles produced

### **Base year**

2010

### **Start year**

2010

### **Target year**

2020

### **KPI in baseline year**

307

### **KPI in target year**

186

### **% achieved in reporting year**

63.5

### **Target Status**

Underway

### **Please explain**

Reducing waste in GM's operations provides an important part of our low-carbon transition plan. Using EPA WARM model, GM tracks progress of carbon reduction through waste reuse, recycle, and reduction of landfill materials. In 2017, GM avoided 7.7 Million metric tons of CO2e emissions from landfill-free activities which is more than our combined annual scope 1 and 2 emissions. Additionally, we have a goal to have 150 landfill-free sites by 2020 and are on a pathway to meet the goal with 142 in 2017.

### **Part of emissions target**

Although our waste and landfill free goals have a positive impact on our scope 3 metrics, they are not currently part of a target

### **Is this target part of an overarching initiative?**

Other, please specify (Low-carbon transition plan)

## **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 projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.**

|  |  |  |
| --- | --- | --- |
|  | **Number of projects** | **Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked \*)** |
| Under investigation | 450 | 370000 |
| To be implemented\* | 400 | 330000 |
| Implementation commenced\* | 90 | 75000 |
| Implemented\* | 310 | 521892 |
| Not to be implemented | 50 | 41000 |

## **C4.3b**

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

### **Activity type**

Energy efficiency: Building services

### **Description of activity**

Other, please specify (LED lighting, building controls, HVAC)

### **Estimated annual CO2e savings (metric tonnes CO2e)**

150611

### **Scope**

Scope 1

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

### **Annual monetary savings (unit currency – as specified in CC0.4)**

11434000

### **Investment required (unit currency – as specified in CC0.4)**

20794200

### **Payback period**

1-3 years

### **Estimated lifetime of the initiative**

6-10 years

### **Comment**

GM has a dedicated fund for energy savings projects and energy management is integrated into our business plan with daily and monthly scorecards and countermeasures required if targets are not met.

### **Activity type**

Energy efficiency: Building fabric

### **Description of activity**

Other, please specify (Windows, seal openings, & repair doors)

### **Estimated annual CO2e savings (metric tonnes CO2e)**

40338

### **Scope**

Scope 1

### **Voluntary/Mandatory**

Voluntary

### **Annual monetary savings (unit currency – as specified in CC0.4)**

1921000

### **Investment required (unit currency – as specified in CC0.4)**

2983000

### **Payback period**

1-3 years

### **Estimated lifetime of the initiative**

6-10 years

### **Comment**

GM has a dedicated fund for energy savings projects and energy management is integrated into our business plan with daily and monthly scorecards and countermeasures required if targets are not met.

### **Activity type**

Energy efficiency: Processes

### **Description of activity**

Process optimization

### **Estimated annual CO2e savings (metric tonnes CO2e)**

64850

### **Scope**

Scope 1

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

### **Annual monetary savings (unit currency – as specified in CC0.4)**

9046000

### **Investment required (unit currency – as specified in CC0.4)**

17152000

### **Payback period**

1-3 years

### **Estimated lifetime of the initiative**

3-5 years

### **Comment**

GM has a dedicated fund for energy savings projects and energy management is integrated into our business plan with daily and monthly scorecards and countermeasures required if targets are not met.

### **Activity type**

Other, please specify (Low carbon product to market)

### **Description of activity**

<Not Applicable>

### **Estimated annual CO2e savings (metric tonnes CO2e)**

39670

### **Scope**

Scope 3

### **Voluntary/Mandatory**

Voluntary

### **Annual monetary savings (unit currency – as specified in CC0.4)**

0

### **Investment required (unit currency – as specified in CC0.4)**

784000000

### **Payback period**

>25 years

### **Estimated lifetime of the initiative**

6-10 years

### **Comment**

GM produces low-carbon electrified vehicles, Volt and Bolt, that have lower carbon emissions than other similar sized vehicles. In 2017, GM produced 51,690 Volts and Bolts and provided an annual savings of 39,670 tons or life cycle savings of 396,700 metric tons CO2e for our Scope 3 GHG emissions.

### **Activity type**

Low-carbon energy purchase

### **Description of activity**

Other, please specify (Wind PPA)

### **Estimated annual CO2e savings (metric tonnes CO2e)**

146250

### **Scope**

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

### **Annual monetary savings (unit currency – as specified in CC0.4)**

0

### **Investment required (unit currency – as specified in CC0.4)**

0

### **Payback period**

>25 years

### **Estimated lifetime of the initiative**

11-15 years

### **Comment**

Wind PPA involves no investment.

### **Activity type**

Other, please specify (Logistics GHG reduction)

### **Description of activity**

<Not Applicable>

### **Estimated annual CO2e savings (metric tonnes CO2e)**

80173

### **Scope**

Scope 3

### **Voluntary/Mandatory**

Voluntary

### **Annual monetary savings (unit currency – as specified in CC0.4)**

136874000

### **Investment required (unit currency – as specified in CC0.4)**

0

### **Payback period**

<1 year

### **Estimated lifetime of the initiative**

1-2 years

### **Comment**

GM uses SmartWay in North America to track emissions and share best practices with carriers. Additionally, we use third party logistic companies and internal company methods to analyze logistics operations and develop and implement cost and carbon savings initiatives. In 2017, we implemented 1,095 initiatives for significant cost and GHG savings.

## **C4.3c**

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

|  |  |
| --- | --- |
| **Method** | **Comment** |
| Dedicated budget for energy efficiency | GM uses a dedicated budget for energy efficiency projects in operations. In 2017, we dedicated and spent $21M USD with 1.7 year payback. |
| Employee engagement | Energy management and carbon reduction is integrated into our business plan which engages employees at all levels of the organization. |
| Internal price on carbon | GM has operations in countries with carbon trading schemes, e.g. South Korea, where we have realized real savings from energy efficiency with sales of credits into the market to fund energy efficiency projects. Our internal price in this instance was $25 per ton. |

## **C4.5**

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

Yes

## **C4.5a**

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

### **Level of aggregation**

Group of products

### **Description of product/Group of products**

Electric vehicles and extended range vehicles sold globally with lower emissions than comparable vehicles available for sale provide our customers GHG reduction opportunities.

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

Low-carbon product and avoided emissions

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

Other, please specify (US EPA www.fueleconomy.gov)

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

0.5

### **Comment**

GM produces Electric vehicles and extended range vehicles sold globally (Bolt and Volt) with lower emissions than comparable internal combustion vehicles sold. Comparing similar vehicles for sale, using US EPA fuel economy comparison at www.fueleconomy.gov GM's sales of Volt and Bolt vehicles avoids 39,670 metric tons per year GHG.

## **C5. Emissions methodology**

## **C5.1**

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

### **Scope 1**

### **Base year start**

janvier 1 2010

### **Base year end**

décembre 31 2010

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

1902196

### **Comment**

Baseline restated in 2017 for 2010 due to significant divestiture of assets in Europe, India, and Africa.

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

### **Base year start**

janvier 1 2010

### **Base year end**

décembre 31 2010

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

4271550

### **Comment**

Baseline restated in 2017 for 2010 due to significant divestiture of assets in Europe, India, and Africa.

### **Scope 2 (market-based)**

### **Base year start**

janvier 1 2010

### **Base year end**

décembre 31 2010

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

4271550

### **Comment**

Baseline restated in 2017 for 2010 due to significant divestiture of assets in Europe, India, and Africa.

## **C5.2**

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

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

US EPA Mandatory Greenhouse Gas Reporting Rule

## **C6. Emissions data**

## **C6.1**

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

### **Row 1**

### **Gross global Scope 1 emissions (metric tons CO2e)**

1848804

### **End-year of reporting period**

<Not Applicable>

### **Comment**

Based on GHG Protocol, 2017 emissions were calculated without divested assets in Europe, India, and Africa and baseline and each year is being restated.

### **Row 2**

### **Gross global Scope 1 emissions (metric tons CO2e)**

1815001

### **End-year of reporting period**

2016

### **Comment**

Based on GHG Protocol, 2016 emissions were calculated without divested assets from 2017 in Europe, India, and Africa and are being restated.

### **Row 3**

### **Gross global Scope 1 emissions (metric tons CO2e)**

1863495

### **End-year of reporting period**

2015

### **Comment**

Based on GHG Protocol, 2015 emissions were calculated without divested assets from 2017 in Europe, India, and Africa and are being restated.

## **C6.2**

### **(C6.2) Describe your organization’s approach to reporting Scope 2 emissions.**

### **Row 1**

### **​Scope 2, location-based​**

We are reporting a Scope 2, location-based figure

### **Scope 2, market-based**

We are reporting a Scope 2, market-based figure

### **Comment**

Based on GM's RE-100 commitment, we chose to report market based scope 2 GHG.

## **C6.3**

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

### **Row 1**

### **Scope 2, location-based**

4572734

### **Scope 2, market-based (if applicable)**

4302887

### **End-year of reporting period**

<Not Applicable>

### **Comment**

Based on GHG Protocol, 2017 emissions were calculated without divested assets in Europe, India, and Africa and baseline and each year is being restated.

### **Row 2**

### **Scope 2, location-based**

5165683

### **Scope 2, market-based (if applicable)**

5095809

### **End-year of reporting period**

2016

### **Comment**

Based on GHG Protocol, 2016 emissions were calculated without divested assets from 2017 in Europe, India, and Africa and are being restated.

### **Row 3**

### **Scope 2, location-based**

4859274

### **Scope 2, market-based (if applicable)**

4763994

### **End-year of reporting period**

2015

### **Comment**

Based on GHG Protocol, 2015 emissions were calculated without divested assets from 2017 in Europe, India, and Africa and are being restated.

## **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**

Scope 1 and 2 GHG emissions from small insignificant facilities, remote offices...

### **Relevance of Scope 1 emissions from this source**

Emissions are not relevant

### **Relevance of location-based Scope 2 emissions from this source**

Emissions are not relevant

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

Emissions are not relevant

### **Explain why the source is excluded**

The GHG emissions from these small facilities are insignificant compared to major operations and non-manufacturing facilities tracked and reported.

## **C6.5**

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

### **Purchased goods and services**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

46174073

### **Emissions calculation methodology**

Following the GHG Protocol, this Supply Chain analysis is “cradle-to-gate” for emissions associated with the value chain from material extraction through manufacturing. The use and disposal phases of the product are omitted in this case. Using annual spend provided by General Motors as the Company’s activity data combined with emissions factors from the Climate Earth’s Environmental Database, the core of which is the USEPA Environmental Extended Input Output database (USEEIO v1.1) which provides industry average cradle-to-gate emissions factors for economic sectors. Due to the complexities of large supply chains, the WRI Corporate Value Chain Accounting and Reporting Standard (WRI Scope 3 Standard) specifically permits the use of industry average emissions factors combined with direct company activity data. General Motors has provided complete direct spend activity data for the Company for the reporting year. The methodology employed for these calculations conforms to the WRI Corporate Value Chain (Scope 3) Accounting and Reporting Standard. The model provides tier analysis and industry analysis to provide strategic planning to reduce life cycle GHG emissions for auto parts. The majority of GHG is in tiers 2-6 and in electric and steel industries.

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

50

### **Explanation**

Spend data is a key component of the economic input output analysis and is derived from supplier spend at a manufacturing country level for increased granularity. This is extremely important for water life cycle analysis since location is important for water security. GM uses WRI protocol using life cycle detailed analysis for auto parts for company owned operations. As a calibration method, CDP Supply Chain tier 1 data is compared to improve accuracy. This data has been verified by a 3rd party in 2017.

### **Capital goods**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

4596326

### **Emissions calculation methodology**

Following the GHG Protocol, this Supply Chain analysis is “cradle-to-gate” for emissions associated with the value chain from material extraction through manufacturing. The use and disposal phases of the product are omitted in this case. Using annual spend provided by General Motors as the Company’s activity data combined with emissions factors from the Climate Earth’s Environmental Database, the core of which is the USEPA Environmental Extended Input Output database (USEEIO v1.1) which provides industry average cradle-to-gate emissions factors for economic sectors. Due to the complexities of large supply chains, the WRI Corporate Value Chain Accounting and Reporting Standard (WRI Scope 3 Standard) specifically permits the use of industry average emissions factors combined with direct company activity data. General Motors has provided complete direct spend activity data for the Company for the reporting year. The methodology employed for these calculations conforms to the WRI Corporate Value Chain (Scope 3) Accounting and Reporting Standard. The model provides tier analysis and industry analysis to provide strategic planning to reduce life cycle GHG emissions for auto parts.

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

50

### **Explanation**

Spend data is a key component of the economic input output analysis and is derived from supplier spend at a manufacturing country level for increased granularity. GM uses WRI protocol using life cycle detailed analysis for auto parts for company owned operations. This data has been verified by a 3rd party in 2017.

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

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

354560

### **Emissions calculation methodology**

Using Australia's National Greenhouse Accounts (NGERS) factors 2017, natural gas fugitive emissions of GHG not included in Scope 1 or 2 were estimated globally based on scope 1 use. USEIA estimates electric losses and the factor was applied globally using scope 2 emissions to estimate fugitive electric GHG not accounted for in scope 2 calculations.

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

50

### **Explanation**

NGERS and USEIA factors account for half of the calculation; whereas, actual data from scope 1 and 2 comprise the remaining portion of data. This data has been verified by a 3rd party in 2017. Based on the methodology used, the value is 6% and exceeds the 5% threshold of relevancy established compared to the total of Scope 1 and 2 emissions and therefore determined to be relevant. Reduction of Scope 1 and 2 reduces this scope 3 emission.

### **Upstream transportation and distribution**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

3029058

### **Emissions calculation methodology**

GM is a member of EPA SmartWay and used their methodology to obtain GHG emissions, based on truck distances and fuel efficiency according to GHG Protocol for GM's North America parts delivery from third party over the road logistics providers. Ocean emissions intensity was evaluated using a major supplier's carbon accounting and extrapolating using revenue intensity. Rail and Air emissions for all global upstream transportation GHG were estimated using CDP Analytics for similar companies multiplied by revenue spend. Truck emissions for rest of world were calculated using emission factors from EPA SmartWay.

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

50

### **Explanation**

SmartWay provides data from carriers using fuel use and distances traveled. Revenue spend is from suppliers and CDP analytics provides companies revenue intensities as secondary data. The quantity is about half of scope 1 and 2 and is relevant to our carbon footprint.

### **Waste generated in operations**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

66111

### **Emissions calculation methodology**

USEPA WasteWise model applied with GM Global waste data. GM avoided 7.7 Million metric tons by reusing, recycling, and composting significant quantities of materials. The WARM model estimated a negative value for landfill emissions due to bio-genic credit for some materials. For conservative reporting, GM is not using the credit to show GHG from landfill activities.

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

50

### **Explanation**

Reuse, recycle, incineration, and landfill activities are inputs to WARM model from actual data and the remaining calculation from WARM uses secondary data factors. As GM increases its landfill free facilities, our GHG from waste is reduced accordingly. In 2017, GM avoided 7.7 Million tons of GHG through reduction, reuse, recycle, and composting materials and had 142 Landfill-free sites. Although CO2e reductions have reduced it to below relevant levels, we continue to treat it as relevant due to the huge offset opportunity as reuse and recycling avoids more than our scope 1 & 2 emissions combined.

### **Business travel**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

50137

### **Emissions calculation methodology**

GHG Protocol method was used by our 3rd party travel agent to calculate Air Business travel GHG emissions for our global operations from 2013 data and updated based on number of employees.

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

50

### **Explanation**

Distances traveled is primary data and emission factors is secondary. Based on the methodology used, the value is 1% or much less than the 5% threshold of relevancy established compared to the total of Scope 1 and 2 emissions and therefore determined to be not relevant.

### **Employee commuting**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

135000

### **Emissions calculation methodology**

Using CDP Analytics, an average of employee commuting intensity per employee was calculated and applied to GM's total employee number to estimate our GHG associated with employee commuting

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

25

### **Explanation**

Based on the methodology used, the value is 2% or much less than the 5% threshold of relevancy established compared to the total of Scope 1 and 2 emissions and therefore determined to be not relevant

### **Upstream leased assets**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

10077

### **Emissions calculation methodology**

GM's leased asset facility area was used along with the GHG intensity of similar facilities to estimate the GHG from GM's global upstream leased assets.

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

50

### **Explanation**

Based on the methodology used, the value is 0.1% or much less than the 5% threshold of relevancy established compared to the total of Scope 1 and 2 emissions and therefore determined to be not relevant. Area of leased space is primary data and intensity factors is secondary.

### **Downstream transportation and distribution**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

1609174

### **Emissions calculation methodology**

GM is a member of EPA SmartWay and used their methodology to obtain GHG emissions, based on truck distances and fuel efficiency according to GHG Protocol for GM's North America parts delivery from third party over the road logistics providers. Ocean emissions intensity was evaluated using a major supplier's carbon accounting and extrapolating using revenue intensity. Rail and Air emissions for all global upstream transportation GHG were estimated using CDP Analytics for similar companies multiplied by revenue spend. Truck emissions for rest of world were calculated using emission factors from EPA SmartWay.

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

50

### **Explanation**

SmartWay provides primary data from carriers using fuel use and distances traveled. Revenue spend is primary data from suppliers and CDP analytics provides company revenue intensities as secondary data. The quantity is 26% of scope 1 and 2 and is relevant to our carbon footprint.

### **Processing of sold products**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

120731

### **Emissions calculation methodology**

GM sells boat engines as an intermediate product to boat manufacturers and customers for recreational use. Based on estimates from boatcarbonfootprint.com, including average hours of operation and fuel efficiency for gasoline engines and USEPA emission factors, a total GHG amount for the use of sold products was calculated and extrapolated for total carbon footprint.

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

25

### **Explanation**

Based on the methodology used, the value is 2% or less than the 5% threshold of relevancy established compared to the total of Scope 1 and 2 emissions and therefore determined to be not relevant.

### **Use of sold products**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

220929108

### **Emissions calculation methodology**

GHG from the Use of Sold products or vehicles is calculated using the average regional CO2e emissions per vehicle multiplied by life cycle distance driven by customers of 150,000 km over 10 years and multiplied by 2017 sales volumes. Additionally, fugitive emissions of Mobile air conditioning units are calculated using WRI method 3 and added for total estimated GHG emissions. The regions utilized for emission factors are USA, Brazil, and China based on the most fully developed regulatory monitoring and measurement systems. Vehicle emissions were verified by a third party, except for mobile air conditioning, which accounts for less than 1% and getting less as GHG friendly refrigerants like HF1234yf are being used.

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

80

### **Explanation**

2017 calculation of life cycle GHG from vehicles sold is done using regional vehicle emissions rates for increased granularity. This vehicle emissions portion of the category was verified by a 3rd party. Vehicle emissions were verified by a third party, except for mobile air conditioning fugitive emissions of GHG, which accounts for less than 1% and getting less as more Climate Change friendly refrigerants like HF1234yf are being used in-lieu of R134a.

### **End of life treatment of sold products**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

3559479

### **Emissions calculation methodology**

The total emissions are based on the "end of life" CO2e results of product life cycle analysis calculations performed at General Motors for specific automobiles and their material compositions and is multiplied by the total amount of vehicles that GM sold globally in 2017.

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

50

### **Explanation**

Product life cycle analysis provides a basis for GHG emissions from end of life of an automobile. Design for the Environment activities provide a method for continuous improvement in End of Life GHG. As the GHG is 58% of scope 1 and 2, it is relevant. Primary data is vehicle volume and secondary is Product LCA.

### **Downstream leased assets**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

20459

### **Emissions calculation methodology**

A portion of GM's global headquarters facility is leased to other tenants as well as a vehicle haul-away site. The GHG represents the estimated use from leased spaces based on energy invoice data and meter allocations. GHG emissions are calculated using GHG Protocol with E-Grid and fuel emission factors from USEPA.

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

80

### **Explanation**

Based on the methodology used, the value is 0.3% or much less than the 5% threshold of relevancy established compared to the total of Scope 1 and 2 emissions and therefore determined to be not relevant.

### **Franchises**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

136449

### **Emissions calculation methodology**

We market vehicles worldwide primarily through a network of independent authorized retail dealers. These outlets include distributors, dealers and authorized sales, service and parts outlets. GHG for these franchises was calculated based on 12,450 global facilities using average dealer building area and average GHG emission factors per area from data obtained from a dealer based on energy invoice data and local emission factors

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

50

### **Explanation**

Based on the methodology used, the value is 3% or less than the 5% threshold of relevancy established compared to the total of Scope 1 and 2 emissions and therefore determined to be not relevant.

### **Investments**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

59212

### **Emissions calculation methodology**

Using CDP Analytics, a representative GHG net income intensity was used along with GM's financial unit's annual 2017 income to estimate our GHG from Investment activities.

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

### **Explanation**

Based on the methodology used, the value is 1% or much less than the 5% threshold of relevancy established compared to the total of Scope 1 and 2 emissions and therefore determined to be not relevant.

### **Other (upstream)**

### **Evaluation status**

Not evaluated

### **Metric tonnes CO2e**

### **Emissions calculation methodology**

Not Applicable

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

### **Explanation**

### **Other (downstream)**

### **Evaluation status**

Not evaluated

### **Metric tonnes CO2e**

### **Emissions calculation methodology**

Not Applicable

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

### **Explanation**

## **C6.7**

### **(C6.7) Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?**

Yes

## **C6.7a**

### **(C6.7a) Provide the emissions from biologically sequestered carbon relevant to your organization in metric tons CO2.**

94423

## **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**

0.000042

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

6151691

### **Metric denominator**

unit total revenue

### **Metric denominator: Unit total**

145588000000

### **Scope 2 figure used**

Market-based

### **% change from previous year**

10.4

### **Direction of change**

Decreased

### **Reason for change**

For the automobile industry, revenue intensity is not a good measure of performance since revenue is not aligned with output or production. A better metric is production intensity based on vehicle output. Revenue reduced by 2.4% due to mainly asset divestiture and market conditions in 2017 vs. 2016. Absolute carbon reduced by 11% due to sale of assets, energy efficiency and increased renewable energy use. Carbon intensity based on vehicle production decreased by 7% which is indicative of performance as opposed to revenue intensity which is less reduction than product intensity.

### **Intensity figure**

0.69

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

6151691

### **Metric denominator**

vehicle produced

### **Metric denominator: Unit total**

8898697

### **Scope 2 figure used**

Market-based

### **% change from previous year**

7

### **Direction of change**

Decreased

### **Reason for change**

Reduction in vehicle intensity resulted from energy intensity reduction at 2% based on lighting, HVAC, Building envelope, and employee engagement projects and initiatives along with an increase in the use of renewable energy from 3% to 7% in 2017. Vehicle volume reduce slightly at 2%, but overall Scope 1 and 2 absolute emissions reduced by 11% year over year.

## **C7. Emissions breakdowns**

## **C7.1**

### **(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?**

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 | 1811235 | IPCC Fifth Assessment Report (AR5 – 100 year) |
| CH4 | 39 | IPCC Fifth Assessment Report (AR5 – 100 year) |
| N2O | 13 | IPCC Fifth Assessment Report (AR5 – 100 year) |
| HFCs | 37569 | IPCC Fifth Assessment Report (AR5 – 100 year) |

## **C7.2**

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

|  |  |
| --- | --- |
| **Country/Region** | **Scope 1 emissions (metric tons CO2e)** |
| North America | 1343548 |
| South America | 72083 |
| Other, please specify (Rest of World) | 433172 |

## **C7.3**

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

By business division

## **C7.3a**

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

|  |  |
| --- | --- |
| **Business division** | **Scope 1 emissions (metric ton CO2e)** |
| GM North America | 1343548 |
| GM South America | 72083 |
| GM International Operations | 433172 |

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

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Gross Scope 1 emissions, metric tons CO2e** | **Net Scope 1 emissions , metric tons CO2e** | **Comment** |
| Cement production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Chemicals production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Coal production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Electric utility generation activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Metals and mining production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (upstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Steel production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport OEM activities | 1848804 | <Not Applicable> | GM's entire business is Transport OEM activities |
| Transport services activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |

## **C7.5**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Country/Region** | **Scope 2, location-based (metric tons CO2e)** | **Scope 2, market-based (metric tons CO2e)** | **Purchased and consumed electricity, heat, steam or cooling (MWh)** | **Purchased and consumed low-carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)** |
| North America | 2433599 | 2181894 | 5365830 | 621232 |
| South America | 99593 | 98021 | 468632 | 8517 |
| Other, please specify (Rest of World) | 2039541 | 2022972 | 3022177 | 22026 |

## **C7.6**

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

By business division

## **C7.6a**

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

|  |  |  |
| --- | --- | --- |
| **Business division** | **Scope 2, location-based emissions (metric tons CO2e)** | **Scope 2, market-based emissions (metric tons CO2e)** |
| GM North America | 2433599 | 2181894 |
| GM South America | 99593 | 98021 |
| GM International Operations | 2039541 | 2022972 |

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

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Scope 2, location-based, metric tons CO2e** | **Scope 2, market-based (if applicable), metric tons CO2e** | **Comment** |
| Cement production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Chemicals production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Coal production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Metals and mining production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (upstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Steel production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport OEM activities | 4572734 | 4302887 | GM's entire business is Transport OEM activities |
| Transport services activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |

## **C-TO7.8**

### **(C-TO7.8) Provide primary intensity metrics that are appropriate to your indirect emissions in Scope 3 Category 11: Use of sold products from transport.**

### **Activity**

Light Duty Vehicles (LDV)

### **Emissions intensity figure**

0.0013

### **Metric numerator (Scope 3 emissions: use of sold products) in Metric tons CO2e**

220929108

### **Metric denominator**

p.km

### **Metric denominator: Unit total**

173842500000

### **% change from previous year**

-16

### **Vehicle unit sales in reporting year**

8915000

### **Vehicle lifetime in years**

10

### **Annual distance in km or miles (unit specified by column 4)**

15000

### **Load factor**

Average occupancy rates for passenger vehicles under various use scenarios according to European Environment Agency is 1.3 passengers per vehicle.

### **Please explain the changes, and relevant standards/methodologies used**

GM used (3) methodologies for vehicle emissions intensities (grams/km) based on governmental standards from US EPA, China, and Brazil and applied these to the appropriate country of sale considering vehicle model similarities, e.g. use US for Canada sales and Brazil for South America sales... For mobile air conditioning HFC fugitive emissions calculation we used WRI method 3 and ARA 5 GWP for R-134a and HF1234yf. Vehicle sales is listed in GM financial filing 10-k report with US Securities and Exchange Commission. Passenger km is based on industry standard at 15,000 km/year and vehicle lifetime is 10 years. We used 1.3 passengers per vehicle based on average occupancy from European Environment Agency report on Occupancy rates for passenger vehicles. Changes from 2016 total vehicle emissions that comprise the 16% reduction include: -reduction in emission intensity in all countries ranging from 3% to 11% -used Brazil actual in 2017 versus US intensity in 2016 for South America -used China actual in 2017 for Asia, Africa, and Middle East versus US in 2016 -eliminated EU vehicles based on divestiture in 2017 of EU operations -increased use of HF1234yf as vehicle refrigerant in 2017 versus 2016 with mostly R-134a

## **C7.9**

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

Decreased

## **C7.9a**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Change in emissions (metric tons CO2e)** | **Direction of change** | **Emissions value (percentage)** | **Please explain calculation** |
| Change in renewable energy consumption | 119192 | Decreased | 2 | Last year 119,192 tCO2e were reduced by a change of our renewable energy consumption, and our total S1 and S2 emissions in the previous year was 6,910,810 tCO2e, therefore we arrived at 2% through (119,192/ 6,910,810)\*100= 2% GM Increased renewable use from 3% to 7% on pathway to RE-100 in 2017 with major wind PPA and new onsite solar installations. |
| Other emissions reduction activities | 255799 | Decreased | 4 | Last year 255,799 tCO2e were reduced by a energy efficiency projects, and our total S1 and S2 emissions in the previous year was 6,910,810 tCO2e, therefore we arrived at 4% through (255,799/ 6,910,810)\*100= 4% Energy efficiency projects include - lights, HVAC, building envelope, employee engagement, and process changes. |
| Divestment | 789555 | Decreased | 11 | Last year 789,555 tCO2e were reduced based on divestment of assets, and our total S1 and S2 emissions in the previous year was 6,910,810 tCO2e, therefore we arrived at 11% through (789,555/ 6,910,810)\*100= 11% GM Sold assets in EU, Africa, and India in 2017 |
| Acquisitions | 0 | No change | 0 | Minimal acquisitions that affected GHG emissions. |
| Mergers | 0 | No change | 0 | No mergers that affected GHG emissions. |
| Change in output | 61517 | Decreased | 1 | Last year 61,517 tCO2e were reduced by a change in output from reduced production, and our total S1 and S2 emissions in the previous year was 6,910,810 tCO2e, therefore we arrived at 1% through (61,517/ 6,910,810)\*100=1% GM had a 2% reduction in overall vehicle production volume excluding divested assets. |
| Change in methodology | 432986 | Decreased | 6 | Last year 432,986 tCO2e were reduced by a change in methodology with an update in emission factors, and our total S1 and S2 emissions in the previous year was 6,910,810 tCO2e, therefore we arrived at 6% through (432,986/ 6,910,810)\*100= 6% GM Updated GHG emission factors to most recent in IEA database that show continuous improvement as factors reduced compared to last update. |
| Change in boundary | 0 | No change | 0 | No change in boundary |
| Change in physical operating conditions | 30758 | Decreased | 0.4 | Last year 30,758 tCO2e were reduced by a change in our physical operating conditions with 2% overall less degree days, and our total S1 and S2 emissions in the previous year was 6,910,810 tCO2e, therefore we arrived at 0.4% through (30,578/ 6,910,810)\*100= 0.4% Based on local weather stations, we experienced 2% less climate degree days in 2017 versus 2016 at GM Assembly plants globally. |
| Unidentified | 0 | Please select | 0 | calculations balance with no identified sources of change |
| Other | 60352 | Increased | 1 | Last year 60,352 tCO2e were increased based on additional vehicle launch activites, and our total S1 and S2 emissions in the previous year was 6,910,810 tCO2e, therefore we arrived at 1% through (60,352/ 6,910,810)\*100= 1% GM's new vehicle launch activities for new models require pre-production activities without real vehicle production. |

## **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 0% but less than or equal to 5%

## **C8.2**

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

|  |  |
| --- | --- |
|  | **Indicate whether your organization undertakes this energy-related activity** |
| Consumption of fuel (excluding feedstocks) | Yes |
| Consumption of purchased or acquired electricity | Yes |
| Consumption of purchased or acquired heat | Yes |
| Consumption of purchased or acquired steam | Yes |
| Consumption of purchased or acquired cooling | No |
| Generation of electricity, heat, steam, or cooling | Yes |

## **C8.2a**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Heating value** | **MWh from renewable sources** | **MWh from non-renewable sources** | **Total MWh** |
| Consumption of fuel (excluding feedstock) | HHV (higher heating value) | 310682 | 8327690 | 8638372 |
| Consumption of purchased or acquired electricity | <Not Applicable> | 319877 | 7895570 | 8215447 |
| Consumption of purchased or acquired heat | <Not Applicable> | 0 | 246291 | 246291 |
| Consumption of purchased or acquired steam | <Not Applicable> | 117056 | 139056 | 256112 |
| Consumption of purchased or acquired cooling | <Not Applicable> | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Consumption of self-generated non-fuel renewable energy | <Not Applicable> | 68846 | <Not Applicable> | 68846 |
| Total energy consumption | <Not Applicable> | 816461 | 16608607 | 17425068 |

## **C8.2b**

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

|  |  |
| --- | --- |
|  | **Indicate whether your organization undertakes this fuel application** |
| Consumption of fuel for the generation of electricity | Yes |
| Consumption of fuel for the generation of steam | Yes |
| Consumption of fuel for the generation of cooling | Yes |
| Consumption of fuel for co-generation or tri-generation | Yes |

## **C8.2c**

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

### **Fuels (excluding feedstocks)**

Natural Gas

### **Heating value**

HHV (higher heating value)

### **Total fuel MWh consumed by the organization**

8254181

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

0

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

4945652

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

3308529

### **MWh fuel consumed for self-generation of cooling**

0

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

0

### **Fuels (excluding feedstocks)**

Landfill Gas

### **Heating value**

HHV (higher heating value)

### **Total fuel MWh consumed by the organization**

310682

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

202489

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

0

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

108193

### **MWh fuel consumed for self-generation of cooling**

0

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

0

### **Fuels (excluding feedstocks)**

Coke

*Iron production ceased in 2017*

### **Heating value**

HHV (higher heating value)

### **Total fuel MWh consumed by the organization**

142356

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

0

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

142356

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

0

### **MWh fuel consumed for self-generation of cooling**

0

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

0

## **C8.2d**

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

### **Coke**

### **Emission factor**

0.39

### **Unit**

metric tons CO2e per MWh

### **Emission factor source**

US EPA Center for Corporate Climate Leadership; Emission Factors for Greenhouse Gas Inventories; Last Modified 9 Mar 2018

### **Comment**

2017 was the last year for GM to use Coke in iron melting operations.

### **Landfill Gas**

### **Emission factor**

0.00091

### **Unit**

metric tons CO2e per MWh

### **Emission factor source**

According to the GHG Protocol, the biogenic portion of the CO2 emissions is reported separately from GHG emissions and assigned a factor of 0. The remaining portion, CH4 and N2O is calculated using IPCC AR5 data and is 0.00091 MT CO2e/MWh of landfill gas.

### **Comment**

Biogenic emissions from landfill gas use are reported separately. We use landfill gas to generate renewable electricity and in boilers for steam production to reduce fossil fuel use.

### **Natural Gas**

### **Emission factor**

0.186

### **Unit**

metric tons CO2e per MWh

### **Emission factor source**

For countries with local GHG regulations, e.g. US, Canada, South Korea..., we use regulatory emission factors and for all others we use IPCC AR5. The average of these for natural gas is 0.186 metric tons CO2e per MWh.

### **Comment**

## **C8.2e**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Total Gross generation (MWh)** | **Generation that is consumed by the organization (MWh)** | **Gross generation from renewable sources (MWh)** | **Generation from renewable sources that is consumed by the organization (MWh)** |
| Electricity | 121163 | 121163 | 121163 | 121163 |
| Heat | 0 | 0 | 0 | 0 |
| Steam | 108193 | 108193 | 108193 | 108193 |
| Cooling | 0 | 0 | 0 | 0 |

## **C8.2f**

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

### **Basis for applying a low-carbon emission factor**

Off-grid energy consumption from an on-site installation or through a direct line to an off-site generator owned by another company

### **Low-carbon technology type**

Solar PV

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

4641

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

0

### **Comment**

Onsite solar from contracts for use with GM owned attributes in California, Ohio, and Maryland with zero impact on GHG.

### **Basis for applying a low-carbon emission factor**

Power Purchase Agreement (PPA) with energy attribute certificates

### **Low-carbon technology type**

Wind

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

306719

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

0

### **Comment**

Wind virtual purchase power agreements with attributes in Mexico and Texas with zero impact on GHG.

### **Basis for applying a low-carbon emission factor**

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

### **Low-carbon technology type**

Other low-carbon technology, please specify (Utility mix of renewable energy (RPS))

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

186067

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

0

### **Comment**

Public service commission regulations require carbon certificates to be retired in the name of the customers in the states of Michigan and Missouri for zero impact on GHG.

## **C-TO8.4**

### **(C-TO8.4) Provide any efficiency metrics that are appropriate for your organization’s transport products and/or services.**

### **Activity**

Light Duty Vehicles (LDV)

### **Metric figure**

0.00017

### **Metric numerator**

tCO2e

### **Metric denominator**

Use phase: Vehicle.km

### **Metric numerator: Unit total**

22092911

### **Metric denominator: Unit total**

133725000000

### **% change from previous year**

2.3

### **Please explain**

Total use of sold product is calculated annually for 2017 (LCA method exceeds CDP range limit for metric denominator). The method is consistent with GHG Protocol, using country regulatory vehicle emission methods for US, China, and Brazil. The GHG emission intensities are applied to every country with sales using emission factors that match the models typically sold in that country, e.g. US factors used in Canada, Brazil factors used in South America, and China used in Asia, Africa, and Middle East. Emission intensities (Grams/km) are multiplied by 15,000 km/year driven per vehicle and number of vehicles sold by country. Metric tons are normalized by 15,000 km driven for metric figure reported.

## **C9. Additional metrics**

## **C9.1**

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

### **Description**

Waste

### **Metric value**

142

### **Metric numerator**

Number of Landfill-Free sites cumulative 2010

### **Metric denominator (intensity metric only)**

Absolute metric and not applicable

### **% change from previous year**

8.4

### **Direction of change**

Increased

### **Please explain**

GM's goal is to have 150 Landfill-Free sites by 2020 from a baseline of 66 in 2010. Landfill-Free sites encourage reuse and recycle of resources that reduces GM's scope 3 GHG significantly. In 2017, using the USEPA WARM model, GM avoided 7.7 million tons of CO2e by reuse, recycle and as a last resort incineration. This avoids more than our total scope 1 and 2 emissions for the year. In 2017, we increased the number of Landfill-Free sites by 8.4% to 142 on the pathway to 150 by 2020.

### **Description**

Energy use

### **Metric value**

1.96

### **Metric numerator**

MWh of total energy in operations

### **Metric denominator (intensity metric only)**

Vehicles produced in operations

### **% change from previous year**

2

### **Direction of change**

Decreased

### **Please explain**

A key initiative of de-carbonization in our operations is energy efficiency. We set a goal of 20% intensity reduction from 2010 to 2020 and are on the pathway to meet the goal. We use a dedicated fund for energy, water, and carbon savings projects that ranges from $20-30 M annually with less than a 2 year return. Also, we use energy performance contracting for projects with a longer return using the shared savings approach. In 2017 we reduced energy intensity by 2%, although vehicle volume also reduced by 2% with a 4% absolute energy savings from projects - lighting, HVAC, building envelop, and employee engagement. Energy efficiency is a key driver of our RE-100 commitment as it right sizes the amount of electricity needed for operations.

## **C-TO9.3/C-TS9.3**

### **(C-TO9.3/C-TS9.3) Provide tracking metrics for the implementation of low-carbon transport technology over the reporting year.**

### **Activity**

Light Duty Vehicles (LDV)

### **Metric**

Sales

### **Technology**

Battery electric vehicle (BEV)

### **Metric figure**

29325

### **Metric unit**

Units

### **Explanation**

We set a goal of producing the world’s first long-range electric vehicle at a price within reach of most American consumers, and the Chevrolet Bolt EV, now available nationwide in the United States, has enabled us to deliver on that goal. The Bolt EV builds upon lessons learned from the Chevrolet Volt, which provided long-range hybrid electric performance at an affordable price and has sold more than 130,000 units since its release in 2010. The Bolt EV represents the next generation of EV innovation, affordability and range—and, in its first year of sales, is topping charts and delighting customers across the country.

## **C-TO9.6/C-TS9.6**

### **(C-TO9.6/C-TS9.6) What is your investment in research and development (R&D), equipment, products and services and which part of it would you consider a direct investment in the low-carbon transition?**

### **Activity**

Light Duty Vehicles (LDV)

### **Investment start date**

janvier 1 2017

### **Investment end date**

décembre 31 2017

### **Investment area**

R&D

### **Technology area**

Other, please specify (Total company R&D for safety, AV, and EV)

### **Investment maturity**

Applied research and development

### **Investment figure**

7300000000

### **Low-carbon investment percentage**

41-60%

### **Please explain**

The continued development of our EV portfolio rests upon 20 years of electrification knowledge and experience and the investment of billions in research and development. Today, we estimate that about half of our Global Propulsion Systems engineering workforce is involved with alternative or electrified propulsion. We also benefit from one of the largest battery development labs in the world, as well as our own battery manufacturing facilities. Although we don't publicly state the percentage of R&D for electrification, the investment % is based on number of employees in our Global Propulsion Group working on electrification.

## **C10. Verification**

## **C10.1**

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

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

## **C10.1a**

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

### **Scope**

Scope 1

### **Verification or assurance cycle in place**

Annual process

### **Status in the current reporting year**

Complete

### **Type of verification or assurance**

Limited assurance

### **Attach the statement**

1

[ver\_stmt\_final\_GM\_Global\_20180608 Scope 1-2 water energy waste.pdf](https://www.cdp.net/fr/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/7Icn54A-7kadWW2s9n7UNA/verstmtfinalGMGlobal20180608Scope12waterenergywaste.pdf)

### **Page/ section reference**

Page 2. Table 1 and Page 3 "Verification Opinion"

### **Relevant standard**

ISO14064-3

### **Proportion of reported emissions verified (%)**

90

### **Scope**

Scope 2 location-based

### **Verification or assurance cycle in place**

Annual process

### **Status in the current reporting year**

Complete

### **Type of verification or assurance**

Limited assurance

### **Attach the statement**

1

[ver\_stmt\_final\_GM\_Global\_20180608 Scope 1-2 water energy waste.pdf](https://www.cdp.net/fr/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/7Icn54A-7kadWW2s9n7UNA/verstmtfinalGMGlobal20180608Scope12waterenergywaste.pdf)

### **Page/ section reference**

Page 2. Table 1 and Page 3 "Verification Opinion"

### **Relevant standard**

ISO14064-3

### **Proportion of reported emissions verified (%)**

100

## **C10.1b**

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

### **Scope**

Scope 3- at least one applicable category

### **Verification or assurance cycle in place**

Annual process

### **Status in the current reporting year**

Complete

### **Attach the statement**

1

[ver\_stmt\_final\_GM\_Global\_20180830 all scopes.pdf](https://www.cdp.net/fr/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/YGoH3Souq0CWjZ4naQU3hg/verstmtfinalGMGlobal20180830allscopes.pdf)

### **Page/section reference**

Page 2. Table 1 and Page 3 "Verification Opinion"

### **Relevant standard**

ISO14064-3

## **C10.2**

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

Yes

## **C10.2a**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Disclosure module verification relates to** | **Data verified** | **Verification standard** | **Please explain** |
| C5. Emissions performance | Year on year change in emissions (Scope 1 and 2) | ISO 14064-3 | Limited assurance of year over year scope 1 and 2 emissions reduction. |

## **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.**

China national ETS

Korea ETS

Ontario CaT

## **C11.1b**

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

### **China national ETS**

### **% of Scope 1 emissions covered by the ETS**

49

### **Period start date**

janvier 10 2017

### **Period end date**

décembre 31 2017

### **Allowances allocated**

227074

### **Allowances purchased**

0

### **Verified emissions in metric tons CO2e**

224314

### **Details of ownership**

Facilities we own but do not operate

### **Comment**

Operations in China are a GM Joint Venture that we disclose for Climate Change due to oversight of operations and participation from the JV in energy management sharing. We track GHG emissions in our Global utility database, share best practices, and jointly participate in Energy Treasure Hunts. The ETS is only in various parts of China at this time.

### **Korea ETS**

### **% of Scope 1 emissions covered by the ETS**

100

### **Period start date**

janvier 1 2017

### **Period end date**

décembre 31 2017

### **Allowances allocated**

454569

### **Allowances purchased**

0

### **Verified emissions in metric tons CO2e**

342803

### **Details of ownership**

Facilities we own and operate

### **Comment**

GM Korea participates in phase 1 of the trading scheme that includes emissions from liquid natural gas, heating oil, fuel for company vehicles, acetylene, and CO2 for direct emissions and purchased electricity for indirect emissions. In 2017 we sold 400,000 metric tons to the Korean Emission Trading market for $8 Million USD and are using $25/ton as an internal shadow price on carbon to enhance the value of energy efficiency projects.

### **Ontario CaT**

### **% of Scope 1 emissions covered by the ETS**

100

### **Period start date**

janvier 1 2017

### **Period end date**

décembre 31 2017

### **Allowances allocated**

122978

### **Allowances purchased**

0

### **Verified emissions in metric tons CO2e**

122978

### **Details of ownership**

Facilities we own and operate

### **Comment**

Effective July 3, 2018, Ontario government cancelled the cap and trade regulation and prohibited all trading of emission allowances. The information provided is for 2017 and allocations were provided free of cost.

## **C11.1d**

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

GM's strategy for participating in emissions trading schemes in Korea and China is to continue implementing energy efficiency projects and initiatives to reduce GHG and provide value from the potential sale of carbon credits in the market place.

## **C11.2**

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

No

## **C11.3**

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

Yes

## **C11.3a**

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

### **Objective for implementing an internal carbon price**

Drive energy efficiency

Drive low-carbon investment

Identify and seize low-carbon opportunities

### **GHG Scope**

Scope 1

Scope 2

### **Application**

Energy efficiency projects usually provide a return on investment within 2 years. Adding the value of carbon credits to the savings provides for quicker payback and allows additional projects to be implemented within the targeted return. An example of this was in our facilities in South Korea where energy project business cases included carbon credits to enhance the returns. In reality, GM Korea was able to sell 400,000 tons into the market at a price of $25/ton, yielding $8M USD.

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

25

### **Variance of price(s) used**

We have not used a variance in price on carbon yet as real market data is easiest to sell to management as indicative of current market conditions. We are expanding this to other regions and have started using a shadow price to prioritize energy and carbon efficiency projects in North America.

### **Type of internal carbon price**

Shadow price

### **Impact & implication**

Using a price on carbon provides a number of advantages including greater awareness of the value of carbon reduction, prioritization of projects that favors carbon reduction, and an increase in project spend available in regions where cap and trade is in effect.

## **C12. Engagement**

## **C12.1**

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

Yes, our suppliers

Yes, our customers

## **C12.1a**

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

### **Type of engagement**

Information collection (understanding supplier behavior)

### **Details of engagement**

Collect climate change and carbon information at least annually from suppliers

### **% of suppliers by number**

2

### **% total procurement spend (direct and indirect)**

82

### **% Scope 3 emissions as reported in C6.5**

18

### **Rationale for the coverage of your engagement**

General Motors’ sustainability strategy is synonymous with its business strategy. Our vision for personal mobility is a world with zero crashes, zero emissions and zero congestion. By delivering safer, simpler and sustainable transportation solutions for our customers, we’ll realize that vision. In the process, GM will become the most valued automotive company. In order to build the most valuable automotive company, we must recognize that our impacts go beyond the walls of GM to include our entire value chain, of which customers and suppliers make up a significant part. -The importance of strong supply chain management and relationships is further underscored as new issues arise due to business expansion into emerging markets and increased participation in more advanced technologies, such as electricity-powered vehicles. We seek to partner with suppliers who share our purpose and values. We expect our employees working with suppliers to hold them accountable to the same environmental principles and ethical standards to which we hold our own employees and operations—so we all win with integrity. Engagement with suppliers to reduce GHG in auto parts life-cycle is an enormous task that needs prioritization. Of the 20,000 suppliers that provide services, parts and systems for GM vehicles, we have developed a Strategic Supplier Engagement (SSE)team of key suppliers. The SSE comprises the top suppliers to GM in spend and strategic importance in the supply chain. We use life cycle analysis of GHG for each supplier to determine the impact on our Scope 3 emissions and also include the top emitters that are not in the SSE group. GM participates with CDP Supply Chain in Climate Change and Water and selected SSE and large GHG emitters to engage in 2017.

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

-The number of suppliers responding to CDP Climate Change increased by 60% in 2017 using the mix of SSE group and large emitters. Measuring our supply chain's disclosure and performance related to Climate Change shows increased governance, emissions reporting, Suppliers engaging with their suppliers, increase in number of Suppliers reporting a target from 95 to 135, and 30 Suppliers reporting a renewable energy target. GM suppliers reported reduction of over 22 million tons of GHG with energy efficiency and conservation efforts. 12 Suppliers are enrolled in Action Exchange cycle for 2017-2018 and 3 reported emissions reduction as a result of Action Exchange.

### **Comment**

GM believes stakeholder engagement in our value chain on Climate Change will not only reduce impact for GM's footprint, but that of the entire industry. Our life cycle analysis shows that the majority of our purchased goods and services GHG emissions occur in tiers 2-6 and that the top two industries that affect GHG is Electricity supply and Steel production. Also a core element of our vehicle electrification strategy to reduce climate change impact includes increased renewable energy in the electric grid. Our RE-100 commitment includes working on policy issues with government and utilities to increase the availability and use of renewable energy. In Michigan, GM recently purchased green tariff electricity from Consumers Energy after working collaboratively on increasing renewable energy supply.

## **C12.1b**

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

### **Type of engagement**

Education/information sharing

### **Details of engagement**

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

### **Size of engagement**

5

### **% Scope 3 emissions as reported in C6.5**

77

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

General Motors’ sustainability strategy is synonymous with its business strategy. Our vision for personal mobility is a world with zero crashes, zero emissions and zero congestion. By delivering safer, simpler and sustainable transportation solutions for our customers, we’ll realize that vision. In the process, GM will become the most valued automotive company. In order to build the most valuable automotive company, we must recognize that our impacts go beyond the walls of GM to include our entire value chain, of which customers and suppliers make up a significant part. -Our growing portfolio of electric vehicles (EVs) is key to meeting our vision of a zero-emissions future and the diverse demands of our customers. Today, we are the most connected automaker in the world, with nearly 14 million vehicles connected, accounting for 200 million daily interactions with customers. We actively work with and engage stakeholders to build EV awareness and help develop national EV charging infrastructure to strengthen the EV market. We remain committed to improving the efficient fundamentals of traditional propulsion technology. Fuel economy and lower emissions are not only a highly regulated part of our business, but also a way in which we increase the customer value proposition of our products. Since 2016, General Motors has shed more than 5,000 pounds across 14 new-vehicle models, saving 35 million gallons of gasoline and 300 thousand metric tons of CO2 emissions per year. Engagement with customers with technology and communications to enhance fuel economy is an important driver to reduce GHG through behavioral methods. Additionally, GM publicly shares the results of our long standing participation with Energy Star with seven years of being recognized with Sustained Excellence for Energy Management for our facilities. We want to show our customers that energy efficiency and carbon reduction matter to us in the products we manufacture. In 2017 we were able to have 3 Assembly plants and 17 buildings certified by Energy Star for Superior Energy Performance.

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

Some of the ways in which we engage customers in being more aware and efficient drivers include: - The GM Sustainability Report online (gmsustainability.com). The interactive version of our yearly business report is updated regularly with content including resources on electric vehicle ownership, how to be a more efficient driver and others. (found in the Knowledge Share tab, along with other areas in the report) - The "9 Ways to be Fuel Efficient and Help Save Gas" post has received 100 views. Our gm.green Sustainability blog is another resource for consumers and business partners: - The "Five Easy Steps to be a Better, Greener Driver" post has had more than 40,000 impressions - General Motors and its brands actively engage media to help scale engagement. In the August issue of Popular Science, Nathan Wilmot, Vehicle Performance Owner for Vehicle Energy Integration at GM shared the tips on getting the best fuel economy. The article,"How to get the Best Possible Gas Mileage" had a readership of nearly 200,000 online and printed views. -Customer engagement in fuel efficiency involves communications to enhance behaviors during the driving experience. On a real time basis, GM provides dashboards in many vehicles to show the instantaneous fuel efficiency and where applicable green indicators for driving in the most efficient modes. Examples are Variable valve timing paired with cylinder deactivation (Active Fuel Management) shows how many cylinders are active on a real time basis and shows green when driving with less number of cylinders active, e.g. 4 cylinders in an 8 cylinder engine. Also, our Battery Electric Vehicles and hybrid vehicles provide customers with real time efficiency indication on the dashboard with a green indicator showing the best performance. Participation in dashboards is difficult to measure, but comments show success. - Our Energy Star post received more than 30,000 impressions from public viewing.

## **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

Other

## **C12.3a**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Focus of legislation** | **Corporate position** | **Details of engagement** | **Proposed legislative solution** |
| Other, please specify (Increase access to electric charging) | Support | GM joined 45 auto-industry peers as signatories to the Guiding Principles to Promote Electric Vehicles and Charging Infrastructure, a commitment to the collaboration between the government and industry to increase consumer access to electric vehicles and charging infrastructure all across the US. This engagement deepens the partnerships and collaborative relationships that are needed to successfully drive nationwide EV adoption into the mainstream and focuses on strategizing EV infrastructure, regulatory and policy enablers at the state and federal | One example of GM support included Pacific Gas & Electric Company’s application before the Public Utilities Commission of the State of California to install infrastructure to support electric vehicle charging at multi-unit dwellings, workplaces, and public interest destinations. In its application, PG&E will convene a program advisory council comprised of representatives from state agencies, ratepayer advocates, environmental justice groups, technology providers, automakers, and others to provide feedback and guidance on pilot design and implementation. |
| Other, please specify (Alternative fuel vehicle tax exemption) | Support | GM has directly supported federal and state legislation that provides alternative fuel vehicle (e.g.: electric vehicles) incentives. Support includes written and verbal testimonies, position papers, distribution of educational material, and participation in supportive coalitions and associations. | One example is GM’s support of the State of Washington’s House Bill 1925. HB1925 provides an electric vehicle sales tax exemption which would continue until 2025 |

## **C12.3b**

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

Yes

## **C12.3c**

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

### **Trade association**

The Alliance of Automobile Manufacturers Alliance of Automobile Manufacturers position on climate change that reducing transportation sector greenhouse gas emissions will require the mass market commercialization of electric vehicles. That includes technologies such as hybrid electrics, plug-in hybrid electrics, battery electrics, and fuel cell vehicles. Widespread consumer acceptance of these technologies will require that efforts be focused on important considerations such as: supporting infrastructure, incentives for consumer adoption, the alignment of regulatory efforts and the removal of market barriers. One example of how the trade association has attempted to influence climate change policy is through the issuance of statements on behalf of its members. The Auto Alliance has called for a single, national program because conflicting requirements from several regulatory bodies raise costs, ultimately losing value to consumers.

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

Consistent

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

The Alliance of Automobile Manufacturers Alliance of Automobile Manufacturers position on climate change that reducing transportation sector greenhouse gas emissions will require the mass market commercialization of electric vehicles. That includes technologies such as hybrid electrics, plug-in hybrid electrics, battery electrics, and fuel cell vehicles. Widespread consumer acceptance of these technologies will require that efforts be focused on important considerations such as: supporting infrastructure, incentives for consumer adoption, the alignment of regulatory efforts and the removal of market barriers. One example of how the trade association has attempted to influence climate change policy is through the issuance of statements on behalf of its members. The Auto Alliance has called for a single, national program because conflicting requirements from several regulatory bodies raise costs, ultimately taking money out of consumers' pockets and hurting sales. We all want to get more fuel-efficient autos on our roads, and a single, national program with a strong midterm review helps us get closer to that shared goal.

### **How have you, or are you attempting to, influence the position?**

GM is an active supporter of Automobile Manufacturers Alliance of Automobile Manufacturers. GM's position is consistent with the trade association's position so there is no need to influence the position.

## **C12.3e**

### **(C12.3e) Provide details of the other engagement activities that you undertake.**

GM was a founding signatory for the Renewable Energy Buyer’s Alliance and a founding member of REBA, along with the Business Renewables Center. GM is an active member of Solar Energy Industry Association (SEIA) and American Wind Energy Association (AWEA).

## **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?**

GM’s Global Public Policy (GPP) group is responsible to ensure that all of our direct (e.g.: government relations) and indirect activities (e.g.: membership in various organizations) that influence climate change policy are consistent with the Company's climate change strategy. The GPP has four primary business processes in place to ensure consistency between our actions and strategy:

1) Policy position development process

2) GM Political Action Committee candidate selection process

3) Strategic External Stakeholder Engagement process

4) GM Corporate Giving & Global Philanthropy budget and grant approval process

Overseeing the first three processes and supporting the fourth process is the GPP leadership team which includes GM’s executive vice president of Law and Public Policy and direct reports. GM’s executive vice president of Law and Public Policy is on GM’s Executive Leadership Team, GM’s most senior management body which includes the CEO, CFO, and President. Regular weekly and monthly meetings have been established to review, analyse, debate, and decide on positions and partnerships to ensure consistency between the Company’s strategy, action, and position on climate change. GM’s vice president of global government relations and GM’s vice president of GM North America Public Policy play a key role in ensuring day-to-day consistency between our actions and strategy. Furthermore, GM’s executive vice president of Law and Public Policy and direct reports support in a variety of ways the review and approval of organizations that receive funding primarily along the areas of STEM, Safety, and Sustainable Communities. GM’s Corporate Giving and Global Philanthropy also provides funding to address energy and environmental issues. Therefore, organizations addressing climate change such as the World Wildlife Fund are recipients of philanthropic grants. An example of aligning process with climate change strategy is GM’s recent contribution to the WWF in support of science based targets and renewable energy. GM belongs to numerous organizations that take positions on many issues. It is not uncommon that an organization may take a different position than GM. In regard to climate change, GM makes public its position on climate to ensure there is no confusion on where GM stands. However, GM may consider leaving an organization as it did when GM decided to no longer provide funding to the Heartland Institute and American Legislative Exchange Council due to their positions against addressing climate change.

## **C12.4**

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

### **Publication**

In mainstream reports

### **Status**

Complete

### **Attach the document**

1

[GeneralMotorsCompany\_10K\_20180206.pdf](https://www.cdp.net/fr/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/tT5AH1ahvkqLY4DSnGY_BA/GeneralMotorsCompany10K20180206.pdf)

### **Content elements**

Strategy

Risks & opportunities

Emission targets

### **Publication**

In voluntary sustainability report

### **Status**

Complete

### **Attach the document**

1

[GM\_2017\_SR.pdf](https://www.cdp.net/fr/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/jhLiEaVeKUSSyC2bvJekdw/GM2017SR.pdf)

### **Content elements**

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

### **Publication**

In voluntary communications

### **Status**

Complete

### **Attach the document**

1

[GM’s Vision Drives Value for the Company, Communities and Future Mobility.pdf](https://www.cdp.net/fr/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/ApROtJe7HUGuF5y874LuVg/GMsVisionDrivesValuefortheCompanyCommunitiesandFutureMobility.pdf)

### **Content elements**

Strategy

Risks & opportunities

Emissions figures

Emission targets

## **C14. Signoff**

## **C-FI**

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

## **C14.1**

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

|  |  |  |
| --- | --- | --- |
|  | **Job title** | **Corresponding job category** |
| Row 1 | Executive Vice President and Chief Financial Officer | Chief Financial Officer (CFO) |