

# Welcome to your CDP Climate Change Questionnaire 2022

## C0. Introduction

### C0.1

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

General Motors Company (“GM”) is a global company committed to pioneering the innovations that move and connect people to what matters. We design, build and sell trucks, crossovers, cars and automobile parts and provide software-enabled services and subscriptions worldwide. Our automotive operations meet the demands of our customers through our automotive segments: GM North America (GMNA) and GM International (GMI) with vehicles developed, manufactured and/or marketed under the Buick, Cadillac, Chevrolet and GMC brands. We also have equity ownership stakes in entities that meet the demands of customers in other countries, primarily in China, with vehicles developed, manufactured and/or marketed under the Baojun, Buick, Cadillac, Chevrolet and Wuling brands. Cruise is our global segment responsible for the development and commercialization of autonomous vehicle technology.

With global headquarters in Detroit, Michigan, GM employs ~146,000 people. At December 31, 2021, we had over 100 locations in the U.S. (excluding Cruise, our automotive financing operations and dealerships), which are primarily for manufacturing, assembly, distribution, warehousing, engineering and testing. We have manufacturing, assembly, distribution, office or warehousing operations in 29 countries, including equity interests in associated companies, which perform manufacturing, assembly or distribution operations. The major facilities outside the U.S., which are principally vehicle manufacturing and assembly operations, are located in Brazil, Canada, China, Mexico and South Korea.

GM’s sustainability strategy is led at the enterprise level to ensure a holistic approach across the company. Our strategy is led by senior leaders throughout the organization. Our chief sustainability officer is the enterprise-wide leader of sustainability and directs initiatives through the Office of Sustainability (SO). The SO has been strategically designed to ensure accountability for key sustainability targets and initiatives at the highest levels of the company; nurture a culture of sustainability across the organization; track and measure progress through transparent disclosure; and engage with stakeholders on relevant matters.

GM is proud of its long-standing commitment to protect human health and the environment. We continually assess the environmental impacts of our activities, products, and services in

accordance with our Global Environmental Policy and are committed to reducing or eliminating these impacts through the establishment of appropriate objectives and targets. GM's Guiding Environmental Commitments are the foundation of this policy and have been in place for more than 25 years. These Commitments now serve as a guide for all GM employees and partners worldwide. They encourage environmental consciousness in both daily conduct and in the planning of future products and programs, and support and embrace GM's purpose, values, and our vision. For example, our commitments include:

- Preventing deforestation, conserving water and taking actions that preserve water quality, caring for natural resources in and around our facilities and the communities where we operate.
- Using renewable energy at our facilities and sites globally and advocating for policies that promote renewable energy use and demand.
- Recognizing that the transportation sector is a leading contributor to global greenhouse gas emissions and our obligation to reduce them in the transition to a low carbon future. We have committed to an all-electric future with a core focus on zero emission battery EVs as part of our long-term strategy to reduce petroleum consumption and greenhouse gas (GHG) emissions.

GM is a signatory to the United Nations Global Compact, which endorses a framework of principles in the areas of human rights, labor, the environment, and anti-corruption. In 2021, GM signed the UN Global Compact - CEO Water Mandate to support global water security. In addition, GM's commitment supports the Global Compact's ten principles and the company's intent to maintain the principles and to evaluate related global best practices that may be applicable to GM.

GM is reporting GHG emissions to CDP using the GHG Protocol, unless noted otherwise, for operations (Scope 1 & 2) where we have operational control for GHG emissions, owned or leased facilities, and joint ventures as applicable, as well as for indirect emissions (Scope 3) from upstream and downstream activities. We will be reporting Scope 1 and 2 emissions by North America, South America, and International (rest of world), and company wide for Scope 3.

Unless otherwise stated, GM Financial, our financing services provider, and Cruise, our autonomous vehicle subsidiary, are not included in the report. Dollar amounts presented within this report are stated in U.S. dollars.

## C0.2

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

	Start date	End date	Indicate if you are providing emissions data for past reporting years
Reporting year	January 1, 2021	December 31, 2021	No

## C0.3

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

Argentina  
Australia  
Brazil  
Canada  
Chile  
China  
Colombia  
Ecuador  
Egypt  
Ireland  
Japan  
Mexico  
Philippines  
Republic of Korea  
Russian Federation  
Switzerland  
United States of America

## C0.4

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

USD

## C0.5

**(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.**

Operational control

## C-T00.7/C-TS0.7

**(C-T00.7/C-TS0.7) For which transport modes will you be providing data?**

Light Duty Vehicles (LDV)

## C0.8

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

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
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Yes, an ISIN code	37045V1008
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## C1. Governance

### C1.1

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

Yes

#### C1.1a

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

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	<p>The company's risk governance is facilitated through a top-down and bottom-up structure, with the tone established at the top by the Board Chair and CEO, who is also our chief risk officer, and other members of management, specifically the Senior Leadership Team (SLT). The SLT also utilizes our Risk Advisory Council, an executive-level body with delegates from each business unit, to discuss and monitor the most significant enterprise and emerging risks in a cross-functional setting. They are tasked with championing risk management practices and integrating them into their functional or regional business units.</p> <p>Management of climate-related risks and opportunities ultimately resides with the CEO, who leads our SLT. This group includes the executive vice president of global manufacturing to whom our chief sustainability officer (CSO) reports. The group is responsible for ensuring climate-related considerations are incorporated into the company's overall business strategy and that climate-related risks are considered in GM's enterprise risk management framework and decision-making processes. The CSO chairs the SO and works cross-functionally to integrate sustainability across the enterprise.</p> <p>An example of climate-related decisions overseen by the CEO can be seen in the CEO Letter to Shareholders:</p> <ul style="list-style-type: none"> <li>• Launching more EVs faster is the catalyst for growth, and we are accelerating our volumes, growing to 1 million units of EV capacity in North America by the end of 2025, and expanding from there.</li> <li>• Delivering millions of affordable EVs is a key step toward delivering on our commitment to achieve carbon neutrality in our global products and operations by 2040 and eliminate tailpipe emissions from light-duty vehicles by 2035. As we accelerate toward our all-electric future and carbon-neutral goals, it has become</li> </ul>

	<p>increasingly apparent that we must engage with all our partners and stakeholders to make the greatest possible positive impact on the planet.</p>
<p>Chief Sustainability Officer (CSO)</p>	<p>GM's sustainability strategy is led by senior leaders throughout the organization. Our chief sustainability officer is the enterprise-wide leader of sustainability and directs initiatives through the Office of Sustainability. The Office of Sustainability has been strategically designed to ensure accountability for key sustainability targets and initiatives at the highest levels of the company; nurture a culture of sustainability across the organization; track and measure progress through transparent disclosure; and engage with both internal and external stakeholders on relevant matters. The Office of Sustainability leaders are charged with innovating and advocating as well as supporting social responsibility and transparent corporate practices.</p> <p>Management of climate-related risks and opportunities ultimately resides with the CEO, who leads our SLT. This group includes the executive vice president of global manufacturing to whom our chief sustainability officer (CSO) reports. The group is responsible for ensuring climate-related considerations are incorporated into the company's overall business strategy and that climate-related risks are considered in GM's enterprise risk management framework and decision-making processes. The CSO chairs the SO and works cross-functionally to integrate sustainability across the enterprise.</p> <p>Examples of areas overseen by the SO:</p> <ul style="list-style-type: none"> <li>• Tracks and monitors execution of public commitments made by the company related to sustainability goals such as carbon neutrality and approved Science Based Target initiatives (SBTi).</li> <li>• Works with the enterprise to ensure responsible sourcing and consumption of materials and production of vehicles.</li> <li>• Coordinates with the business on the strategic design and implementation of our electric vehicle (EV) infrastructure.</li> <li>• Reviews and approves social and environmental sustainability strategies developed cross-functionally, including human rights and sustainable materials strategies, and those that are implemented on the operational level.</li> <li>• Reviews and approves annual Sustainability Report and ESG disclosures, including TCFD.</li> </ul>
<p>Board-level committee</p>	<p>The GM Board of Directors is committed to overseeing the company's integration of environmental, social and governance (ESG) principles throughout the enterprise, and oversees the company's ESG risks, priorities and opportunities.</p> <p>The Board is committed to sound corporate governance policies and practices that are designed and routinely assessed to enable GM to operate our business responsibly, with integrity, and to position GM to compete more effectively, sustain our success and build long-term shareholder value. The Board works with management to integrate ESG principles into the company's business strategy. This includes agenda items and discussions related to ESG topics at Board and committee meetings.</p>

	<p>Expertise related to environmental, social and/or governance-related issues, including climate, are among the qualifications considered prior to recommending an incumbent, replacement or additional director to the Board.</p> <p>The Board discharges its risk oversight responsibilities, in part, through delegation to its committees: Audit; Executive; Executive Compensation; Finance; Governance and Corporate Responsibility (GCRC); and Risk and Cybersecurity. As a full Board, and through these committees, the Board is committed to overseeing the company’s integration of ESG principles throughout GM’s business and managing the related risks and opportunities.</p> <p>Each committee has a written charter setting forth its purpose, authority and duties. Overall, the committees enhance the Board’s oversight of areas that are critical to GM’s corporate responsibility and sustainability efforts, including transparent and reliable financial reporting; risk identification and mitigation (including climate change and other ESG issues); ethics and compliance; product and workplace safety; supply chain and human rights; pay-for-performance; data security; diversity, equity and inclusion; Board and management succession planning; consideration of shareholder proposals; and political and lobbying priorities and expenditures.</p> <p>In 2021, each Board committee further incorporated ESG responsibilities into their charters in recognition that ESG risks are all-encompassing. As an example, in 2022, the Audit Committee and GCRC approved the company’s annual Sustainability Report and associated disclosures, including TCFD.</p>
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## 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 Monitoring implementation and	<p>The Board discharges its risk oversight responsibilities, in part, through delegation to its committees.</p> <p>Each committee has a written charter setting forth its purpose, authority and duties. Overall, the committees enhance the Board’s oversight of areas that are critical to GM’s corporate responsibility and sustainability efforts, including transparent and reliable financial reporting; risk identification and</p>

	<p>performance of objectives</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<p>mitigation (including climate change and other ESG issues); ethics and compliance; product and workplace safety; supply chain and human rights; pay-for-performance; data security; diversity, equity and inclusion; Board and management succession planning; consideration of shareholder proposals; and political and lobbying priorities and expenditures.</p> <p>Governance and Corporate Responsibility Committee (GCRC) The GCRC oversees the Company's development of ESG initiatives, strategies, policies and practices related to matters of sustainability and corporate responsibility that have a material impact on the company. The GCRC is responsible for tracking GM's ESG scorecard and conducts annual reviews of ESG reporting standards, lobbying activities, corporate philanthropy and human rights (including responsible sourcing practices and policies). In addition, the GCRC approves the company's annual Sustainability Report and associated disclosures, including TCFD.</p> <p>Risk and Cybersecurity Committee (RCC) The committee oversees risks related to the company's key strategic, enterprise and cybersecurity risks, including climate change, workplace and product safety and privacy. The RCC considers ESG-related risks as part of the company's enterprise risk profile. This includes, but is not limited to, transitions associated with climate change and achieving our vision of an all-electric future. The committee is regularly updated on enterprise risk trends and emerging risks, as well as management's response and/or mitigation plans that are being executed.</p> <p>The Audit Committee (AC) In addition to its oversight of the quality, integrity and compliance of GM's financial statements, the AC began reviewing the process and control procedures for ESG disclosures in 2021. In 2022, the committee began approving the company's annual Sustainability Report and TCFD response prior to publication.</p> <p>Executive Compensation Committee (ECC) Starting in 2022, the ECC will annually:</p>
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		<ul style="list-style-type: none"> <li>• Evaluate whether the company’s ESG and sustainability goals and milestones are effectively integrated into the compensation programs.</li> <li>• Review compensation plans for executives to confirm alignment to GM’s sustainability risks and opportunities.</li> <li>• Consider shareholder feedback relative to the alignment of GM’s sustainability goals with respect to the annual shareholder say-on-pay vote.</li> </ul>
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## C1.1d

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

	<b>Board member(s) have competence on climate-related issues</b>	<b>Criteria used to assess competence of board member(s) on climate-related issues</b>
Row 1	Yes	<p>Last year, the Board conducted a formal ESG self-evaluation. The evaluation was designed to ensure that the Board possesses the requisite skills and expertise to oversee the Company’s ESG opportunities, priorities, and risks. The Governance Committee, led by our Independent Lead Director, spearheaded this effort by asking directors to consider their expertise across the following key ESG subject matter areas:</p> <ul style="list-style-type: none"> <li>• Environmental: Greenhouse gas emissions; raw material sources; the physical impacts of climate change; air quality; waste and hazardous materials management; product design and lifecycle management; water and wastewater management; energy efficiency management; and ecological impacts.</li> <li>• Social: DE&amp;I; data privacy; human rights; community relations; workplace health and safety; supply chain management; human capital management; consumer privacy; product quality and safety; and labor practices.</li> <li>• Governance: Public company board governance; legal and regulatory matters; executive compensation; compliance and business ethics; anti-competitive practices; risk management; and ESG reporting principles and frameworks (e.g., Task Force on Climate-Related Financial Disclosures; Value Reporting Foundation). Upon the conclusion of this evaluation, the Board determined that it has strong ESG expertise and possesses a broad range of skills, qualifications,</li> </ul>



		<p>and attributes that will support the Company’s ambitious EV transition, growth strategy, and sustainability and DE&amp;I goals. The Board further determined it would not benefit at this time from adding a “special purpose” director exclusively on the basis of ESG criteria. The Board believes that it makes decisions as a group and has a collective responsibility to make informed decisions on a deliberative basis on all issues, including those related to ESG.</p> <p>As an example, one of the directors serving on three different committees (Audit, Compensation, and Finance) have developed environmental expertise as a member of the board of Conservation International. In that capacity, they leverage their scientific training to advocate for natural climate solutions. GM benefits from this director’s experience in this area as it seeks to create a world with zero emissions.</p>
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## C1.2

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

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify Executive Vice President of Global Manufacturing	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 (do not include the names of individuals).**

The company’s risk governance is facilitated through a top-down and bottom-up structure, with the tone established at the top by the Board Chair and CEO, who is also our chief risk officer, and other members of management, specifically the Senior Leadership Team (SLT). The SLT also utilizes our Risk Advisory Council, an executive-level body with delegates from each business unit, to discuss and monitor the most significant enterprise and emerging risks in a cross-functional setting. They are tasked with championing risk management practices and integrating them into their functional or regional business units.

Management of climate-related risks and opportunities ultimately resides with the CEO, who leads our SLT. This group includes the executive vice president of global manufacturing to whom our chief sustainability officer (CSO) reports. The group is responsible for ensuring climate-related considerations are incorporated into the company’s overall business strategy

and that climate-related risks are considered in GM's enterprise risk management framework and decision-making processes. The CSO chairs the Sustainability Office, a team of teams approach, to help ensure that functional areas across the enterprise have accountability for their respective function's role in accelerating the company vision. Within each functional area, a single leader represents sustainability objectives, and owns sustainability goals and metrics.

Examples of areas overseen by the SO:

- Tracks and monitors execution of public commitments made by the company related to sustainability goals such as carbon neutrality and approved Science Based Target initiatives (SBTi).
- Works with the enterprise to ensure responsible sourcing and consumption of materials and production of vehicles.
- Coordinates with the business on the strategic design and implementation of our electric vehicle (EV) infrastructure.
- Reviews and approves social and environmental sustainability strategies developed cross-functionally, including human rights and sustainable materials strategies, and those that are implemented on the operational level.
- Reviews and approves annual Sustainability Report and ESG disclosures, including TCFD.

In addition, the CSO solicits feedback from Internal and External advisory groups related to Climate Change issues. The SLT and Executive Vice President of Global Manufacturing receives regular updates and is involved in key decisions that further our mid-term and long-term strategic objectives including our efforts to reduce GHG emissions through our transition to an all-electric future with zero emissions. As an example, GM's updated Renewable Energy goal (RE-100) for operations was pulled forward from 2050 to 2035 and was reviewed by the CEO, CSO, and Executive Vice President of Global Manufacturing and approved.

During 2021, our ESG management teams also continued to expand throughout the organization, including individuals with climate expertise in areas such as global purchasing and supply chain (GPSC), engineering, legal and public policy, among others. We are strengthening our internal bench to increase our ability to identify and manage climate-related risks and continually ensure operational teams are aligning our business strategy with our ESG strategy.

#### **CO2 Governance Committee**

GM is focused on reducing CO2 emissions from use of sold products, primarily by transitioning its product line to all-electric vehicles. GM tracks projected fleet-wide CO2 emissions on a regional basis to ensure compliance to increasingly stringent regulations in all our markets. Our CO2 governance process includes senior-level representation from all relevant functions, including product development, planning, sales and marketing, finance, public policy and legal.

#### **Manufacturing Leadership Team (MLT)**

The scale of our manufacturing operations also presents significant opportunities for emissions reduction.

On a monthly basis, GM's progress toward science-based targets for Scopes 1, 2 and 3, as well as other key climate-related indicators, such as water and waste, are reviewed and tracked against internal targets by the MLT. Progress toward projects and initiatives to support our targets are also reviewed by the MLT.

### Local Management

At the local manufacturing plant level, management is responsible for tracking energy consumption and continuously analyzing and reviewing opportunities for energy conservation, as well as monitoring potential climate-related impacts, including catastrophic risks or losses from natural events that may occur at their site. Similar analysis and evaluation at the operational level occur when selecting new sites as well as considering new suppliers. The board works with the SLT through the different committees to integrate ESG principles into the company’s business strategy. This includes agenda items and discussions related to ESG topics at board and the different committee meetings.

## C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	<p>The Compensation Committee regularly reviews and discusses plan performance at each meeting. The committee considers many factors when electing to make plan changes for future incentive plans, including results, market trends, and feedback from its independent compensation consultant and shareholders. These changes further align our executive compensation program with our all-electric future and directs additional focus on Company growth and ESG performance, which will better support our path to EV leadership and expansion into new markets and technologies.</p> <p>The Executive Compensation Committee annually:</p> <ul style="list-style-type: none"> <li>• Evaluates whether the company’s ESG and sustainability goals and milestones are effectively integrated into the compensation programs.</li> <li>• Reviews compensation plans for executives to confirm alignment to sustainability risks and opportunities.</li> <li>• Considers shareholder feedback relative to the alignment of sustainability goals with respect to the annual shareholder say-on-pay vote.</li> </ul>

### C1.3a

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

Entitled to incentive	Type of incentive	Activity incentivized	Comment
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<p>Corporate executive team</p>	<p>Monetary reward</p>	<p>Emissions reduction project Emissions reduction target</p>	<p>The Company views shareholder engagement as a continuous process and annually seeks feedback directly from our shareholders. Through these engagements, we received positive feedback in support of our executive compensation program and, in particular the Compensation Committee’s decision to further drive accountability and reinforce our EV and growth strategy, safety culture, and ESG priorities. The ongoing dialog with shareholders this past year provided critical feedback that was used in the development of our 2022 LTIP design, which further aligns the interest of our executives to those of our shareholders.</p> <p>We considered shareholder feedback in making changes to our LTIP design. For the 2022 LTIP design, we replaced Relative ROIC-Adjusted with absolute EBIT-Adjusted Margin, maintained Relative TSR, and added Electric Vehicle performance measures that reward performance for GMNA EV Volume, GMNA EV Launch Timing, and GMNA EV Launch Quality. These changes further link the long-term compensation of our executives to the long-term EV strategy.</p> <p>ESG performance continues to be a focus for the Company and our shareholders. The Compensation Committee factors ESG performance into strategic goals for each NEO. We enhanced our disclosure to demonstrate our continued work towards ESG performance and provided greater detail into the goal setting process for our strategic goals portion of the STIP. We identify ESG results with a green leaf in the “Our Company Performance” section beginning on page 47 of our 2022 Proxy Statement and the “Performance Results and Compensation Decisions” section for our NEOs beginning on page 61 of our 2022 Proxy Statement</p> <p>Green leaf action examples on Executing our vision are:</p> <p>Increased investment in EV and AV technology to \$35 billion from 2020 to 2025 to achieve our commitment of EV leadership in North America by mid-decade and safely commercialize self-driving technology</p> <p>Announced SBTi-validated, science-based emission reduction targets that align with the Paris Agreement,</p>
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			<p>plans to be carbon neutral in our global products and operations by 2040, and eliminate tailpipe emissions from new light-duty vehicles globally by 2035</p> <p>Introduced Ultium Charge 360, a holistic charging approach integrating charging networks, GM vehicle mobile apps, and other products and services, to simplify and improve GM EV owners' overall charging experience</p>
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## C2. Risks and opportunities

### C2.1

**(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?**

Yes

#### C2.1a

**(C2.1a) How does your organization define short-, medium- and long-term time horizons?**

	From (years)	To (years)	Comment
Short-term	1	3	GM defines short-term as a period covering one to three years and includes annual budgets for CAPEX and OPEX. As an example, GM plans to source 100% renewable electricity at sites in the United States by 2025.
Medium-term	3	5	GM's medium-term plan includes 3-5 years of budgets for resources and funds. An example includes our more than \$35B planned investment from 2020-2025 in EV and AV.
Long-term	5		Long-term is open-ended and is extended based on the type of risk or opportunity. As an example, GM's Carbon Neutral commitment in our global products and operations extends to 2040 and approved SBTi targets for operations and sold products with a target year of 2035.

#### C2.1b

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

Within our enterprise risk management process, GM's risk assessment process includes both a quantitative and qualitative assessment of risks and opportunities. From a quantitative perspective, GM evaluates risks and opportunities based on their potential impact on certain key financial statement amounts and operating results (e.g., assets, revenues, earnings, cash flow, etc.). From a qualitative perspective, GM evaluates risks and opportunities based on the

consideration of other relevant facts and circumstances, including strategic significance, potential impact on reputation, and probability of occurrence. For example, while the water-related risks at any individual GM facility may not be substantive to GM as a whole, GM could face a substantive water-related risk related to its ability to build new manufacturing capacity in regions without sufficient water supply to support necessary production volumes. Therefore, risks identified in this report as having a "substantive" impact will vary from risk to risk in terms of quantitative and qualitative perspectives. The use of "significant," "substantive," "material," or "materiality" in this report and our other sustainability reporting is not related to or intended to convey matters or facts that could be deemed "material" to a reasonable investor as referred to under U.S. securities laws or similar requirements of other jurisdictions.

## C2.2

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

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#### Value chain stage(s) covered

Direct operations  
Upstream  
Downstream

#### Risk management process

Integrated into multi-disciplinary company-wide risk management process

#### Frequency of assessment

More than once a year

#### Time horizon(s) covered

Short-term  
Medium-term  
Long-term

#### Description of process

GM's risk management program includes a governance structure that spans across the company, both horizontally, across our functions and regions, and vertically with our Risk and Cybersecurity Committee of our Board sitting at the top and setting the tone along with our Senior Leadership Team (SLT). Our key governance forums, such as our Board committee, regular CEO/CFO risk reviews, and our Risk Advisory Council which is made up of executives who represent all our business units, allow for paths of timely escalation when needed and regular dialogue on the most critical risks to our company.

Our Strategic Risk Management (SRM) team facilitates an annual enterprise risk assessment to identify our most critical risks which includes but is not limited to extensive research, surveying our top 200+ executives, and conducting SWOT analysis workshops across our business units to also understand where our opportunities lie. ESG, including climate change, related risks are considered as part of this process. To

supplement the annual process and ensure our risk landscape evolves at the speed of business, quarterly risk assessments “sprints” are conducted to understand how our enterprise risks are evolving, new risks that are emerging, and how management is responding to both.

As risks are identified, risk owners within our business are responsible for further assessing their potential financial, strategic, and/or reputational impact as well as the probability for them to occur. Owners often build out sub risk components and mitigation plans are developed as appropriate. Enterprise-level risks are thoroughly reviewed by members of our SLT.

Our Chief Sustainability Officer (CSO) leads our efforts in assessing and managing our climate-related risks and opportunities, working with a cross-functional group that includes but is not limited to Manufacturing, Public Policy, Legal, Portfolio Planning, Global Purchasing, and Supply Chain.

During 2021, we took steps to develop and refine our processes for identifying and evaluating climate-related risks. In collaboration with a third-party consultant, our corporate sustainability team convened and hosted a series of workshops with leaders from across key functions of the business, including public policy, GHG emissions experts, portfolio planning, strategic risk management, supply chain, legal and others. Through these workshops, we developed and validated an initial risk identification process as well as helped to ensure a strong and consistent understanding of the process for analyzing climate-related risks

Over the course of multiple days and sessions, we discussed potential risks and opportunities to determine those most applicable to our business, and then to qualitatively prioritize them.

Over the course of 2022, we will continue refining our risk identification process and assessing our exposure to these risks by partnering with a respected third party to employ their climate risk modeling platform. We will quantitatively evaluate both physical and transition risks under at least two to three different climate change scenarios. We will be exploring how to further integrate the results from this assessment into strategic decision-making, as well as opportunities to internalize some of these processes and tools to enable us to efficiently conduct these assessments in the future.

GM approaches relevant climate-related risks on a risk-by-risk basis. The physical and transition risks identified earlier in this document are relevant to different parts of the business. For example, the risk of increased flooding and extreme weather events impacting the production, logistics and procurement of products from suppliers is managed by our GPSC organization. Securing consistent, resilient and sustainable supply chains for key materials is a strategic priority for GPSC. The organization maintains a “command center” that monitors real-time conditions and data from multiple sources to identify such events around the world and map them to our suppliers. In the event of an anticipated or actual disruption, alerts are quickly sent to the relevant teams internally, and contingency plans are created and implemented.



## C2.2a

### (C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Our products are subject to extensive laws, regulations, and policies, including those related to vehicle emissions and fuel economy standards, which can significantly increase our costs and affect how we do business. We are significantly affected by governmental regulations on a global basis that can increase costs related to the production of our vehicles and affect our product portfolio, particularly regulations relating to fuel economy standards and GHG emissions. Meeting or exceeding the requirements of these regulations is costly, often technologically challenging and may require phase out of internal combustion propulsion in certain major jurisdictions, and these standards are often not harmonized across jurisdictions. We anticipate that the number and extent of these and other regulations, laws and policies, and the related costs and changes to our product portfolio, may increase significantly in the future, primarily motivated by efforts to reduce GHG emissions. These government regulatory requirements, among others, could significantly affect our plans for global product development and, given the uncertainty surrounding enforcement and regulatory definitions and interpretations, may result in substantial costs, including civil or criminal penalties. In addition, an evolving but un-harmonized emissions and fuel economy regulatory framework that could include specific sales mandates may limit or dictate the types of vehicles we sell and where we sell them, which can affect revenues. An example of this is in the U.S., where NHTSA promulgates and enforces Corporate Average Fuel Economy (CAFE) standards for three separate fleets: domestic cars, import cars and light-duty trucks. GM's 2021 U.S. vehicles sales volume was 35% of our total global vehicles sales. Thus, our shift to electric vehicles is an important mitigator of this risk.
Emerging regulation	Relevant, always included	We are subject to risks associated with climate change, including increased regulation of GHG emissions, changing consumer preferences and other risks related to our transition to EVs and the potential increased impacts of severe weather events on our operations and infrastructure. Increasing attention to climate change, increasing societal expectations on companies to address climate change and changes in consumer preferences may result in increased costs, reduced demand for our products, reduced profits, risks associated with new regulatory requirements and the potential for increased litigation and governmental investigations. Climate change regulations at the federal, state or local level or in international jurisdictions could require us to further limit emissions associated with customer use of products



		<p>we sell, change our manufacturing processes or product portfolio or undertake other activities that may require us to incur additional expense, which may be material. Part of our strategy to address these risks includes our transition to EVs. Our vision for the future is a world with zero crashes, zero emissions and zero congestion, which guides our growth-focused strategy to invest in electric vehicles (EVs) and autonomous vehicles (AVs), software-enabled services and subscriptions and new business opportunities, while strengthening our market position in profitable internal combustion engine (ICE) vehicles, such as trucks and sport utility vehicles (SUVs). We have committed to an all-electric future with a core focus on zero emission battery EVs as part of our long-term strategy to reduce petroleum consumption and greenhouse gas (GHG) emissions. As a result, we have committed to making total EV and AV investments of more than \$35.0 billion from 2020 through 2025.</p>
Technology	Relevant, always included	<p>Many of our advanced technologies, including AVs, present novel issues with which domestic and foreign regulators have only limited experience, and will be subject to evolving regulatory frameworks. Any current or future regulations in these areas could impede the successful commercialization of these technologies and impact whether and how these technologies are designed and integrated into our products, and may ultimately subject us to increased costs and uncertainty. An example of advanced automation is Super Cruise, the world's first truly hands-free driver assistance technology, which was introduced in 2017 with the 2018 Cadillac CT6 and provided drivers with more than 140,000 miles of compatible roads in the U.S. and Canada. In 2019, the road network was expanded to 200,000 miles.</p>
Legal	Relevant, always included	<p>In the current uncertain regulatory framework, compliance costs for which we may be responsible and that are not reasonably estimable could be substantial. Alleged violations of fuel economy or emission 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 a material adverse effect on our profitability, financial condition and operations, including facility idling, reduced employment, increased costs and loss of revenue. We are subject to legal proceedings in the U.S. and elsewhere involving various issues, including emissions litigation.</p>
Market	Relevant, always included	<p>Our long-term strategy is dependent upon our ability to profitably deliver a broad portfolio of EVs. The production and profitable sale of EVs has become increasingly important to our long-term business as we accelerate our transition to an all-electric future. In 2021, we increased our commitment to investments in EV and AV technologies to more than \$35.0 billion from 2020 through 2025. Our EV strategy is dependent on our ability to deliver a broad portfolio of high-quality EVs</p>

		<p>that are competitive and meet consumer demands; reduce the costs associated with the manufacture of EVs, particularly with respect to batteries; increase vehicle range and the energy density of our batteries; license and monetize our proprietary platforms and related innovations; successfully invest in new technologies relative to our peers; develop new software and services; and leverage our scale, manufacturing capabilities and synergies with existing ICE vehicles. In addition, consumer adoption of EVs will be critical to the success of our strategy. Consumer adoption of EVs could be impacted by numerous factors, including the breadth of the portfolio of EVs available; perceptions about EV features, quality, safety, performance and cost relative to ICE vehicles; the range over which EVs may be driven on a full battery charge; the proliferation of charging infrastructure, in particular with respect to public EV charging stations; cost and availability of high fuel-economy ICE vehicles; volatility, or a sustained decrease, in the cost of petroleum-based fuel; failure by governments and other third parties to make the investments necessary to make infrastructure improvements, such as greater availability of cleaner energy grids and EV charging stations, and to provide economic incentives promoting the adoption of EVs; and negative feedback from stakeholders impacting investor and consumer confidence in our company or industry. If we are unable to successfully deliver on our EV strategy, it could materially and adversely affect our results of operations, financial condition and growth prospects, and could negatively impact our brand and reputation.</p>
Reputation	Relevant, always included	<p>We currently source a variety of systems, components, raw materials and parts from third parties. From time to time these items may have performance or quality issues that could harm our reputation and cause us to incur significant costs, particularly if the affected items relate to global platforms or involve defects that are identified years after production. Our ability to recover costs associated with recalls or other campaigns caused by parts or components purchased from suppliers may be limited by the suppliers' financial condition or a number of other reasons or defenses. Our transition to EVs includes a resilient, scalable and more sustainable North America-focused EV supply chain. Certain of the initiatives we have advanced in 2021 include sourcing silicon carbide power device solutions for GM's EV programs, processing cathode active material, sourcing U.S. lithium with more sustainable extraction methods and sourcing permanent magnets using locally sourced raw materials.</p>
Acute physical	Relevant, always included	<p>We are subject to risks associated with climate change, including the potential increased impacts of severe weather events on our operations and infrastructure. Increased intensity, frequency or duration of storms, droughts or other severe weather events as a result of climate change may disrupt our production and the production, logistics, cost and</p>

		<p>procurement of products from our suppliers and timely delivery of vehicles to customers, and could negatively impact working conditions at our plants and those of our suppliers. Any of the foregoing could have a material adverse effect on our financial condition and results of operations. An example is severe drought as described by The National Water Commission (Conagua), who warned of the drought suffered by more than 2,000 municipalities across Mexican territory. GM has assembly plants in the Mexican territory, including San Luis Potosi, Ramos Arizpe and Silao, Mexico, which accounted for approximately 10% of GM's global production in 2021. In response to this risk, the GM Manufacturing team performed a short-term risk assessment of water scarcity and elected to increase the capacity of water reuse equipment and operate it to mitigate the physical drought risks in Silao and Ramos Arizpe. The Manufacturing Leadership Team at GM manages mitigation of acute physical risks associated with facilities described above. If material to the business, the Executive Vice President of Global Manufacturing, also a member of the SLT, would work with the Board Risk &amp; Cybersecurity Committee for assistance, if needed.</p>
Chronic physical	Relevant, always included	<p>Chronic physical considerations for our facilities from climate change are included in risk assessments on a case by case basis. As Mexico production is important to GM, accounting for a meaningful amount of GM's global production, we developed a risk mitigation plan. At our Silao Assembly plant in Mexico, where non-renewable wells were identified as stressed, GM installed additional water reuse equipment resulting in GM increasing the amount of recycled water that reduces the water stress risk at Silao. The Manufacturing Leadership Team at GM manages mitigation of Chronic physical risks associated with facilities described above. If material to the business, the Executive Vice President of Global Manufacturing, also a member of the SLT, would work with the Board's Risk &amp; Cybersecurity Committee for assistance, if needed.</p>

## 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?**

Downstream

**Risk type & Primary climate-related risk driver**

Current regulation

Mandates on and regulation of existing products and services

**Primary potential financial impact**

Decreased revenues due to reduced demand for products and services

**Company-specific description**

We offer a broad portfolio of cars, cross overs, SUVs and trucks including Chevrolet Equinox, Chevrolet Silverado, GMC Sierra, GMC Hummer, Buick Encore, Buick Enclave, Cadillac XT, among others. Our operations and products are subject to extensive laws, regulations and policies, including those related to vehicle emissions and fuel economy standards, which can significantly increase our costs and affect how we do business. We are affected by governmental regulations on a global basis that can increase costs related to the production of our vehicles and affect our product portfolio. Meeting or exceeding the requirements of these regulations is costly, often technologically challenging and may require phase-out of internal combustion propulsion in certain major jurisdictions, and these standards are often not harmonized across jurisdictions. We anticipate that the number and extent of these and other regulations, laws and policies, and the related costs and changes to our product portfolio, may increase significantly in the future, primarily motivated by efforts to reduce GHG emissions. Specifically, fuel economy and GHG emission regulations at the federal, state or local level or in international jurisdictions could require us to further limit the sale of certain profitable products, subsidize the sale of less profitable ones, change our manufacturing processes, pay penalties or undertake other activities that may require us to incur additional expense, which may be material. These requirements may increase the cost of, and/or diminish demand for, our vehicles. For example, the State of California, announced that all new cars and passenger trucks sold in California will be required to be zero-emission vehicles by 2035. Washington, New York and Massachusetts have already passed or proposed similar initiatives. Based on S&P state registration data, sales of GM vehicles in these three states combined to approximately 15% of GM's U.S. sales in 2021. Being able to meet these requirements is critical to GM's success.

**Time horizon**

Medium-term

**Likelihood**

About as likely as not

**Magnitude of impact**

Low

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

8,600,000

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

**Explanation of financial impact figure**

Financial implications would vary widely depending on various factors, including specific details of the regulation, current market and economic conditions, and our specific strategic response to address and remain in compliance with such regulations. For illustrative purposes, a regulatory change that impacts 1% of our North America earnings before interest and taxes (EBIT)-adjusted could result in an estimated decrease in earnings of approximately \$8.6 million based on our reported 2021 EBIT-adjusted for North America and using a one month impact in this example which assumes we would actively monitor the scenario on a monthly basis to adjust and implement appropriate mitigating strategies to limit the impact (~103.2 million divided by 12 months).

Note that this figure does not consider the multifaceted financial impacts that accompany any large initiative that drives change in strategy (including those related to product portfolio) that could be significantly smaller or larger than this example demonstrates.

**Cost of response to risk**

7,900,000,000

**Description of response and explanation of cost calculation**

We are affected by governmental regulations on a global basis that can increase costs related to the production of our vehicles and affect our product portfolio. We anticipate that the number and extent of these and other regulations, laws and policies, and the related costs and changes to our product portfolio, may increase significantly in the future, primarily motivated by efforts to reduce GHG emissions.

As these regulations continue to develop and we move closer to our vision of an all-electric portfolio, we also are improving the efficiency of ICE vehicles.

Continual improvements in vehicle engine and transmission efficiency, as well as vehicle weight, have helped us to eliminate excess materials used in manufacturing, while reducing fuel use and costs for customers. For example, the 4WD Crew Cab Silverado has seen an improvement in tailpipe CO<sub>2</sub> emissions of 25% from 2000 through 2020\*. Within GM, we have institutionalized extensive governance processes that predict, plan, measure and assess our fleet's fuel efficiency and emissions

performance according to established government test procedures on a dynamic and country-by-country basis.

As an example, our models containing stop-start technology enable the vehicle's engine to turn off when the car is stopped or idled. These engines provide a fuel economy benefit of between approximately 3% to 5%, tangibly decreasing CO2 emissions for consumers who face extended idle times. In the U.S., to date, stop-start engine technology is expected to save GM customers 1.1 billion gallons of fuel and 10.2 million metric tons of CO2 emissions over the lifetime operations of their vehicles. The cost of response to this risk noted above represents \$7.9 billion in research and development expenses as reported in 2021, which includes costs for research, manufacturing engineering, product engineering and design and development activities primarily related 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, and the safety of drivers and passengers.

\*Data prior to July 2009 corresponds to General Motors Corporation

### **Comment**

Part of our strategy to address these risks includes our transition to EVs, which presents additional risks, including reduced demand for, and therefore profits from, our ICE vehicles, which we plan to use to fund our growth strategy; higher costs related to EV technologies impacting profitability compared to ICE vehicles; and risks related to the success of our EV strategy. There are limits on our ability to achieve fuel economy improvements over a given timeframe, primarily relating to the cost and effectiveness of available technologies, changes in vehicle mix, lack of willingness of consumers to absorb the additional costs of new technologies, the appropriateness (or lack thereof) of certain technologies for use in particular vehicles, the widespread availability (or lack thereof) of supporting infrastructure for new technologies and the human, engineering and financial resources necessary to deploy new technologies across a wide range of products and powertrains in a short time.

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### **Identifier**

Risk 2

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

Direct operations

### **Risk type & Primary climate-related risk driver**

Acute physical

Drought

### **Primary potential financial impact**

Decreased revenues due to reduced production capacity

### **Company-specific description**

Increased intensity, frequency or duration of storms, droughts or other severe weather events as a result of climate change may disrupt our production and the production, logistics, cost and procurement of products from our suppliers and timely delivery of vehicles to customers and could negatively impact working conditions at our plants and those of our suppliers. Any of the foregoing could have a material adverse effect on our financial condition and results of operations. Increases in the frequency of drought conditions can further depress water availability for production in water-stressed areas. GM has production facilities in Mexico at Silao Assembly, San Luis Potosi Assembly, and Ramos Arizpe Assembly, an area that was hit hard by drought in recent years, and there is a risk that increases in the frequency of such events could temporarily disrupt production due to lack of water availability.

Mexico experienced one of its most widespread and intense droughts in decades. Nearly 85 percent of the country faced drought conditions in April of 2021 straining water resources and in 2011, drought conditions covered 95% of the country. GM facilities are located in central and northern Mexico and can potentially be affected by the low reservoir capacity and surface water availability. GM monitor's drought data models through CNA - Drought Monitoring tool which have showed increases on drought conditions comparison between 2003 and 2021 (Ramos Arizpe (80%) - Coahuila, San Luis Potosi - San Luis Potosi (60%), Silao- Guanajuato (80%), Toluca- Estado de México (0%). GM has taken steps to minimize water withdraw and discharge by implementing robust water recycling systems. We have increased the water recycling capacity at Ramos Arizpe and continue to update and maintain the ZLD in San Luis Potosi.

### **Time horizon**

Long-term

### **Likelihood**

Very unlikely

### **Magnitude of impact**

Medium

### **Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

### **Potential financial impact figure (currency)**

40,000,000

### **Potential financial impact figure – minimum (currency)**

### **Potential financial impact figure – maximum (currency)**

### **Explanation of financial impact figure**



For illustrative purposes, we estimate a 5% reduction in our production of certain vehicles in North America could approximate a \$40 million reduction in earnings before interest and taxes (EBIT)-adjusted, using a one month impact in this example and assuming production could not be recovered. It should be noted that financial impacts vary depending on the plant and vehicles for which production is temporarily stopped.

### **Cost of response to risk**

57,000,000

### **Description of response and explanation of cost calculation**

GM integrated water management into its annual business planning process and set targets for each facility to reduce water use intensity by 35% by 2035. Reduction methods are implemented at a facility level and include conservation with behavioral activities, improving equipment efficiency, and reuse. When plants are located in water-stressed areas, special consideration is given to water treatment technologies. In 2008, a Zero Liquid Discharge (ZLD) system was installed at our San Luis Potosi, Mexico Complex. The Complex produces vehicles and transmissions. The ZLD is being operated to reuse water in our operating 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 cost of implementation and updates throughout the last 10 years has been \$57 million and the cost for annual operation and maintenance are \$1.4 million a year.

The total cost of the response to risk, \$57 million, is the sum of two phases: ~\$41 million in initial development and installation, and an additional ~\$16M on upgrades to increase capacity and efficiency of the system.

The annual \$1.4 million operation and maintenance cost includes labor, chemicals needed to treat different water sources (DI, recycled, etc.), parts replacements (micro filtration, ultra-filtration, and RO membranes), extraction water and well maintenance as well as water sampling and analysis.

### **Comment**

## **C2.4**

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

Yes

## **C2.4a**

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



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**Identifier**

Opp1

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

Downstream

**Opportunity type**

Products and services

**Primary climate-related opportunity driver**

Development and/or expansion of low emission goods and services

**Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

**Company-specific description**

A key element in our EV strategy is Ultium, our all-new dedicated battery electric platform. Our first Ultium-based products launched with the GMC HUMMER EV and BrightDrop Zevo 600 in 2021, to be followed by the Cadillac LYRIQ in 2022. This all-new platform is flexible and will be leveraged across multiple brands and vehicle sizes, styles, and drive configurations, allowing for quick response to customer preferences and a shorter design and development lead time compared to our ICE vehicles.

Ultium is enabling GM to compete on an entirely new level and pursue nearly every customer type and preference in the market. Ultium represents a milestone achievement in electrification, with battery pack costs nearly 40% lower compared to the previous generation, and we expect the second generation Ultium packs will cost nearly 60% less than the batteries used today. The unique modularity and flexibility of the Ultium platform opens opportunities beyond our own vehicles. Ultium, together with our HYDROTEC fuel cell platform, gives GM the potential to transform a variety of transportation modes into zero-emission products.

Our development of (AV) provides an example of increased capital availability due to investor interest and the potential for new revenue opportunities. Cruise, our global segment responsible for the development and commercialization of AV technology, has attracted funding from financial and strategic investors, including Honda, Microsoft and Walmart. This capital infusion, combined with our funding and collaboration, is enabling Cruise and GM to accelerate their efforts to commercialize self-driving vehicles.

In addition, AVs—particularly those that are passenger cars—could significantly affect the country's ability to cut GHG emissions and move toward a carbon-free economy. Existing studies suggest that three main factors will determine whether putting more AVs on the road increases or decreases tailpipe carbon emissions: effect on the total vehicle-miles traveled in the United States; impacts on congestion; and AV fuel efficiency and fossil fuel consumption. As such, AVs must be assessed not only for their safety but also for their effect on carbon emissions levels.

Every Cruise AV test vehicle is also an EV that is derived from the Chevrolet Bolt EV. Introducing these technologies in tandem accomplishes multiple goals, including increasing acceptance of EVs and encouraging buildout of EV charging infrastructure.

**Time horizon**

Medium-term

**Likelihood**

About as likely as not

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

50,000,000,000

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

**Explanation of financial impact figure**

Given the rapidly evolving environment, related technology, market developments and other key considerations, We estimate approximately \$50 billion potential annualized revenue by Cruise by the end of the decade. We believe that market opportunity of the global autonomous vehicle industry is significant and that our investment in Cruise will provide substantial upside.

**Cost to realize opportunity**

6,000,000,000

**Strategy to realize opportunity and explanation of cost calculation**

Our development of (AV) provides an example of increased capital availability due to investor interest and the potential for new revenue opportunities. Cruise, our global segment responsible for the development and commercialization of AV technology, has attracted funding from financial and strategic investors.

The cost to realize the opportunity noted is estimated at approximately \$6 billion, part of our commitment to invest \$35 billion in EVs and AVs from 2020 to 2025.

GM received a permit from the California Public Utilities Commission (CPUC) to provide passenger test rides in its AVs without a trained test driver in the vehicle. As the first company to receive such a permit, Cruise has been conducting fully driverless rides with the public—completing hundreds of such test rides by the end of 2021. As of June 2022,

Cruise is the first and only company to operate a commercial, driverless ridehail service in a major U.S. city.

### **Comment**

Cruise is actively testing AVs on public roads in San Francisco, California; Scottsdale, Arizona; and Warren, Michigan. Additionally, through Cruise, our majority-owned subsidiary, we plan to develop an integrated network of on-demand autonomous vehicles in the U.S.

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### **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

### **Primary potential financial impact**

Reduced direct costs

### **Company-specific description**

Energy Efficiency projects implemented in our manufacturing operations in South Korea resulted in the opportunity to sell carbon credits into the Emission Trading Scheme in South Korea. Implementing energy efficiency in GM operations in Korea is integrated into their business plan. Energy Treasure hunts in GM Korea find opportunities for energy and carbon savings and with implementation of various initiatives - LED lights, compressed air, and building management system improvements, provide savings in cost, carbon emissions reduction, and option to sell excess carbon credits. These initiatives represent an opportunity for us to reduce our operational costs and to sell carbon credits into the marketplace using the Korean Carbon Emission Trading Scheme. In 2021, GM Korea continued to make efficiency improvements which resulted in \$3.0M USD of saved energy cost for the year 2021. GM Korea also sold 71,200 metric tons of excess CO<sub>2</sub>e credits in 2021 at \$18/ton for a revenue to GM of about \$1.3 M USD. This brings the total savings in 2021 to \$4.3M. The cost to implement energy efficiency projects was \$1.9M USD in 2021.

### **Time horizon**

Short-term

### **Likelihood**

Virtually certain

### **Magnitude of impact**

Medium-low

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

4,300,000

**Potential financial impact figure – minimum (currency)**

**Potential financial impact figure – maximum (currency)**

**Explanation of financial impact figure**

Cost savings resulting 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 resulted in \$3.0M energy savings in 2021. Additionally, in 2021 we realized \$1.3 M USD from selling carbon credits into the ETS, credits were obtained partially because of implementation of energy conservation projects. We are using the direct sale of CO<sub>2</sub>e credits and energy savings as a financial benefit in 2021 from energy efficiency, or \$4.3M.

**Cost to realize opportunity**

1,900,000

**Strategy to realize opportunity and explanation of cost calculation**

GM identifies energy and carbon savings opportunities using a standardized Energy Treasure Hunt process as documented by USEPA Energy Star. The opportunities include paint shop optimization, HVAC improvements, lighting, building envelop improvements, and controls. In 2021, action plans were developed to implement energy conservation measure opportunities and were implemented to provide cost savings and reduction of carbon emissions at GM South Korea's sites that manufacture vehicles and parts. The process utilized our Energy Star standardized Energy Treasure Hunt process to track progress and measure success. The cost to implement energy conservation measures was \$1.9 M. In 2021, we also conducted multiple Energy and Water treasure hunts in many countries - US, China, and Brazil, sometimes using Virtual Treasure Hunt methods developed in 2020.

**Comment**

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**Identifier**

Opp3

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

Downstream

**Opportunity type**

Products and services

**Primary climate-related opportunity driver**

Development and/or expansion of low emission goods and services

**Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

**Company-specific description**

The World Economic Forum estimates that demand for urban last-mile delivery, fueled by e-commerce, will grow by 78% by 2030, leading to a 36% increase in delivery vehicles in the world's top 100 cities—further exacerbating urban congestion and pollution. This increase in demand is expected to cause delivery-related carbon emissions to rise by 21% and add 11 minutes to each passenger's commute. Third-party logistics companies, which manage fleets of many thousands of vehicles, are on the front lines of these challenges, rising to meet demand while addressing the associated increases in emissions and congestion. In addition, these companies are faced with labor shortages and occupational injuries due to the physical strain of handling packages. GM's Global Innovation organization approached this situation through the lens of our vision of a world with zero crashes, zero emissions and zero congestion, imagining what it would take to transform delivery and logistics for an all-electric future and launched BrightDrop. BrightDrop is an internal startup devoted to decarbonizing last-mile deliveries through an ecosystem of electric products, software and services that empower companies to move goods more efficiently. BrightDrop is designed to help businesses lower their ownership and operating costs, maximize labor productivity and improve employee safety and freight security—all while operating with products that work together intelligently and with zero operating emissions. BrightDrop launched publicly in 2021 and introduced its first products, the Zevo 600, an electric light commercial vehicle (eLCV) built for the delivery of goods and services over long ranges, and the Trace. The Trace is a smart, electrically propelled cart that helps reduce time and physical effort required for couriers to get goods from the delivery van to customers.

**Time horizon**

Medium-term

**Likelihood**

About as likely as not

**Magnitude of impact**

Medium

**Are you able to provide a potential financial impact figure?**

Yes, a single figure estimate

**Potential financial impact figure (currency)**

10,000,000,000

**Potential financial impact figure – minimum (currency)**

## **Potential financial impact figure – maximum (currency)**

### **Explanation of financial impact figure**

This 2030 opportunity is in an early phase, and we do not publicly report on the potential financial positive implications of this opportunity at this time. However, given the potential opportunities within the combined markets for parcel, food delivery and reverse logistics in the U.S. over the coming years, we expect that our BrightDrop business will be well positioned for a substantial portion of this opportunity.

### **Cost to realize opportunity**

### **Strategy to realize opportunity and explanation of cost calculation**

BrightDrop is an internal startup devoted to decarbonizing last-mile deliveries through an ecosystem of electric products, software and services that empower companies to move goods more efficiently. BrightDrop is designed to help businesses lower their ownership and operating costs, maximize labor productivity and improve employee safety and freight security—all while operating with products that work together intelligently and with zero operating emissions. BrightDrop launched publicly in 2021 and introduced its first products, the Zevo 600, an electric light commercial vehicle (eLCV) built for the delivery of goods and services over long ranges, and the Trace. The Trace is a smart, electrically propelled cart that helps reduce time and physical effort required for couriers to get goods from the delivery van to customers. BrightDrop completed the first production builds of the Zevo 600 in September 2021, making the Zevo 600 the fastest vehicle program to market in GM's history. The record-setting development timeline of just 20 months was made possible by leveraging the highly flexible Ultium battery platform, innovative virtual development processes established by the GMC HUMMER EV program and an agile approach to manufacturing development. The timetable enabled delivery of the first few of 500 eLCVs to FedEx Express, BrightDrop's first customer, in December. Also in 2021, BrightDrop unveiled the Zevo 400, a smaller eLCV. Verizon, one of the largest fleet operators in the United States, is the first customer slated to integrate the Zevo 400 into its field maintenance and service fleet. The Zevo 400 combines many of the same features of the Zevo 600, but its smaller size enables enhanced curb management, maneuverability and the ability to fit into a standard-size parking space—a benefit for customer operations and a key feature to help reduce street congestion in urban areas.

### **Comment**

## C3. Business Strategy

### C3.1

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

Row 1

**Transition plan**

Yes, we have a transition plan which aligns with a 1.5°C world

**Publicly available transition plan**

Yes

**Mechanism by which feedback is collected from shareholders on your transition plan**

We have a different feedback mechanism in place

**Description of feedback mechanism**

Reviewed science-based targets transition plan with the senior leadership team

**Frequency of feedback collection**

More frequently than annually

**Attach any relevant documents which detail your transition plan (optional)**

GM 2021 Sustainability Report - Reducing Carbon Emission

 GM\_2021\_SR.pdf

### C3.2

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

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

### C3.2a

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

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios IEA NZE 2050	Company-wide		Climate change has been incorporated into our enterprise risk management framework. This designation ensures that these issues are a part of our decision-making processes. We have utilized scenario-

		<p>planning as a tool to help us assess climate-related risks in alignment with the guidance developed by TCFD. That planning has been based on a key assumption that the world is on a path to limit emissions by 2050 to the extent necessary to limit any global temperature increase to 1.5 degrees Celsius. Our goal has been to develop an understanding of a range of different world scenarios; identify risks, opportunities, and success factors for GM; and make recommendations for GM to analyze, prepare, adapt and act. In the process, we modeled the impact of different scenarios and asked questions such as:</p> <ul style="list-style-type: none"> <li>• “What types of regulation will govern the sector?”</li> <li>• “What will cities look like?”</li> <li>• “What are the mobility limitations of dense urban communities?” and</li> <li>• “What sort of transportation modes and services, such as ride share, will be most accepted by consumers?”</li> </ul> <p>All of our scenarios shared common themes. Within the vehicle market, for example, it was assumed that new passenger vehicles would be required to make faster and greater adjustments than other users of energy and that there would be significant changes in the vehicle ownership paradigm, as well as a decline in the proportion of single-person vehicle miles. Outside the transportation sector, we envisioned significant changes and investments in infrastructure, power grids and power sources; penalties and costs associated with manufacturing and supply chain emissions; and increased accountability in areas such as commodity lifecycles. Our consideration of these scenarios has helped us understand and clarify risks and highlight opportunities, many of which are influencing our strategy today.</p> <p>We also have used scenario planning to build a realistic picture of what the EV market in the U.S. could look like in 2030 based on key uncertainty drivers. That thought process has resulted in potential scenarios considering different circumstances for the world, in which each potential future scenario is a world that has a unique view on customers, technology competitors and the economic and political environment. In summary, scenario planning processes are an example of how</p>
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			GM monitors the real world to understand how assumptions evolve and corresponding changes.
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## C3.2b

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

### Row 1

#### Focal questions

1. Would we see a shift towards greater political polarization or cooperation?
2. Would climate disruption be seen as background noise (“simmering frog”) or shock governments into action?
3. Would we see sustained economic growth or economic crisis?

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

1. Many governments included climate provisions and equity considerations in COVID-19 relief and stimulus spending. Global cooperation of the mid 2020s boosted knowledge sharing and created a more even playing field for corporations to unite behind technology standardization. For example, regulation on the standardization of EV charging technology increases the uptake of EVs for consumers. To push the shift away from the personal car, governments have implemented extreme tariffs on personal vehicles in cities and municipalities. OEMs, tech companies, rental car companies, and other major automotive players are expected to cooperate and share information with governments.

GM’s \$35B planned investment from 2020-2025 in EV and AV technology will help meet our climate goals and support the future customer’s needs. Programs like Cruise, our global segment responsible for the development and commercialization of AV technology, the Ultium battery platform, and the HYDROTEC fuel cell platform give GM the potential to transform a variety of transportation modes into zero-emission products.

2. Supply chain disruptions due to the pandemic and eco-shocks accelerated the shift towards more resilient supply chains, waste reduction, and a more circular economy. Companies diversify supply chains as much as feasible to build resilience into the business model. However, there is little supply chain business advantage for any one company as captive suppliers are rare and more transparency on everything, including pricing, is available. The explosion of renewable energy and battery tech in the mid-2020s caused a run-on critical minerals and resources, leading to a spike in the price of raw materials. Today, companies invest in a circular automotive industry that re-harvest critical materials from the waste stream and extend the life of vehicles, reducing waste and the need for new raw material production.

GM is tackling supply chain issues through the Suppliers Partnership for the

Environment (SP). By working with our suppliers now to stay on top of climate action will be a key aspect of fully achieving our global climate goals.

3. Targeted stimulus spending helped alleviate inequality as the economy rebounded. Companies with ambitious ESG policies did best during the crises of the early 2020s, increasing pressure from investors to address these issues. The development of new business models, technology, and supply chain mapping increased the need for highly-skilled workers. Global, industry-wide schemes to re-skill and up-skill the workforce to meet the new needs of the industry are largely successful.

GM recognized that our vision of a world with zero crashes, zero emissions and zero congestion is crucial to maintaining our long-term success and growth as an automotive leader. GM encourages employees to build skills and seek diverse experiences that interest them most through a variety of programs and tools in order to support our all electric future.

### C3.3

**(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.**

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>GM's long term (beyond 2025) product portfolio strategy is shifting from internal combustion engine vehicles (ICE) to all electric vehicles consistent with our vision of zero emissions and decarbonization. Future regulatory risks and business market opportunities, often influenced by the threat of climate change, were key drivers of our all-electric future strategy. We accelerated our plans to transition to an all-electric future in 2021 when we announced increased investments in EV and autonomous vehicle (AV) development to more than \$35 billion from 2020 through 2025 from our initial target of \$20 billion. We expect these investments to help position us to have EVs represent approximately 40% to 50% of annual U.S. sales volume by 2030. To reach this upper range, we will continue to work with federal, state and local governments for implementation of supportive policies to move the United States closer to carbon neutrality consistent with the goals of the Paris Agreement.</p> <p>In China, the world's largest EV market, we will accelerate electrification through a plan in which 40% of new vehicles introduced through the end of 2025 will be EVs. This will</p>

		<p>build on our current market momentum in China. Based on our planned cadence of EV introductions, by the end of 2025, GM will have more than 1 million units of EV capacity in North America. This is in addition to more than 1 million units of EV capacity in China over the same time frame. Our EV portfolio is planned to be among the broadest in the industry with entries from affordable, high-volume market segments to top-of-the-line models and everything in between.</p> <p>The new all-electric GMC HUMMER EV and upcoming Cadillac LYRIQ, Chevrolet Silverado EV and Chevrolet Equinox EV feature the company's Ultium platform, a combined EV architecture and propulsion system, which enables EVs at scale, across a broad set of lifestyles and price points.</p>
Supply chain and/or value chain	Yes	<p>Life cycle analysis, using environmental extended input/output analysis from the U.S. Environmental Protection Agency (U.S. EPA) EEIO 2.0 database, allows us to estimate the environmental impacts of our 18,936 suppliers. The analysis is broken down by industry and tier to identify which products in our supply chain contribute to greenhouse gas (GHG) emissions, water consumption and land use associated with our supply chain. This analysis shows that 13% of our total carbon footprint comes from purchased goods and services. We take pride in knowing that our suppliers are dedicated to protecting our planet and fostering healthy work environments. In recognition of this commitment, starting in 2021, we encouraged our suppliers to sign General Motors' Environmental, Social &amp; Governance (ESG) Partnership Pledge. For the environmental pillar, we ask suppliers to commit to carbon neutrality for their Scope 1 and Scope 2 emissions relevant to products or services a supplier provides to GM. The timeline for a supplier to reach carbon neutrality is based on their industry. For additional information see GM's 2021 Sustainability Report – Supply Chain Section.</p> <p>GM has participated in the CDP supply chain since 2013. We are working with CDP and our suppliers to accelerate action on the environmental front. CDP supports companies in measuring and managing their impacts on climate change, deforestation and water-related risks. Enrolled suppliers in the CDP initiative include all direct material strategic suppliers, a subset of indirect suppliers who are</p>

		<p>mainly manufacturing-based suppliers and our top strategic logistics suppliers. This group represents more than 83% of our supply chain spend. During the past two years, we have set a goal of increasing participation among in-scope strategic suppliers and key logistic suppliers year-over-year. In 2021, our response rate rose to more than 99% of surveyed suppliers, exceeding previous years for the Climate Change questionnaire. We aim to achieve 100% participation for in scope strategic suppliers in 2022.</p>
Investment in R&D	Yes	<p>R&amp;D investment in battery technology is important to vision of Zero emissions and a shift from ICE to all electric vehicles. In October 2021 GM announced the Wallace Battery Cell Innovation Center, an all-new facility that will significantly expand the company's battery technology operations and accelerate development and commercialization of longer range, more affordable electric vehicle batteries. The facility will play a pivotal role in advancing GM's vision of an all-electric future and help pave the way to widespread adoption of EVs, building on more than a decade of advanced battery development at GM Research and Development. The new facility builds on more than \$5 billion already invested in batteries in the U.S., expands design capabilities of future battery chemistries and increases future EV range. GM will also use the facility to integrate the work of GM-affiliated battery innovators, helping the company to reach its stated goal of at least 60 percent lower battery costs with the next generation of Ultium. GM currently holds more than 2,000 granted and pending patents related to EV battery technology, including 60 patents and trade secrets and another 46 pending in critical areas of future battery development, such as lithium-metal electrolytes, anodes, cathodes and binders.</p>
Operations	Yes	<p>Although carbon emissions from our operations represent approximately only 2% of our carbon footprint, we work diligently to reduce them. Risks and opportunities related to Climate Change, including cost savings, led us to two strategic actions in 2020 that were the most substantial business decisions related to climate change risk in our operations. The two actions were 1). Increased energy efficiency with Energy Performance Contracts (EPC) and 2). pulling forward of our RE-100 goal from 2050 to 2035 globally and by 2025 for our US operations. RE-100 is an important lever to the decarbonization efforts for our operations and pulling the goal ahead by 5 years will speed up our decarbonization efforts in operations. Our new</p>

		absolute carbon goal of 72% reduction, which was approved as a Science Based Target, for operations from 2018 to 2035 is highly dependent on energy efficiency and use of renewable energy (RE).
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### C3.4

**(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.**

	Financial planning elements that have been influenced	Description of influence
Row 1	Capital expenditures	<p>Our global commitment to realize an all-electric, zero-emissions future — from battery chemistry and architecture to safety validation and infrastructure — requires unprecedented investment in people and resources. We accelerated our plans to transition to an all-electric future in 2021 when we announced increased investments in EV and autonomous vehicle (AV) development to more than \$35 billion from 2020 through 2025 from our initial target of \$20 billion. Based on our planned cadence of EV introductions, by the end of 2025, GM will have more than 1 million units of EV capacity in North America. This is in addition to more than 1 million units of EV capacity in China over the same time frame. GM’s flexibility and engineering focus will drive the scale required to accelerate our path to zero emissions in a profitable and efficient way. In addition, we are leveraging existing assets, such as production tools and body and paint shops, so that economies of scale can be realized with less capital and to further position the first generation of these products for profitability.</p> <p>GM is investing \$7 billion in four Michigan manufacturing sites, significantly increasing battery cell and electric truck manufacturing capacity. The investment includes construction of a new Ultium Cells battery cell plant in Lansing, Michigan and the conversion of GM’s assembly plant in Orion Township, Michigan</p> <p>In 2021, we also announced the Wallace Battery Cell Innovation Center, an all-new facility is expected to significantly expand our battery technology operations and accelerate the development and commercialization of longer-range, more affordable EV batteries. The Center, located at our Global Technical Center in Warren, Michigan, is slated to be completed in mid-2022. The latest addition of 50,000 square feet brings the Center to 85,000 total square feet of the lab as demand for EVs increases.</p>

		<p>Our transition to EVs and AVs is at the heart of our technology- and software-driven growth strategy. We will continue to increase our investments in these vehicles and new services as we progress toward decarbonizing our business. In fact, we are accelerating our work this year to meet increasing demand for our EVs, with the ultimate goal of becoming the EV market leader. Our commitments and investments reflect our sense of urgency to get everybody in an EV and transform our vision into a reality.</p>
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### C3.5

**(C3.5) In your organization’s financial accounting, do you identify spending/revenue that is aligned with your organization’s transition to a 1.5°C world?**

Yes

### C3.5a

**(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization’s transition to a 1.5°C world.**

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**Financial Metric**

Revenue

**Percentage share of selected financial metric aligned with a 1.5°C world in the reporting year (%)**

0.99

**Percentage share of selected financial metric planned to align with a 1.5°C world in 2025 (%)**

17

**Percentage share of selected financial metric planned to align with a 1.5°C world in 2030 (%)**

38

**Describe the methodology used to identify spending/revenue that is aligned with a 1.5°C world**

As shared in our October 2021 Investor Day, the 2025 and 2030 figures represent our projected EV sales (\$30B and \$90B, respectively) as a percentage of projected auto sales and financing revenue (\$180B and a range of \$195-235B, respectively), which includes sales of internal combustion engine vehicles and GM Financial as well as other traditional businesses such as Customer Care and Aftersales; projected auto sales and financing revenue does not include projected revenue from software and other new businesses, such as Cruise, BrightDrop, GM Defense, or OnStar Insurance. The 2021

figure represents a historical average from 2016-2020 of EV sales as a percentage of auto sales and financing revenues, as previously defined.

## C4. Targets and performance

### C4.1

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

Absolute target

Intensity target

### C4.1a

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

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**Target reference number**

Abs 1

**Year target was set**

2021

**Target coverage**

Company-wide

**Scope(s)**

Scope 1

Scope 2

**Scope 2 accounting method**

Market-based

**Scope 3 category(ies)**

**Base year**

2018

**Base year Scope 1 emissions covered by target (metric tons CO<sub>2</sub>e)**

1,763,555

**Base year Scope 2 emissions covered by target (metric tons CO<sub>2</sub>e)**

3,924,338

**Base year Scope 3 emissions covered by target (metric tons CO<sub>2</sub>e)**

**Total base year emissions covered by target in all selected Scopes (metric tons CO<sub>2</sub>e)**

5,687,893

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

100

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

100

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

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

100

**Target year**

2035

**Targeted reduction from base year (%)**

71.4

**Total emissions in target year covered by target in all selected Scopes (metric tons CO<sub>2</sub>e) [auto-calculated]**

1,626,737.398

**Scope 1 emissions in reporting year covered by target (metric tons CO<sub>2</sub>e)**

1,252,906

**Scope 2 emissions in reporting year covered by target (metric tons CO<sub>2</sub>e)**

2,150,694

**Scope 3 emissions in reporting year covered by target (metric tons CO<sub>2</sub>e)**

**Total emissions in reporting year covered by target in all selected scopes (metric tons CO<sub>2</sub>e)**

3,403,600

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

56.2473646387

**Target status in reporting year**

New

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



Yes, and this target has been approved by the Science Based Targets initiative

**Target ambition**

1.5°C aligned

**Please explain target coverage and identify any exclusions**

Our Scope 1 & 2 GHG target includes all of our major operations globally, including our JV operations in China and many leased facilities where GM pays utility bills.

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

Energy efficiency in our operations and procurement of renewable electricity towards our RE100 goal will provide the methods to meet our target in the future.

We are currently at a 40% reduction of scope 1 and 2 Market-based to the base year with a glide path of 12.4%, so we are ahead of our pathway to meet our Science Based Target for Scope 1 & 2.

Although many facilities had reduced production due to parts shortages, we were able to implement energy efficiency projects using Energy Performance Contracts and other methods with HVAC optimization, installing LED lights, improving building management systems, and other measures.

In 2021, GM implemented over 300 energy improvements in our buildings and processes from new more efficient equipment - variable speed drives on motors, process controls, LED lights, and other energy conservation measures. Additionally, we increased our renewable electricity use from 23% to 25% providing GHG reductions in scope 2 Market-based emissions.

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

**Year target was set**

2021

**Target coverage**

Company-wide

**Scope(s)**

Scope 3

**Scope 2 accounting method**

**Scope 3 category(ies)**

Category 11: Use of sold products

**Intensity metric**

Grams CO<sub>2</sub>e per kilometer

**Base year**

2018

**Intensity figure in base year for Scope 1 (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 2 (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in base year for Scope 3 (metric tons CO<sub>2</sub>e per unit of activity)**

0.0002466

**Intensity figure in base year for all selected Scopes (metric tons CO<sub>2</sub>e per unit of activity)**

0.0002466

**% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure**

**% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure**

**% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this Scope 3 intensity figure**

85

**% of total base year emissions in all selected Scopes covered by this intensity figure**

85

**Target year**

2035

**Targeted reduction from base year (%)**

50.4

**Intensity figure in target year for all selected Scopes (metric tons CO<sub>2</sub>e per unit of activity) [auto-calculated]**

0.0001223136

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

0

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

-50.4

**Intensity figure in reporting year for Scope 1 (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 2 (metric tons CO<sub>2</sub>e per unit of activity)**

**Intensity figure in reporting year for Scope 3 (metric tons CO<sub>2</sub>e per unit of activity)**

0.00024632

**Intensity figure in reporting year for all selected Scopes (metric tons CO<sub>2</sub>e per unit of activity)**

0.00024632

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

0.2252861134

**Target status in reporting year**

New

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

Yes, and this target has been approved by the Science Based Targets initiative

**Target ambition**

Well-below 2°C aligned

**Please explain target coverage and identify any exclusions**

General Motors commits to reduce scope 3 GHG emissions from use of sold products of light duty vehicles 51% per vehicle kilometer by 2035 from a 2018 base year. The aggressive target was approved by SBTi organization in April 2021 and includes 100% of our light duty vehicles sold globally, including our JVs in China. The Well-below 2C aligned model is the most aggressive one available at this time for the Auto Transport OEM sector. The methods to meet this scope 3 target will be accomplished with our all EV future strategy with 30 new models by 2025, aspiration to be all EV by 2035, and increasing renewable energy generation supported by our RE-100, 4 pillar strategy, including supporting public policy for RE-100 globally. In 2020, we announced that we are working with EVgo to increase the number of DC fast chargers on EVgo's network,

which is already the nation's largest public fastcharging network. The collaboration will add more than 2,700 new public fast chargers to the United States by the end of 2025. Fast charging stations will be located in highly visible areas like grocery stores, retail outlets and other high-traffic locations—and most will be able to charge at least four vehicles simultaneously at speeds of up to 350 kilowatts per hour. All chargers will be powered by 100% renewable energy.

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

Our plan to meet this scope 3 target is through our plans to eliminate tailpipe emissions from all light-duty vehicles and offer all-electric heavy-duty vehicles by 2035, and increasing renewable energy generation supported by our RE-100, 4 pillar strategy, including supporting public policy for RE-100 globally. In 2020, we announced that we are working with EVgo to increase the number of DC fast chargers on EVgo's network, which is already the nation's largest public fastcharging network. The collaboration is expected to add more than 2,700 new public fast chargers to the United States by the end of 2025. Fast charging stations will be located in highly visible areas like grocery stores, retail outlets and other high-traffic locations—and most will be able to charge at least four vehicles simultaneously at speeds of up to 350 kilowatts per hour. All chargers will be powered by 100% renewable energy

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

## C4.2

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

Target(s) to increase low-carbon energy consumption or production  
Other climate-related target(s)

## C4.2a

**(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.**

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**Target reference number**

Low 1

**Year target was set**

2017

**Target coverage**

Company-wide

**Target type: energy carrier**

Electricity

**Target type: activity**

Consumption

**Target type: energy source**

Renewable energy source(s) only

**Base year**

2016

**Consumption or production of selected energy carrier in base year (MWh)**

292,536

**% share of low-carbon or renewable energy in base year**

3

**Target year**

2035

**% share of low-carbon or renewable energy in target year**

100

**% share of low-carbon or renewable energy in reporting year**

25.1

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

22.7835051546

**Target status in reporting year**

Underway

**Is this target part of an emissions target?**

Yes, our RE-100 goal for renewable electricity by 2035, globally compliments our Scope 1&2 absolute emissions target of 71.4% GHG reduction by 2035 from a baseline of 2018.

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

RE100

**Please explain target coverage and identify any exclusions**

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. In early 2020, we pulled forward our 100 percent global renewable energy commitment to 2035 with interim goals of achieving 100 percent of U.S. sites by 2030. In the second quarter of 2020, we executed our largest solar project of 300 MW in Michigan through a green tariff agreement, making all GM sites in Southeast Michigan served by DTE on renewable power, including our global headquarters in Detroit and Global Technical

Center in Warren Michigan. We are the 12th-largest off-taker of renewable power purchase agreements (PPAs) in the world, and the second-largest off-taker in the manufacturing sector. In recognition of our efforts, GM received the 2020 Green Power Leadership Award in the Excellence in Green Power Use category from the U.S. Environmental Protection Agency. The awards recognize companies for their commitment and contribution to helping advance the development of the nation's voluntary green power market.

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

GM follows a four pillar approach to achieve our renewable energy goals. The first pillar is energy efficiency; making investments in our operations for more efficient equipment. The second pillar is renewable energy procurement. This is primarily done through power purchase agreements and green tariffs, sourcing renewable energy from projects as close to our operations as possible. The third pillar is addressing intermittency; mitigating gaps in renewable energy transition: working to ensure we're using carbon free electricity when the sun isn't shining and wind isn't blowing, and improving grid reliability. The last pillar is policy advocacy: GM is highly engaged via trade organizations & directly to legislators, voicing our support for clean energy legislation. In 2021, GM executed a green tariff offering for 28 MW of solar energy to supply the Bowling Green Assembly Plant with renewable energy. Furthermore, Phase 1 of a Green Tariff agreement with DTE in Michigan for 300,000 MWh of wind assets began producing renewable energy.

The actions that contributed most to achieving our RE100 target in 2021 were the Green Tariffs we executed. We contracted an agreement with the Tennessee Valley Authority for 28 MW of solar energy to supply the Bowling Green Assembly Plant with renewable energy. Furthermore, Phase 1 of a Green Tariff agreement with DTE in Michigan for 300,000 MWh of wind energy began production.

**List the actions which contributed most to achieving this target**

## C4.2b

**(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.**

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**Target reference number**

Oth 1

**Year target was set**

2020

**Target coverage**

Company-wide

**Target type: absolute or intensity**

Absolute

**Target type: category & Metric (target numerator if reporting an intensity target)**

Waste management  
metric tons of waste generated

**Target denominator (intensity targets only)**

**Base year**

2017

**Figure or percentage in base year**

352,588

**Target year**

2025

**Figure or percentage in target year**

188,761

**Figure or percentage in reporting year**

253,033

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

60.7683715139

**Target status in reporting year**

Underway

**Is this target part of an emissions target?**

Reducing waste in GM's operations provides an important part of our low-carbon transition plan. GM has launched its Zero Waste circular economy program. This will entail diverting 90% or more of our operational waste from landfills and incinerators across targeted facilities by 2025.

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

Other, please specify

It is voluntary as part of our global circular economy strategy. Reducing waste in GM's operations also provides an important part of our low-carbon transition plan.

**Please explain target coverage and identify any exclusions**

Our goal is to divert 90% of our operational waste from landfills and incinerators by 2025. The scope of this plan covers more than 95% of the waste generated in our operations globally.

The baseline line year uses the GHG Protocol recommendation to average the data to assuage variations. Therefore, GM selected the waste data from 2017 to 2019. Also, our innovative approach to calculate our performance overtime uses the total non-diverted

waste (Waste managed by landfill deposition and incineration with or without energy recovery), divided by the baseline. This method has been validated by a third party and presented during the 2nd World Conference on Waste Management. The number specified in the base year represents the average of the total amount of waste sent to landfills and incinerators excluding construction, demolition and remediation waste.

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

Our plan involves working with our manufacturing sites to target opportunities for waste diversion on critical waste streams. This strategic approach along with a dedicated budget for project implementation provides the main drivers to achieve the goal.

The operational team also conducted lean manufacturing activities during the reporting year to drive engagement upstream and downstream in our processes. Along with multiple awareness programs and partnerships, GM was able to be on the glidepath during the reporting year.

Our Zero Waste program was designed to be as comprehensive as possible, incorporating in its scope all solid waste, containerized liquids and hazardous waste. With this program we are helping to drive innovation in the recycling industry, supporting all elements of circular economy.

A great example is our innovative project to reuse foundry sand. Our casting plant in Defiance, Ohio, ships their used sand to be reused in our Saginaw Metal Casting Operations (SMCO) in Michigan. The SMCO team tested multiple samples of the used sand from Defiance. In mid-2021, the first load of sand was delivered for a pilot test and the product met all the quality standards. A full reuse program was launched, enabling SMCO to avoid purchasing more than 1,120 tons of new sand. Other benefits include less mining of sand and lower dependency on natural resources, which increases resiliency in our supply chain.

Some additional actions were: Accurate data analysis, lean manufacturing programs such as the Zero Waste Treasure Hunt, DMAIC (Define-Measure-Analyze-Improve and Control), under the Zero Waste Mini-Missions, the Zero Waste prioritization matrix to select and fund only the most advantageous projects and a strong communications plan to raise awareness both internally and with external stakeholders.

### **List the actions which contributed most to achieving this target**

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#### **Target reference number**

Oth 2



**Year target was set**

2020

**Target coverage**

Business division

**Target type: absolute or intensity**

Absolute

**Target type: category & Metric (target numerator if reporting an intensity target)**

Engagement with suppliers

Percentage of suppliers (by emissions) actively engaged on climate-related issues

**Target denominator (intensity targets only)**

**Base year**

2019

**Figure or percentage in base year**

68

**Target year**

2021

**Figure or percentage in target year**

99

**Figure or percentage in reporting year**

99

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

100

**Target status in reporting year**

Underway

**Is this target part of an emissions target?**

This target is a part of reducing GM's overall carbon footprint. In order to help reduce our Scope 3, category 1 purchased goods and services GHG life cycle emissions, we need support from our supply chain. We set a goal for CDP Climate Change Supply Chain participation for 100% of our select suppliers to respond to CDP SC by 2022. Enrolled suppliers in the CDP initiative include all direct material strategic suppliers, a subset of indirect suppliers who are mainly manufacturing-based suppliers and our top strategic logistics suppliers. This group represents more than 83% of our supply chain spend.

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

Other, please specify

Reducing GM's total Scope 3 GHG emissions

**Please explain target coverage and identify any exclusions**

Although Scope 3, category 1 is not currently part of our SBTi targets, it could be in the future as electrification of our fleet will make Scope 3 category 11 GHG emissions from vehicle emissions less impactful. Purchased goods and services GHG is our 2nd highest scope 3 emission, and we need 100% of our strategic suppliers to assist in decarbonization.

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

During the past two years, we have set a goal of increasing participation among in-scope SSE (Strategic Supplier Engagement) and key logistic suppliers year-over-year. In 2021, our response rate rose to more than 99% of surveyed suppliers, exceeding previous years for the Climate Change questionnaire. We aim to achieve 100% participation for targeted suppliers in 2022. We've introduced a change in scope this year from our strategic suppliers to all direct suppliers.

A key achievement in 2021 was the publication of a GM Sustainability Partner Guide and Framework to our Tier I suppliers, which communicates our supply chain goals, priorities and processes. The guide outlines GM's approach to sustainability and includes increasing levels of engagement from our suppliers with four distinct levels: compliance, commitment, growth and leadership. The framework addresses ESG topics and allows for supplier-specific goals based on their materiality assessments. Some goals are universal for all suppliers, such as year-over-year carbon reduction targets. The framework also contains requirements that support GM's vision for more sustainable materials in our products, packaging and logistics, as well as overall supplier sustainability within their own operations – including CDP participation. Our purchasing teams engage and cascade these goals to their respective suppliers. In addition, GM Supplier Champions engage personally with their own suppliers in CDP Reporting. GM's Supplier Sustainability Framework defines how we measure sustainability goals within our supplier purchasing program. Lastly, our goals are communicated throughout the organization to our Supplier Champions and Buyers through monthly staff meetings, GLAM (Global Alignment Meetings), and 1-on-1 touchpoints.

Key to supplier engagement in 2021, we held an Energy Symposium focused on renewable energy and carbon neutrality. The event provided insight into renewable energy for electricity as a sound business decision. The GPSC Sustainability Team, suppliers and stakeholders discussed carbon neutrality and highlighted immediate tangible opportunities and resources available to accelerate action. We engaged with AIAG to develop new e-learning training modules that will be launched to suppliers in 2022. In addition, our GPSC team hosts monthly energy webinars for our Tier I and II suppliers bringing in Subject Matter Experts in different areas to provide resources and tools for our value chain partners.

**List the actions which contributed most to achieving this target**

## C4.3

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

Yes

### C4.3a

**(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO<sub>2</sub>e savings.**

	Number of initiatives	Total estimated annual CO <sub>2</sub> e savings in metric tonnes CO <sub>2</sub> e (only for rows marked *)
Under investigation	67	
To be implemented*	20	7,429
Implementation commenced*	4	12,560
Implemented*	307	247,360
Not to be implemented	9	

### C4.3b

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

**Initiative category & Initiative type**

Low-carbon energy generation

Wind

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

95,652

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

Scope 2 (market-based)

**Voluntary/Mandatory**

Voluntary

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

0

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

0

**Payback period**

No payback

**Estimated lifetime of the initiative**

3-5 years

**Comment**

Our renewable electricity RE-100 commitment and implementation for our operations provides carbon reduction to help us meet our Science Based Target pathway.

Furthermore, Phase 1 of a Green Tariff agreement with DTE in Michigan for 300,000 MWh of wind energy began production in 2021.

---

**Initiative category & Initiative type**

Company policy or behavioral change

Resource efficiency

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

70,722

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

Scope 1

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

7,982,000

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

0

**Payback period**

No payback

**Estimated lifetime of the initiative**

1-2 years

**Comment**

2021 provided a continued opportunity to optimize our fixed energy in our operations with improved shutdown due to pandemic, semiconductor shortage, consolidate operations, extend temperature and humidity ranges in our paint booths, and other energy conservation measures.

---

**Initiative category & Initiative type**

Energy efficiency in buildings

Heating, Ventilation and Air Conditioning (HVAC)

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

34,862

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

Scope 1

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

3,476,576

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

25,752,210

**Payback period**

>25 years

**Estimated lifetime of the initiative**

16-20 years

**Comment**

Although many facilities continue to be impacted by the pandemic and semiconductor shortage, we were able to implement energy efficiency projects using Energy Performance Contracts and other methods with HVAC optimization, installing LED lights, improving building management systems, and other measures.

---

**Initiative category & Initiative type**

Energy efficiency in production processes

Process optimization

**Estimated annual CO<sub>2</sub>e savings (metric tonnes CO<sub>2</sub>e)**

45,809

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

Scope 1

Scope 2 (location-based)

**Voluntary/Mandatory**

Voluntary

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

9,373,377

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

1,150,962

**Payback period**

<1 year

**Estimated lifetime of the initiative**

6-10 years

**Comment**

In 2021, GM implemented 240 energy improvements in our processes from new more efficient equipment, variable speed drives on motors, process controls, and other energy conservation measures.

**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 and Energy Performance Contracting (EPC) methods to supplement. In 2021, we continued to shift the majority of our spend from internal dedicated to external sources using EPC. The EPC method uses a shared savings approach that must include positive savings from day one.
Employee engagement	<p>GM uses an energy management system (EMS) and performance contracts to achieve energy-reduction goals. The basis of the system originates from Energy Star model and is integrated into our plan, do, check, act business plan. In 2021, 25 GM U.S. manufacturing facilities, 2 mixed use facilities, and 2 Canadian manufacturing facilities or more than 90 percent of our U.S. and Canadian manufacturing footprint, implemented the U.S. Department of Energy’s (DOE) 50001 Ready program.</p> <p>This program is an application tool through which 25 tasks are measured to demonstrate an effective EMS. Upon completion, facilities can self-attest to the structure of ISO 50001, a voluntary global standard. GM engaged with DOE to train the GM Energy team, along with suppliers and other companies on the 50001 Ready process. GM has been recognized by DOE in the US and Canada for "50001 Ready" at 29 facilities. We plan to expand this program to all manufacturing facilities globally in order to continuously monitor and improve our EMS. The process is key to making behavioral changes and engaging with employees.</p>
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 is set at \$25 per ton. We incorporate this into our energy project tracking system to include the GHG savings based on an internal price on carbon in our payback calculation. This helps prioritize projects that save greater amounts of GHG.

## C4.5

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

Yes

## C4.5a

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

---

### **Level of aggregation**

Group of products or services

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

Other, please specify

SBTi methodology for Well to Wheel Scope 3, Category 11, Use of sold products and difference between ICE and EV gCO<sub>2</sub>e/km for 150,000 lifetime vkm and 479,963 EVs from 2021 sold

### **Type of product(s) or service(s)**

Other

Other, please specify

EV Production

### **Description of product(s) or service(s)**

Our 2021 EV portfolio includes electric vehicles—such as our Chevy Bolt and our Baojun E100, E200, and E300, sold in China. These vehicles have zero tailpipe emissions and lower overall emissions compared to internal combustion engine (ICE) vehicles. The Bolt offers an EPA estimated range of 259 miles on a full charge. The E100, E200, and E300 offer an estimated range of 100, 200, 300 km on a full charge, respectively. Electric vehicles sold globally with lower emissions than comparable ICE vehicles available for sale provide our customers GHG reduction opportunities.

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

Yes

### **Methodology used to calculate avoided emissions**

Other, please specify

SBTi methodology for Well to Wheel Scope 3, Category 11, Use of sold products and difference between ICE and EV gCO<sub>2</sub>e/km for 150,000 lifetime vkm and 479,963 EVs from 2021 sold

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

Cradle-to-grave

**Functional unit used**

Metric Tons of CO2e

**Reference product/service or baseline scenario used**

SBTi methodology for Well to Wheel Scope 3, Category 11, Use of sold products and difference between ICE and EV gCO2e/km for 150,000 lifetime vkm and 479,963 EVs from 2021 sold

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

Cradle-to-grave

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

14,861,714

**Explain your calculation of avoided emissions, including any assumptions**

SBTi methodology for Well to Wheel Scope 3, Category 11, Use of sold products and difference between ICE and EV gCO2e/km for 150,000 lifetime vkm and 479,963 EVs from 2021 sold

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

0.99

## C5. Emissions methodology

### C5.1

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

No

### C5.1a

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

Row 1

---

**Has there been a structural change?**

Yes, a divestment

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

Baltimore Powertrain (U.S.)

Melbourne Powertrain (Australia)

Adelaide Assembly (Australia)



GM Holden Design Fabric Shop (Australia)  
Jeju Depot (South Korea)

**Details of structural change(s), including completion dates**

Baltimore Powertrain – sale/lease end date 3/18/2021  
Melbourne Powertrain – sale/lease end date 12/30/2020  
GM Holden Design Fabric Shop – sale/lease end date 12/15/2020  
Jeju Depot – sale/lease end date 6/10/2021

**C5.1b**

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

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in methodology Yes, a change in boundary	Emissions Accounting has changed in that GM is no longer using local regulatory or local voluntary reporting guidance as a source of emission factors for Electricity. Outside of the U.S., which continues to use EPA eGrid sub region factors, electric emission factors were updated from those found in local reporting schemas to those available from the International Energy Agency (IEA). Changes were made for all reported facilities located in South Korea, Brazil, Australia & Canada.  Changes in boundary are from divestitures and are further detailed in C5.1a 6.4, 6.5.

**C5.1c**

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

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	No, because the impact does not meet our significance threshold	The divestment reduction in 2021 is calculated at 1.15% and is below our materiality threshold at 5%.

**C5.2**

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

**Scope 1**

---

**Base year start**

January 1, 2018

**Base year end**

December 31, 2018

**Base year emissions (metric tons CO<sub>2</sub>e)**

1,763,555

**Comment**

GM's baseline of 2018 for our Science Based Target for scope 1 was chosen due to production anomalies in 2019 due to work stoppage and pandemic production stoppages globally in 2020. The scope 1 baseline was verified by an independent third party.

**Scope 2 (location-based)**

---

**Base year start**

January 1, 2018

**Base year end**

December 31, 2018

**Base year emissions (metric tons CO<sub>2</sub>e)**

4,322,761

**Comment**

GM used Scope 2 Market-based emissions for our Science Based Targets.

**Scope 2 (market-based)**

---

**Base year start**

January 1, 2018

**Base year end**

December 31, 2018

**Base year emissions (metric tons CO<sub>2</sub>e)**

3,924,338

**Comment**

GM's baseline of 2018 for our Science Based Target for scope 2 was chosen due to production anomalies in 2019 due to work stoppage and pandemic production stoppages globally in 2020. The scope 2 baseline was verified by an independent third party.

**Scope 3 category 1: Purchased goods and services**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3 category 2: Capital goods**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

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

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3 category 4: Upstream transportation and distribution**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

### **Scope 3 category 5: Waste generated in operations**

---

**Base year start**

**Base year end**

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

**Comment**

### **Scope 3 category 6: Business travel**

---

**Base year start**

**Base year end**

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

**Comment**

### **Scope 3 category 7: Employee commuting**

---

**Base year start**

**Base year end**

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

**Comment**

### **Scope 3 category 8: Upstream leased assets**

---

**Base year start**

**Base year end**

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

**Comment**

**Scope 3 category 9: Downstream transportation and distribution**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3 category 10: Processing of sold products**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3 category 11: Use of sold products**

---

**Base year start**

January 1, 2018

**Base year end**

December 31, 2018

**Base year emissions (metric tons CO<sub>2</sub>e)**

312,896,052

**Comment**

GM's Science Based Target for vehicle emissions is based on average intensity, not absolute. The base year value here is from our SBTi application and is extrapolated to 10 year lifecycle GHG in tons.

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

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3 category 13: Downstream leased assets**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3 category 14: Franchises**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3 category 15: Investments**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3: Other (upstream)**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

**Scope 3: Other (downstream)**

---

**Base year start**

**Base year end**

**Base year emissions (metric tons CO<sub>2</sub>e)**

**Comment**

## **C5.3**

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

Defra Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance, 2019

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

US EPA Mandatory Greenhouse Gas Reporting Rule

Other, please specify

- RE100 Reporting Guidance 2021

## **C6. Emissions data**

### **C6.1**

**(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO<sub>2</sub>e?**

**Reporting year**

---

**Gross global Scope 1 emissions (metric tons CO<sub>2</sub>e)**

1,252,906

**Comment**

GM's scope 1 emissions are generated from the use of fossil fuels, primarily natural gas for process and building heat. Reported emissions were verified by an independent third party.

## 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 use market based GHG emissions for our Science based target reduction goal.

## C6.3

**(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO<sub>2</sub>e?**

**Reporting year**

---

**Scope 2, location-based**

2,881,767

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

2,150,694

**Comment**

GM's scope 2 emissions are mostly from electricity used in our operations for process and building with some purchased steam, purchased chilled water and delivered heat by third parties. Scope 2 Location and Market-Based emissions have been verified by an independent third party.

## 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

Small office type buildings where tracking energy use is difficult due to energy inclusion in building leases or other factors and are insignificant to our GHG disclosure.

### 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 this source is excluded

The estimated GHG emissions from these small operations are estimated at 0.04% and are insignificant to our GHG disclosure and would require more resources than the value provided therefore we have excluded from our disclosure.

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

0

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

Using the average GHG emissions per square foot for typical GM office-type building included in our reporting times the total excluded square feet allows us to estimate the GHG emissions that are excluded from our reporting. We then compared the excluded, Scope 1 estimated emissions to the total Scope 1 emissions to arrive at the estimated percentage represented by the exclusions.

## C6.5

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

### Purchased goods and services

---

#### Evaluation status

Relevant, not yet calculated

#### Please explain

Spend data is a key component of the economic input output analysis and is derived from supplier spend at a part number and manufacturing country level for increased granularity using USEPA EEIO 2.0 Price Adjusted method... This is extremely important for water life cycle analysis since location is important for water security. As a calibration method, CDP Supply Chain tier 1 data is compared to improve accuracy. 2020 LCA data was verified by a 3rd party in 2022. It has not been calculated for 2021 data sets yet. As the GHG emissions from Scope 3, Category 1 are over 11 times our Scope 1 & 2 market-based emissions, and over 9 times our Scope 1 & 2 location based emissions, it is relevant.

## Capital goods

---

### Evaluation status

Relevant, not yet calculated

### Please explain

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 using USEPA EEIO 2.0 Price Adjusted method.. This is extremely important for water life cycle analysis since location is important for water security. 2020 LCA data was verified by a 3rd party in 2022. It has not been calculated for 2021 data sets yet. As the GHG from Capital Goods is nearly 72% of our Scope 1 & 2 emissions, it is relevant.

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

---

### Evaluation status

Relevant, not yet calculated

### Please explain

NGERS and USEIA factors account for half of the calculation, whereas, actual data from scope 1 and 2 comprise the remaining portion of data. Based on the methodology used, the value is 7% and is over 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, not yet calculated

### Please explain

USEPA SmartWay provides data from carriers using fuel use and from GM shipments for distances travelled and load weights for truck and rail. For ship and air, we used revenue spend from suppliers and CDP analytics provides companies revenue intensities as secondary data. The quantity is nearly 80% of our scope 1 and 2 GHG emissions and deemed relevant to our carbon footprint. It has not been calculated for 2021 data sets yet.

## Waste generated in operations

---

**Evaluation status**

Relevant, not yet calculated

**Please explain**

In 2020 we modified our goal to "Zero Waste" from landfill free. As GM increases its waste reuse and recycling, our GHG from waste to landfill are expected to reduce accordingly. It has not been calculated for 2021 data sets yet.

**Business travel**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

AMEX provides GHG from air travel for an estimate of business travel. Business travel with company owned vehicles is included in our scope 1 GHG. Distances travelled 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. Business air travel was verified by an independent 3rd party in 2020.

**Employee commuting**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

GM estimates employee travel based on CDP data from an auto sector company normalized by employee count times number of employees. Based on the methodology used, the value is less than 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.

**Upstream leased assets**

---

**Evaluation status**

Not relevant, explanation provided

**Please explain**

Based on the methodology used, the value is 0.2% 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. Area of leased space is primary data and intensity factors is secondary.

**Downstream transportation and distribution**

---

**Evaluation status**

Relevant, not yet calculated

**Please explain**

USEPA SmartWay provides data from carriers using fuel use and from GM shipments for distances travelled and load weights for truck and rail. For ship and air, we used revenue spend from suppliers and CDP analytics provides companies revenue intensities as secondary data. The quantity is 38% of our scope 1 and 2 GHG emissions and deemed relevant to our carbon footprint. It has not been calculated for 2021 data sets yet.

## Processing of sold products

---

### Evaluation status

Not relevant, explanation provided

### Please explain

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.

## Use of sold products

---

### Evaluation status

Relevant, calculated

### Emissions in reporting year (metric tons CO<sub>2</sub>e)

233,167,875

### Emissions calculation methodology

Average product method

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

50

### Please explain

Based on the methodology used the value is nearly 60 times that of our Scope 1 + Scope 2 location based emissions and over 69 times that of our Scope 1 & Scope 2 market based emissions. This category is considered to be relevant to our carbon footprint. 2021 calculation of life cycle GHG from vehicles sold is done using well to wheel methodology. Vehicle emissions were verified by a third party, including mobile air conditioning fugitive emissions of GHG, which accounts for less than 1% and gradually lowering 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, not yet calculated

### Please explain

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 71% of scope 1 and 2, it is relevant. Primary data is vehicle volume and secondary is Product LCA. It has not been calculated for 2021 data sets yet.

### Downstream leased assets

---

#### Evaluation status

Not relevant, explanation provided

#### Please explain

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. 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.

### Franchises

---

#### Evaluation status

Not relevant, explanation provided

#### Please explain

Based on the methodology used, the value is 4% 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, explanation provided

#### Please explain

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.

### Other (upstream)

---

#### Evaluation status

Not evaluated

#### Please explain

Not applicable

### Other (downstream)

---

#### Evaluation status

Not evaluated

#### Please explain

Not applicable

## C6.7

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

No

## C6.10

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

---

**Intensity figure**

0.00003

**Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO<sub>2</sub>e)**

3,403,600

**Metric denominator**

unit total revenue

**Metric denominator: Unit total**

113,584,000,000

**Scope 2 figure used**

Market-based

**% change from previous year**

14.6

**Direction of change**

Decreased

**Reason for change**

We saw an increase in revenue and a decrease in gross global CO<sub>2</sub>e emissions and operations GHG intensities in 2021 as compared to 2020. While we saw an overall decrease in production and a 4.5% increase in revenues in 2021 compared to 2020, we would expect a decrease in revenue intensity as fixed energy usually drives both revenue and vehicle intensities.

---

**Intensity figure**

0.61

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

3,403,600

**Metric denominator**

vehicle produced

**Metric denominator: Unit total**

5,585,048

**Scope 2 figure used**

Market-based

**% change from previous year**

2

**Direction of change**

Decreased

**Reason for change**

We saw a reduction of 2% in tons of CO2e per vehicle in 2021 compared to 2020, primarily due to the plant shutdowns in response to the global chip shortage.

## C7. Emissions breakdowns

### C7.1

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

Yes

### C7.1a

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

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	1,176,955	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	75,951	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	950,224
South America	37,643
Other, please specify International (rest of world)	265,039

## C7.3

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

By business division

### C7.3a

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

Business division	Scope 1 emissions (metric ton CO <sub>2</sub> e)
GM North America	950,224
GM South America	37,643
GM International (rest of world)	265,039

## 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 CO<sub>2</sub>e.**

	Gross Scope 1 emissions, metric tons CO <sub>2</sub> e	Comment
Transport OEM activities	1,252,906	We are including 100% of our scope 1 emissions as resulting from Transport OEM activities.

## C7.5

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

Country/Region	Scope 2, location-based (metric tons CO <sub>2</sub> e)	Scope 2, market-based (metric tons CO <sub>2</sub> e)
North America	1,789,302	1,058,246
South America	42,405	42,388
Other, please specify International (rest of world)	1,050,061	1,050,061



## 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 (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
GM North America	1,789,302	1,058,246
GM South America	42,405	42,388
GM International (rest of world)	1,050,061	1,050,061

## 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
Transport OEM activities	2,881,767	2,150,694	We are including 100% of our scope 2 emissions as resulting from Transport OEM activities.

## 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

0.000246

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

232,436

**Metric denominator**

p.km

**Metric denominator: Unit total**

943,650,000,000

**% change from previous year**

2

**Vehicle unit sales in reporting year**

6,291,000

**Vehicle lifetime in years**

10

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

15,000

**Load factor**

GM does not track passengers per vehicle and used 1.45 as the average of EEA, "Occupancy Rates of Passenger Vehicles" (European Environment Agency, 2015), or range of 1.2 and 1.7

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

SBTi methodology for Well to Wheel gCO<sub>2</sub>e/km Scope 3, Use of Sold Products, Category 11

## 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 CO <sub>2</sub> e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	220,332	Decreased	5.78	GM added a large green tariff (renewable electric) account to our Renewable Energy Portfolio, covering multiple production facilities in the U.S. This

				increased our consumption of renewable energy in 2021. In addition, existing green tariff accounts for two facilities in the U.S. were added mid year 2020, however, in 2021 these facilities consumed renewable electric for the full year. Calculation: Change in emissions in column 2) /previous year emissions * 100% - 220332/3813946 *100 = -5.78%
Other emissions reduction activities	151,708	Decreased	3.98	GM implemented about 306 energy conservation initiatives in 2021 including behavioral changes, HVAC improvements, Building Management Systems, LED lights, and paint process improvements (Variable Speed Drives on motors and process controls). Calculation: Change in emissions in column 2) / Previous year emissions * 100% - 151,708/3813946 x 100% = -3.98%
Divestment	43,682	Decreased	1.15	GM implemented about 306 energy conservation initiatives in 2021 including behavioral changes, HVAC improvements, Building Management Systems, LED lights, and paint process improvements (Variable Speed Drives on motors and process controls). Calculation: Change in emissions in column 2) / Previous year emissions * 100% - 151,708/3813946 x 100% = -3.98% GM divested of operations in US, Australia, and South Korea resulting in reduced emissions compared to 2020. Calculation: Change in emissions in column 2) / Previous year emissions * 100% - 43682/3813946x100 = -1.15%
Acquisitions	0	No change	0	GM had minimal acquisitions that affect GHG emissions.
Mergers	0	No change	0	GM had minimal mergers that affect GHG emissions.
Change in output	372,650.4	Decreased	9.8	GM's vehicle production reduced by 8.9% in 2021 vs. 2020 and with 0.39 tons per vehicle, we estimated the change in GHG due to volume reductions. Calculation: Change in emissions in column 2) /

				Previous year emissions * 100% - 372,650.4/3,813,946 = -9.8%
Change in methodology	63,753	Decreased	1.7	Based on the use of IEA Electric emission factors in 2021 vs. Electric emission factors from local guidance in 2020 for GM's facilities in South Korea, Brazil, Canada & Australia. Calculation: Change in emissions in column 2) / Previous year emissions * 100%: -63753/3,813,946x100 = -1.67% = ~ 1.7%
Change in boundary	0	No change	0	Not applicable
Change in physical operating conditions	0	No change	0	Cooling degree and Heating degree days were similar year over year so the effect on operating conditions was negligible.
Unidentified	443,400	Increased	11.6	Due to the global pandemic and numerous site closures due to part shortages, we estimate the uncertainty of change at 11.6%. When facilities are idled for long periods of time our normal regression methods for forecasts are not as accurate as during continuous production. Calculation: Change in emissions in column 2) / Previous year emissions * 100% - 443,400/3,813,946x100 = 11.6%
Other	0	No change	0	Not applicable

## C7.9b

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

Market-based

## C8. Energy

### C8.1

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

More than 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 undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	Yes
Generation of electricity, heat, steam, or cooling	Yes

### C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	476,028.78	5,846,861.38	6,322,890
Consumption of purchased or acquired electricity		1,352,487	4,616,515	5,969,002

Consumption of purchased or acquired heat		0	12,381	12,381
Consumption of purchased or acquired steam		0	248,327	248,327
Consumption of purchased or acquired cooling		0	255	255
Consumption of self-generated non-fuel renewable energy		619		619
Total energy consumption		1,499,494	11,053,361	12,552,855

## C8.2b

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

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	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	No

## C8.2c

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

**Sustainable biomass**

**Heating value**

**Total fuel MWh consumed by the organization**

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

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

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

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

**Comment**

Not Applicable

**Other biomass**

---

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

476,029

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

404,359.46

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

0

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

71,669.32

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

0

**Comment**

Landfill Gas is used as a boiler fuel and to self-generate electricity.

**Other renewable fuels (e.g. renewable hydrogen)**

---

**Heating value**

**Total fuel MWh consumed by the organization**

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

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

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

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

**Comment**

Not Applicable

**Coal**

---

**Heating value**

**Total fuel MWh consumed by the organization**

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

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

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

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

**Comment**

Not Applicable

**Oil**

---

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

11,261.19

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

0

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

11,261.19

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

0

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

0



**Comment**

Kerosene is used in paint ovens to cure paint, Oil & Diesel use is primarily for small heater use and back up testing for boilers.

**Gas**

---

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

5,823,023

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

0

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

2,713,529

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

3,016,326

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

93,168

**Comment**

Natural Gas is used for ovens to cure paint, building heating, and generation of hot water and steam in boilers.

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

---

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

12,577.08

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

0

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

0

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

0

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

0

**Comment**

LPG is used for mobile equipment.

**Total fuel**

---

**Heating value**

HHV

**Total fuel MWh consumed by the organization**

6,322,890

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

404,359

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

2,724,790

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

3,087,995

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

93,168

**Comment**

**C8.2d**

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

	<b>Total Gross generation (MWh)</b>	<b>Generation that is consumed by the organization (MWh)</b>	<b>Gross generation from renewable sources (MWh)</b>	<b>Generation from renewable sources that is consumed by the organization (MWh)</b>
Electricity	146,002	133,439	146,002	133,439
Heat	2,724,790	2,724,790	0	0
Steam	3,159,664	3,087,995	71,669	71,669
Cooling	93,168	93,168	0	0

**C8.2g**

**(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.**

---

**Country/area**

Argentina

**Consumption of electricity (MWh)**

38,365.52

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

0

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

38,365.52

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Australia

**Consumption of electricity (MWh)**

1,312.75

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

0

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

1,312.75

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Brazil

**Consumption of electricity (MWh)**

293,206.09

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

0

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

293,206.09

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Canada

**Consumption of electricity (MWh)**

229,530.35

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

0

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

229,530.35

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

China

**Consumption of electricity (MWh)**

1,290,224.98

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

107,874.36

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

1,398,099.34

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Colombia

**Consumption of electricity (MWh)**

11,754.14

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

0

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

11,754.14

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Ecuador

**Consumption of electricity (MWh)**

7,794.14

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

0

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

7,794.14

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Egypt

**Consumption of electricity (MWh)**

19,921.39

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

0

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

19,921.39

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Ireland

**Consumption of electricity (MWh)**

2,087.82

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

0

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

2,087.82

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Japan

**Consumption of electricity (MWh)**

37.05

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

0

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

37.05

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Republic of Korea

**Consumption of electricity (MWh)**

330,798.68

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

0

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

330,798.68

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Mexico

**Consumption of electricity (MWh)**

664,939.2

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

0

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

664,939.2

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Philippines

**Consumption of electricity (MWh)**

126.88

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

254.61

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

381.49

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Russian Federation

**Consumption of electricity (MWh)**

34

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

0

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

34

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

Switzerland

**Consumption of electricity (MWh)**

15.17

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

0

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

15.17

**Is this consumption excluded from your RE100 commitment?**

No

---

**Country/area**

United States of America

**Consumption of electricity (MWh)**

3,098,853.82

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

152,833.42

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

3,251,687.24

**Is this consumption excluded from your RE100 commitment?**

No

## C8.2h

**(C8.2h) Provide details of your organization's renewable electricity purchases in the reporting year by country**

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Default delivered renewable electricity from the grid, supported by energy attribute certificates

**Renewable electricity technology type**

Renewable electricity mix, please specify  
Grid Renewable Mix, Michigan RPS

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

209,953.41

**Tracking instrument used**

US-REC



**Total attribute instruments retained for consumption by your organization (MWh)**

209,953.41

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,008

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify  
Retired on our behalf

**Comment**

Michigan RPS

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Default delivered renewable electricity from the grid, supported by energy attribute certificates

**Renewable electricity technology type**

Renewable electricity mix, please specify  
Grid Renewable Mix, Missouri RPS

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

23,431.83

**Tracking instrument used**

US-REC

**Total attribute instruments retained for consumption by your organization (MWh)**

23,431.83

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,007

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify  
retired on our behalf

**Comment**

Missouri RPS

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Green electricity products from an energy supplier (e.g. Green Tariffs)

**Renewable electricity technology type**

Wind

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

36,515.59

**Tracking instrument used**

US-REC

**Total attribute instruments retained for consumption by your organization (MWh)**

36,515.59

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,019

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify  
retired on our behalf

**Comment**

CMS Green Tariff – Bay City

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Green electricity products from an energy supplier (e.g. Green Tariffs)

**Renewable electricity technology type**

Wind

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

83,079.78

**Tracking instrument used**

US-REC

**Total attribute instruments retained for consumption by your organization (MWh)**

83,079.78

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,018

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify  
retired on our behalf

**Comment**

CMS Green Tariff - Flint

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Green electricity products from an energy supplier (e.g. Green Tariffs)

**Renewable electricity technology type**

Wind

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

176,169.09

**Tracking instrument used**

US-REC

**Total attribute instruments retained for consumption by your organization (MWh)**

176,169.09

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,021

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify  
retired on our behalf

**Comment**

DTE Green Tariff Phase I

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Direct procurement from an offsite grid-connected generator e.g. Power Purchase Agreement (PPA)

**Renewable electricity technology type**

Wind

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

264,388

**Tracking instrument used**

US-REC

**Total attribute instruments retained for consumption by your organization (MWh)**

264,388

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,018

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify

ERCOT - State of TX Renewable Energy Trading Program

**Comment**

NW Ohio Wind VPPA

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Direct procurement from an offsite grid-connected generator e.g. Power Purchase Agreement (PPA)

**Renewable electricity technology type**

Wind

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

333,297

**Tracking instrument used**

US-REC

**Total attribute instruments retained for consumption by your organization (MWh)**

333,297

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,019

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify

ERCOT - State of TX Renewable Energy Trading Program

**Comment**

Hill Topper/Trishe Wind VPPA

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Direct procurement from an offsite grid-connected generator e.g. Power Purchase Agreement (PPA)

**Renewable electricity technology type**

Wind

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

77,725

**Tracking instrument used**

US-REC

**Total attribute instruments retained for consumption by your organization (MWh)**

77,725

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,018

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify

ERCOT - State of TX Renewable Energy Trading Program

**Comment**

Cactus Flats Wind VPPA

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Direct procurement from an offsite grid-connected generator e.g. Power Purchase Agreement (PPA)

**Renewable electricity technology type**

Wind

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

146,111

**Tracking instrument used**

US-REC

**Total attribute instruments retained for consumption by your organization (MWh)**

146,111

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,017

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify

ERCOT - State of TX Renewable Energy Trading Program

**Comment**

Hidalgo Wind VPPA

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Purchase from an on-site installation owned by a third party

**Renewable electricity technology type**

Solar

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

1,662.59

**Tracking instrument used**

Contract

**Total attribute instruments retained for consumption by your organization (MWh)**

1,662.59

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,013

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify

3rd-Party Owned On-Site Solar Array

**Comment**

Solcient Solar (3rd-Party Owned On-Site Solar Array) - Toledo

---

**Country/area of renewable electricity consumption**

United States of America

**Sourcing method**

Purchase from an on-site installation owned by a third party

**Renewable electricity technology type**

Solar

**Renewable electricity consumed via selected sourcing method in the reporting year (MWh)**

154.42



**Tracking instrument used**

Contract

**Total attribute instruments retained for consumption by your organization (MWh)**

154.42

**Country/area of origin (generation) of the renewable electricity/attribute consumed**

United States of America

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

2,015

**Vintage of the renewable energy/attribute (i.e. year of generation)**

2021

**Brand, label, or certification of the renewable electricity purchase**

Other, please specify

3rd-party owned on-site Solar Array

**Comment**

Salt River (3rd-party owned on-site Solar Array) – Arizona IT

## C8.2i

**(C8.2i) Provide details of your organization's low-carbon heat, steam, and cooling purchases in the reporting year by country.**

---

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

**Sourcing method**

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

**Energy carrier**

**Low-carbon technology type**

**Low-carbon heat, steam, or cooling consumed (MWh)**

**Comment**

N/A – we do not currently purchase low carbon heat, steam or cooling.

## C8.2j

**(C8.2j) Provide details of your organization's renewable electricity generation by country in the reporting year.**

---

**Country/area of generation**

Brazil

**Renewable electricity technology type**

Solar

**Facility capacity (MW)**

0.3

**Total renewable electricity generated by this facility in the reporting year (MWh)**

176

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)**

176

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)**

0

**Renewable electricity sold to the grid in the reporting year (MWh)**

0

**Certificates issued for the renewable electricity that was sold to the grid (MWh)**

0

**Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)**

0

**Type of energy attribute certificate**

**Total self-generation counted towards RE100 target (MWh) [Auto-calculated]**

176

**Comment**

Electricity generated from solar consumed on site.

---

**Country/area of generation**

United States of America

**Renewable electricity technology type**

Solar

**Facility capacity (MW)**

0.34

**Total renewable electricity generated by this facility in the reporting year (MWh)**

541

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)**

541

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)**

0

**Renewable electricity sold to the grid in the reporting year (MWh)**

0

**Certificates issued for the renewable electricity that was sold to the grid (MWh)**

0

**Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)**

0

**Type of energy attribute certificate**

**Total self-generation counted towards RE100 target (MWh) [Auto-calculated]**

541

**Comment**

Electricity generated from solar consumed on site.

---

**Country/area of generation**

United States of America

**Renewable electricity technology type**

Solar

**Facility capacity (MW)**

1.8

**Total renewable electricity generated by this facility in the reporting year (MWh)**

288

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)**

288

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)**

0

**Renewable electricity sold to the grid in the reporting year (MWh)**

0

**Certificates issued for the renewable electricity that was sold to the grid (MWh)**

0

**Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)**

0

**Type of energy attribute certificate**

**Total self-generation counted towards RE100 target (MWh) [Auto-calculated]**

288

**Comment**

Electricity generated from solar consumed on site.

---

**Country/area of generation**

United States of America

**Renewable electricity technology type**

Sustainable biomass

**Facility capacity (MW)**

8

**Total renewable electricity generated by this facility in the reporting year (MWh)**

45,650

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)**

36,667

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)**

0

**Renewable electricity sold to the grid in the reporting year (MWh)**

8,983

**Certificates issued for the renewable electricity that was sold to the grid (MWh)**

0

**Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)**

0

**Type of energy attribute certificate**

**Total self-generation counted towards RE100 target (MWh) [Auto-calculated]**

36,667

**Comment**

GM Retained the renewable energy attributes for the electric (generated from landfill gas) that was sold to the grid at this site.

---

**Country/area of generation**

United States of America

**Renewable electricity technology type**

Sustainable biomass

**Facility capacity (MW)**

6.4

**Total renewable electricity generated by this facility in the reporting year (MWh)**

50,466

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)**

50,466

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)**

0

**Renewable electricity sold to the grid in the reporting year (MWh)**

0

**Certificates issued for the renewable electricity that was sold to the grid (MWh)**

0

**Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)**

0

**Type of energy attribute certificate**

**Total self-generation counted towards RE100 target (MWh) [Auto-calculated]**

50,466

**Comment**

Electricity generated from landfill gas consumed on site.

---

**Country/area of generation**

Canada

**Renewable electricity technology type**

Sustainable biomass

**Facility capacity (MW)**

6.4

**Total renewable electricity generated by this facility in the reporting year (MWh)**

46,306

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were not issued (MWh)**

46,306

**Renewable electricity directly consumed by your organization from this facility in the reporting year for which certificates were issued and retired (MWh)**

0

**Renewable electricity sold to the grid in the reporting year (MWh)**

0

**Certificates issued for the renewable electricity that was sold to the grid (MWh)**

0

**Certificates issued and retired for self-consumption for the renewable electricity that was sold to the grid (MWh)**

0

**Type of energy attribute certificate**

**Total self-generation counted towards RE100 target (MWh) [Auto-calculated]**

46,306

**Comment**

Electricity generated from landfill gas consumed on site.

## **C8.2k**

**(C8.2k) Describe how your organization's renewable electricity sourcing strategy directly or indirectly contributes to bringing new capacity into the grid in the countries/areas in which you operate.**

GM primarily procures renewable energy through Virtual Power Purchase Agreements (VPPAs) and Green Tariffs. With VPPAs we work directly with a developer to create new renewable generation sources, such as wind or solar. GM also partners with local utilities through their Green Tariff offerings, which enables utilities to make investments to develop new renewable generation assets. For example, GM signed a Green Tariff with the Tennessee Valley Authority in 2021 to source 28 MW of solar for Bowling Green Assembly in Kentucky. Furthermore, Phase 1 of a Green Tariff agreement with DTE in Michigan for 300,000 MWh of wind assets began producing renewable energy in 2021. Additionally, GM is a founding member of the Clean Energy Buyers' Association, an organization which advocates for the addition of low-cost renewable assets to the US electricity system, so our membership indirectly helps add new capacity to the grid. Furthermore, GM supports our suppliers in setting and achieving renewable energy goals, which is another way we indirectly contribute to bringing new renewable capacity to the grid.

## C8.2I

**(C8.2I) In the reporting year, has your organization faced any challenges to sourcing renewable electricity?**

	Challenges to sourcing renewable electricity	Challenges faced by your organization which were not country-specific
Row 1	Yes, both in specific countries/areas and in general	In 2021, material supply chain shortages delayed asset development, as well as impacted project pricing.

## C8.2m

**(C8.2m) Provide details of the country-specific challenges to sourcing renewable electricity faced by your organization in the reporting year.**

Country/area	Reason(s) why it was challenging to source renewable electricity within selected country/area	Provide additional details of the barriers faced within this country/area
United States of America	Other, please specify  In the U.S., projects that were evaluated for potential investment in PJM territory had to be eliminated after the RTO stopped new capacity applications for interconnection, due to a backlog in the interconnection queue.	In the U.S., projects that were evaluated for potential investment in PJM territory had to be eliminated after the RTO stopped new capacity applications for interconnection, due to a backlog in the interconnection queue.

## C-TO8.5

**(C-TO8.5) Provide any efficiency metrics that are appropriate for your organization's transport products and/or services.**

### Activity

Light Duty Vehicles (LDV)

### Metric figure

36.95

### Metric numerator

tCO<sub>2</sub>e

### Metric denominator

Other, please specify  
Vehicle Sales

### Metric numerator: Unit total

232,436,024

### Metric denominator: Unit total



6,291,000

**% change from previous year**

2

**Please explain**

Total use of sold products is calculated annually for 2021. The method is consistent with SBTi methodology for Well to Wheel gCO<sub>2</sub>e/km Scope 3, Use of Sold Products, Category 11 multiplied by 2021 global volume and 150,000 lifetime vehicle kilometers plus annual assumed HFC losses from MVAC units (3% per year) over the lifetime of the vehicle, 10 years. Metric tons are normalized by sold vehicles in 2021 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**

1,464,097

**Metric numerator**

Total waste from GM operations in Metric Ton

**Metric denominator (intensity metric only)**

**% change from previous year**

3.85

**Direction of change**

Increased

**Please explain**

GM has developed and publicly committed to improve its Waste performance by 90% by 2025 under its Zero Waste goal. This represents the percentage of waste diverted from landfill, incinerators and energy recovery compared to a three-year average (2017-2019) baseline of total operational waste generated.

Because in 2020 GM drastically reduced its production output due to COVID, as operations resumed in 2021, we noticed an increase in waste generated. However, due to operation efficiencies, the increase was within the target for 2021, which shows

continuous improvement. It is also worth noting that 86% of this waste has been diverted from landfill, incinerations and energy recovery management methods.

## 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

7.6

### Metric unit

% of total sales

### Explanation

Our global commitment to realize an all-electric, zero-emissions future — from battery chemistry and architecture to safety validation and infrastructure — requires unprecedented investment in people and resources. This is why we are investing more than \$35 billion in EV and autonomous vehicle (AV) programs between 2020 and 2025. By the end of 2025, GM plans to have more than 1 million units of EV capacity in North America. This is in addition to more than 1 million units of EV capacity in China over the same time frame. GM's flexibility and engineering focus will drive the scale required to accelerate our path to zero emissions in a profitable and efficient way. In addition, we are leveraging existing assets, such as production tools and body and paint shops, so that economies of scale can be realized with less capital and further position the next generation of these products for profitability. Our global sales of electric vehicles in 2021 was 479,963 vehicles and the metric reported is based on sales volumes in 2021 of 6.3 M vehicles.

## C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

**(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?**

	Investment in low-carbon R&D	Comment
Row 1	Yes	Lightweight materials and other innovations further our EV development work—up to 80% of ICE ("Internal Combustion Engine") vehicle development costs that don't involve propulsion are also shared by EVs. GM's total spend on R&D in 2021 was \$7.9 B USD.

## C-T09.6a/C-TS9.6a

**(C-T09.6a/C-TS9.6a) Provide details of your organization's investments in low-carbon R&D for transport-related activities over the last three years.**

### Activity

Light Duty Vehicles (LDV)

### Technology area

Electrification

### Stage of development in the reporting year

Full/commercial-scale demonstration

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

≤20%

### R&D investment figure in the reporting year (optional)

7,900,000,000

### Comment

We have two decades of electrification knowledge and experience and have invested billions in research and development. This includes a \$1.5 billion investment at our Technical Center, where we have expanded and enhanced our state-of-the-art battery testing lab, as well as other R&D facilities. The battery lab has been the largest and most advanced test lab in America for over a decade. The latest expansion brings the facility to more than 100,000 square feet and includes heavy and mild battery abuse test areas and new test chambers. Today, more than 50 percent of the work at our Technical Center is focused on EV development compared with about 20 percent three years ago. Starting in 2021, more than half of GM's capital spending and product development team will be devoted to electric and electric-autonomous vehicle programs. These types of R&D investment are one reason that GM has more than 3,000 global patents related to electrification on file today. The value reported is our total R&D as stated in our 10k.

## 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 emissions, and attach the relevant statements.**

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Complete

**Type of verification or assurance**

Limited assurance

**Attach the statement**

 ver\_stmt\_2021\_GM\_Global\_20220310\_signed.pdf

**Page/ section reference**

2

**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 2 emissions and attach the relevant statements.**

**Scope 2 approach**

Scope 2 market-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**

 ver\_stmt\_2021\_GM\_Global\_20220310\_signed.pdf

**Page/ section reference**

2

**Relevant standard**

ISO14064-3

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

100

## C10.1c

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

---

**Scope 3 category**

Scope 3: Purchased goods and services

Scope 3: Capital goods

Scope 3: Upstream transportation and distribution

Scope 3: Business travel

Scope 3: Downstream transportation and distribution

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

Underway but not complete for reporting year – previous statement of process attached

**Type of verification or assurance**

Limited assurance

**Attach the statement**

 ver\_stmt\_2020\_Scope3\_GM\_Global\_20220310\_signed (2).pdf

**Page/section reference**

2

**Relevant standard**

ISO14064-3

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

100

---

**Scope 3 category**

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

Scope 3: Waste generated in operations

Scope 3: Employee commuting

Scope 3: Upstream leased assets

Scope 3: Investments

Scope 3: Processing of sold products

Scope 3: End-of-life treatment of sold products

Scope 3: Downstream leased assets

Scope 3: Franchises

**Verification or assurance cycle in place**

Annual process

**Status in the current reporting year**

No verification or assurance of current reporting year

**Type of verification or assurance**

Not applicable

**Attach the statement**

**Page/section reference**

Not applicable

**Relevant standard**

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

0

---

**Scope 3 category**

Scope 3: Use of sold products

**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**

 ver\_stmt\_2021\_GM\_Global\_20220707.pdf

**Page/section reference**

2

**Relevant standard**

ISO14064-3

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

100


**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
C4. Targets and performance	Year on year change in emissions (Scope 1 and 2)	ISO-14064-3	Our independent third party verified that GM reduced absolute Scope 1 & 2 emissions by 17.3% in 2021 compared to 2020. We also verify production, renewable electricity, waste, water, and energy use.  1

 1ver\_stmt\_2021\_GM\_Global\_20220310\_signed.pdf

## 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.**

Canada federal Output Based Pricing System (OBPS) - ETS

China national ETS

Korea ETS

### C11.1b

**(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.**

#### Canada federal OBPS - ETS

---

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

99

**% of Scope 2 emissions covered by the ETS**

0

**Period start date**

January 1, 2020

**Period end date**

December 31, 2020

**Allowances allocated**

58,215

**Allowances purchased**

7,490

**Verified Scope 1 emissions in metric tons CO<sub>2</sub>e**

66,369

**Verified Scope 2 emissions in metric tons CO<sub>2</sub>e**

0

**Details of ownership**

Facilities we own and operate



**Comment**

GM's primary focus for global ETS is energy efficiency to minimize allocations purchased and maximize carbon credits for sale. 2021 data not available yet. 664 banked credit from 2019 .

**China national ETS**

---

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

20.4

**% of Scope 2 emissions covered by the ETS**

79.6

**Period start date**

January 1, 2021

**Period end date**

December 31, 2021

**Allowances allocated**

333,574

**Allowances purchased**

0

**Verified Scope 1 emissions in metric tons CO<sub>2</sub>e**

63,943

**Verified Scope 2 emissions in metric tons CO<sub>2</sub>e**

249,144

**Details of ownership**

Facilities we own but do not operate

**Comment**

As our China and US Joint Venture ownerships include a managing director from GM for operations, we include active JV's in our carbon reporting and jointly share best practices.)

**Korea ETS**

---

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

33.1

**% of Scope 2 emissions covered by the ETS**

66.9

**Period start date**

January 1, 2021

**Period end date**

December 31, 2021

**Allowances allocated**

247,027

**Allowances purchased**

0

**Verified Scope 1 emissions in metric tons CO<sub>2</sub>e**

66,188

**Verified Scope 2 emissions in metric tons CO<sub>2</sub>e**

133,806

**Details of ownership**

Facilities we own and operate

**Comment**

Current balance is +116,776 CO<sub>2</sub>e tons. (2021 savings 47,045 tons, carry over from 2020 : 45,576 tons) GM will sell 30,874 CO<sub>2</sub>e tons in July 2022 and carry over 61,747 tons to 2022.

## C11.1d

**(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?**

GM's 2035 energy reduction goals of 35% from a baseline of 2010, coupled with our Science-based targets for operations of 72% reduction in absolute GHG from 2018 to 2035 require continuous improvement in energy efficiency. To meet these targets, GM needs to implement energy efficiency projects as part of our business plan. Our strategy for participating in regulated emissions trading schemes in Korea and China is to continue implementing energy efficiency projects and initiatives to reduce GHG and provide value from the sale of carbon credits in the marketplace to provide additional funding for continuous improvement. An example of why this is important to us is in from our plants in Korea that we gained \$1.3 M from the sale of carbon credits, reduced structural cost, and gained energy and carbon absolute reduction that will help us meet our goals.

Implementing energy efficiency in GM operations in Korea and China is an ongoing process as it is integrated into our business plans and includes Energy treasure hunts, energy teams and project and initiative implementation. In 2021 our GM operations in Korea and China plants implemented these projects for an estimated 12,400 reduction in GHG and cost savings of \$3.0USD with these projects such as; LED lights replaced less energy efficient ones, power cut off at peak time in battery charging stations, increasing compressor efficiency, shutting down boilers during non-production hours. These initiatives represent an opportunity for us to meet our goals, reduce our operations costs, and to sell carbon credits into the Korean Carbon Emission Trading Scheme. In 2021, GM Korea continued to make efficiency improvements and sold 71,200 CO<sub>2</sub>e tons at \$1.3M USD in 2021 or 18 USD/ton.

## 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**

GM's Energy efficiency projects usually provide a return on investment of 2-3 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 71,200 CO<sub>2</sub>e tons into the market at a price of \$18/ton, yielding \$1.3 M USD. An example of prioritization is for two energy saving LED projects with similar paybacks, one in US and one in Canada, would be prioritized by added benefit of more CO<sub>2</sub>e savings in US due to higher emission factors. Additionally, we modified our energy savings project tracking application to include a price on carbon in our energy efficiency and carbon reduction project prioritization process. This provides a method for reducing carbon as a top priority for implementing projects.

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

25

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

We have not used an estimated variance in price on carbon yet, as real market data is easiest for GM management to utilize as it is 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 as experienced in our facility in Korea where we sold credits to the market. GM modified our Energy Savings project tracking system (ETQ) in Reliance software to include in the savings based on our internal price on carbon to increase the return on investment for projects that have a more favorable carbon reduction. As an example, an LED retrofit project in USA with the same cost and savings would have a quicker payback than a similar project in Canada, where the carbon emission factor for electric is lower than in US.

## **C12. Engagement**

### **C12.1**

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

Yes, our suppliers

Yes, our customers/clients

### **C12.1a**

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

---

#### **Type of engagement**

Engagement & incentivization (changing supplier behavior)

#### **Details of engagement**

Run an engagement campaign to educate suppliers about climate change

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

2

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

99

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

14

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

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, our goal is for GM to become the

most inclusive company in the world. In order to be the most inclusive 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 and increased participation in more advanced technologies, such as electric and autonomous vehicles. In 2020, we started the Supplier Sustainability Sub-Council consisting of about 10 suppliers leading different areas like logistics, services and parts manufacture. The focus of the council is to develop the best method for sharing ideas on reducing energy, emissions and water throughout GM's entire supply chain. We seek to collaborate with suppliers who share our purpose and values. We expect our employees who work 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.

In 2021, over 300 suppliers were asked to respond to the CDP Climate questionnaire. Those suppliers were comprised of direct material strategic suppliers making up more than 83% of GM's supply chain spend in addition to suppliers identified as large GHG emitters.

We're expanding our scope to include all direct Tier 1 suppliers. When considering who to include in CDP Supply Chain reporting we focused on spend, strategic relationships and high emitting industries.

In scope direct Tier 1 suppliers are required to enroll in CDP as part of the supplier selection process. GM uses CDP scores to obtain sustainability data on current and potential suppliers. Scores from these tools may also be used in sourcing decisions.

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

In 2021, over 300 suppliers were asked to respond to the CDP Climate questionnaire. The percentage of participation of those responding to CDP Climate increased from 68% in 2019, to 96% in 2020, and to 99% in 2021. We aim to reach 100% participation by 2022 with the assistance of CDP Supply Chain. The analysis and measurements of the data collected through this initiative has shown a 12% increase of suppliers setting renewable energy consumption targets and a 6% decrease of suppliers reporting emissions and targets.

The decrease in the aforementioned areas is expected as we increased our response rate to 99% and many new CDP Supply Chain responders are just starting on their sustainability journey. It is encouraging to see our suppliers engaged in the Science Based Targets Initiative (SBTi) with 29 having an approved SBTi target and 28 anticipating an SBTi target within the next two years. In addition, a total of 8 suppliers are committed to RE-100 goals, similar to GM. In 2021, 50% of our reported suppliers engaged with their own suppliers to report to CDP. As well, there was a \$2.04 annual monetary savings from emissions reductions and 465M metric tons of estimate annual CO<sub>2</sub>e savings.

GM measures success in supply chain engagement on Climate Change by measuring response rate and year over year continuous improvement (CI). Here are the results for 2021 vs. 2020:

- Suppliers reporting to CDP increased from 96% to 99% with support from GM's global purchasing and supply chain team.
- Suppliers reporting climate targets in high GHG intensity (Power Generation and Fossil Fuels) reached 88% with 63% having developed a low-carbon transition plan.

GM's expectation for Continuous Improvement (CI) is based on four levels, 0) Compliance - CDP participation, 1) Commitment - targets, 2) Growth - aggressive targets, and 3) Leadership - SBTi, RE-100, Zero Waste, LCA, with various important aspects of supply chain engagement in Climate Change included for each of the 4 levels.

### Comment

Scope 3 categories 1 and 2 represent 14% of our total Scope 3 emissions

## C12.1b

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

---

### Type of engagement & Details of engagement

Education/information sharing

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

### % of customers by number

74

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

0.05

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

GM's strategy to grow the EV market begins at the retail level, with initiatives to educate dealer partners, create a network of EV experts and engage customers to drive EV awareness, consideration and sales.

Key pillars to GM's strategy to grow the EV market include:

- An all-new Electric Vehicle Experience Standards Program for participating dealerships. Through the program, each dealership designates an "EV Specialist" to champion the EV selling process at the store.
- Access to "EV Academy" and dedicated EV training courses for the EV Specialist to help them navigate customers through the charging experience, all while maintaining GM standards for customer satisfaction. Training is expected to include quarterly

training courses as identified by the GM Center for Learning, and enrolled specialists must achieve a 100% training percentage each quarter.

- A new “gamification” microtraining platform to supplement EV training and drive EV literacy.
- “EV Live,” a new platform to educate and guide dealers, customers, fleets and other parties with access to on-demand interactive training and consultation.
- An “EV Learn” feature of the myBrand mobile apps<sup>1</sup> to allow shoppers insight into the EV ownership experience, including a cost savings calculator.
- Innovative digital engagement tools, both in the physical and digital retail space, to guide customers through the shopping process. The Electric Vehicle Experience Standards Program provides dealers the opportunity to earn a monthly incentive for participating in initiatives designed to deliver on these customer experience objectives for EVs.

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

Putting customers at the center of everything we do extends to the experience they have when visiting GM dealerships. It is foundational that dealerships deliver a consistent level of sales and aftersales excellence to earn and maintain customer trust.

There are two elements of quality management systems that help us achieve this consistency across dealers: facility/customer experience conformance and sales performance. These elements are measured over five Dealer Quality programs, one of which highlights the EV Experience (EVX). It provides CX standards to assist dealers in offering EV customers an educational and transparent experience in their shopping and purchase of an EV. Includes specific training, equipment, tools and advertising guidelines. The EVX program also includes a sales performance opportunity for the EV specialist at the dealership. Out of GM's 3,834 dealers that have either a Chevy and/or GMC franchise, 2,867 are enrolled.

For illustrative purposes, approximately 74% of our Chevy and/or GMC dealers (our direct customers) have received education through the EVX program. We are aiming to engage 100% of our dealers.

## **C12.2**

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

Yes, climate-related requirements are included in our supplier contracts

## **C12.2a**

### **(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.**

**Climate-related requirement**

Complying with regulatory requirements

**Description of this climate related requirement**

We take pride in knowing that our suppliers and partners are equally dedicated to protecting our planet and fostering a healthy work environment. In recognition of this commitment, General Motors has included in our Supplier Code of Conduct environmental components consisting of Continuous Improvement and Responsible Stewardship that articulate to suppliers that they take measures to reduce their carbon footprint, energy use, water use, waste, and other emissions. In addition, suppliers will seek opportunities to conserve resources and protect the communities and environment that surround them. GM encourages its suppliers to develop and diffuse environmentally friendly technologies and to increase the use of renewable energies.

**% suppliers by procurement spend that have to comply with this climate-related requirement**

100

**% suppliers by procurement spend in compliance with this climate-related requirement**

100

**Mechanisms for monitoring compliance with this climate-related requirement**

Supplier self-assessment

**Response to supplier non-compliance with this climate-related requirement**

Retain and engage

## C12.3

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

Row 1

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**Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate**

Yes, we engage directly with policy makers

Yes, we engage indirectly through trade associations

Yes, we engage indirectly by funding other organizations whose activities may influence policy, law, or regulation that may significantly impact the climate

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

Yes

**Attach commitment or position statement(s)**



GM supports harmonized regulatory initiatives that provide clear guidance and benefits to those regulated entities moving toward achieving Paris climate objectives and providing key policy signals/levers that support future electrification.

Our efforts alone will not be enough to help the United States and other countries achieve their Paris Climate Agreement commitments. But we will be an essential part of the equation and are influencing others whose work is necessary to reach the goals of the Paris Climate Agreement.

In 2021, GM announced that it plans to become carbon neutral in its global products and operations by 2040.

 2021 Public Policy Supplement.pdf

**Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy**

As part of responsible participation in coalitions, GM regularly assesses alignment of their positions and advocacy strategy with our company's priorities and values.

GM also engages directly with organizations, including for example the U.S. Chamber of Commerce Environmental Affairs and Sustainability group, to collaborate on the development of policy positions and recommendations that support the goals of the Paris Agreement.

## C12.3a

**(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?**

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**Focus of policy, law, or regulation that may impact the climate**

Climate-related targets

**Specify the policy, law, or regulation on which your organization is engaging with policy makers**

Build Back Better Act (BBBA)

**Policy, law, or regulation geographic coverage**

National

**Country/region the policy, law, or regulation applies to**

United States of America

**Your organization's position on the policy, law, or regulation**

Support with minor exceptions

**Description of engagement with policy makers**

“...we look forward to the enactment of the Build Back Better plan that will truly help transform the U.S. automotive industry and put us on an irreversible path to a zero-emissions future”- MARY BARRA Chair and Chief Executive Officer, General Motors

GM has endorsed and is advocating for the Build Back Better Act (BBBA), noting specifically the importance of the measure’s climate change provisions. This advocacy has taken many forms including public statements, direct lobbying, participation in the Build Together CEO Working Group, and work within our associations.

The Build Back Better plan puts the country on the path toward addressing important issues such as strengthening the economy, advancing American innovation, and sustainability. GM believes the plan will help to advance our vision of zero crashes, zero emissions and zero congestion. General Motors looks forward to joining the President, Congress and the American people in celebrating enactment of legislation that creates a pro-growth, pro-jobs and pro-sustainability future.

**Details of exceptions (if applicable) and your organization’s proposed alternative approach to the policy, law or regulation**

A competitive tax rate is one of the most important components of the U.S. tax system, as it allows American companies to compete and expand investments in the United States.

While raising the U.S. corporate tax rate may produce additional revenue in the short term, we understand the economic research consensus is that higher corporate taxes slow growth and investment. An increase in the corporate tax rate would make the U.S. tax rate one of the highest in the OECD.

**Have you evaluated whether your organization’s engagement is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

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**Focus of policy, law, or regulation that may impact the climate**

Climate-related targets

**Specify the policy, law, or regulation on which your organization is engaging with policy makers**

The Infrastructure Investment & Jobs Act (IIJA)

**Policy, law, or regulation geographic coverage**

National

**Country/region the policy, law, or regulation applies to**

United States of America

**Your organization’s position on the policy, law, or regulation**

Support with no exceptions

### **Description of engagement with policy makers**

We advocated for passage of the Infrastructure Investment and Jobs Act (IIJA) by the U.S. Congress in 2021, as we believe it puts the United States on the path toward strengthening the economy and advancing innovation. The IIJA also lays the foundation for sustainability policies that will help address climate change and improve environmental quality and resiliency.

GM supports those goals and, we support those provisions, such as electric vehicle (EV) charging infrastructure, that accelerate the adoption of EVs and help to establish the United States as a global leader in electrification today and into the future.

We are encouraged by the provisions on EV infrastructure, EV supply chain and EV battery manufacturing and recycling development contained in the IIJA. We look forward to working with federal, state and local stakeholders to assist in the efficient distribution and use of these IIJA funds

General Motors applauds President Biden for signing into law the Infrastructure Investment and Jobs Act that will bring critical improvements to the nation. We appreciate those in the U.S. Congress who worked tirelessly to advance this historic legislation, including critical investments in electric vehicle charging infrastructure and road safety.

GM announced a commitment to support community-level charging station installation through its U.S. dealers and is presently engaged in providing policy recommendations for the implementation of the Infrastructure Investment and Jobs Act's electric charging infrastructure provisions.

GM endorsed and advocated for the EV and infrastructure provisions included the Infrastructure Investment & Jobs Act (Bipartisan Infrastructure Framework) that has now been signed into law by the president.

### **Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation**

#### **Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

## **C12.3b**

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

**Trade association**

Alliance of Automobile Manufacturers

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

Consistent

**Has your organization influenced, or is your organization attempting to influence their position?**

We have already influenced them to change their position

**State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)**

AAI is aligned with the Paris Agreement as it relates to the auto sector. "Auto manufacturers are committed to a net-zero carbon transportation future," said AAI President and CEO John Bozzella. AAI advocates for stringent GHG and fuel economy standards. With the right complementary policies in place, AAI believes that the auto industry is poised to accept the challenge of driving EV purchases to between 40 and 50 percent of new vehicle sales by the end of the decade.

GM shares AAI's goal of a net-zero carbon transportation future. GM held the Chairmanship position during AAI's first year and helped guide AAI's positioning on what is needed to achieve this goal with a focus on the needed complimentary policies and consumer education. AAI continues to work with stakeholders and NGOs in a manner consistent with this goal and a focus on a net-zero carbon future.

GM's leadership within AAI includes our work to amplify our plan to eliminate tailpipe emissions from new light-duty vehicles by 2035 and to bring more of industry into that vision. GM was the only OEM to support a NZEV policy as early as 2018 and continues to express the need for such a pathway with AAI members.

GM supports the emission reduction goals of California through MY26 and believes that the same environmental benefits can and should be achieved through a high-volume electric vehicle pathway that will set the industry on a stronger trajectory to greater GHG reductions in MY2027 and later.

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

**Describe the aim of your organization's funding**

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

Yes, we have evaluated, and it is aligned

### **Trade association**

Business Roundtable

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

Consistent

#### **Has your organization influenced, or is your organization attempting to influence their position?**

We have already influenced them to change their position

#### **State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)**

The BRT is aligned with the Paris Agreement and supports addressing climate change through a market-based strategy that includes a price on carbon where feasible and effective. The BRT's climate change and environmental policy position recognizes that a price on carbon remains the most important consideration for encouraging innovation, driving energy efficiency, and ensuring the needed emissions reductions to mitigate climate change. The BRT's support for a price on carbon is predicated on the conditions that the price should allow U.S. companies to remain competitive, ensure Americans are able to better withstand and recover from extreme weather events, and ensure communities most impacted by the transition to a low-carbon future are able to thrive. GM has determined it can best influence the BRT by continuing to participate as an active member and leader both of the BRT and in the transition to zero emissions.

GM and the BRT are aligned on numerous climate policy positions and advocating for solutions that address climate change through numerous pathways. These include, for example, market-based strategies and encouraging the importance of placing a value on carbon, investing in advanced technologies that eliminate carbon emissions, and driving energy efficiency economy wide. GM and the BRT members expressed this alignment in September 2020 through the release of a report focused on pathways to address climate change.

Due to provisions that would increase tax rates for the BRT member companies, the BRT opposed the Build Back Better Act (BBBA) in the U.S. House of Representatives. However, the BRT also stated that the association supports investment in climate change programs and incentives to reduce greenhouse gas emissions, including many of those proposed in the BBBA adding that Congressional action on climate change is critical to spurring investments in new technologies and enabling the United States to lead the global transition to a greener economy. Nevertheless, GM has publicly advocated and publicly expressed support for the BBBA to ensure that the company's position is differentiated from that of the BRT.

#### **Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)**

## **Describe the aim of your organization's funding**

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

Yes, we have evaluated, and it is aligned

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### **Trade association**

National Association of Manufacturers

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

Consistent

### **Has your organization influenced, or is your organization attempting to influence their position?**

We publicly promote their current position

### **State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)**

NAM supports the Paris Agreement and the association's climate change policy maintains three core principles:

- One unified policy: Instead of the patchwork of federal, state, and local climate change regulations that manufacturers currently face, the industry needs a clear federal policy that offers predictability, consistency, and certainty while meeting science-based targets. Businesses should be able to plan for the future — and shouldn't have to worry that the policies of today will be different tomorrow.
- A level playing field: Any national policy to address emissions should be economy-wide and apply to all emitters. Congress should develop plans that don't unduly burden one sector over another, and manufacturers shouldn't be expected to shoulder the already-high cost of new regulations alone.
- Consumer choice and competitiveness: This policy approach shouldn't automatically involve a mandated phaseout of any manufactured product. Instead, policymakers should lead with the tools and strategies manufacturers need to improve products, preserving consumer choice and supporting the innovation that manufacturing provides.

GM has determined it can best influence NAM by continuing to participate as an active member and leader in the transition to zero emissions.

### **Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)**

## **Describe the aim of your organization's funding**

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

Yes, we have evaluated, and it is aligned

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### **Trade association**

US Chamber of Commerce

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

Mixed

### **Has your organization influenced, or is your organization attempting to influence their position?**

We have already influenced them to change their position

### **State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)**

The Chamber has progressed on its climate change position. This includes putting forth a comprehensive climate position that includes supporting U.S. participation in the Paris Climate Agreement as well as calling on policy makers to act on climate. GM and other members worked with the Chamber to align priorities on climate change.

GM has consistently maintained that the Chamber should embrace a more progressive approach to climate challenge, including support for market-based emissions reduction policies, U.S. participation in the Paris Agreement, and supporting the climate change provisions of President Biden's Build Back Better Act (BBBA).

To this end, GM CEO Mary Barra has met with the Chamber as recently as September 2021 to express GM's climate policy position, our vision for an all-EV future and for the Chamber to support complimentary policies needed to achieve that vision. GM has not financially contributed toward the Chamber's issue advocacy campaign in opposition to BBBA.

The U.S. Chamber of Commerce (The Chamber) focuses on areas of common ground to address climate change with policies that are practical, flexible, predictable, and durable. They believe in a policy approach that acknowledges the costs of action and inaction and the competitiveness of the U.S. economy.

The Chamber's climate policy principles are:

- Support a market-based approach to accelerate greenhouse gas emissions reductions across the U.S. economy
- Leverage the power of business
- Maintain U.S. leadership in climate science
- Embrace technology and innovation
- Aggressively pursue greater energy efficiency

- Promote climate resilient infrastructure
- Support trade in U.S. technologies and products • Encourage international cooperation

Additionally, the Chamber has launched a Task Force open to its entire membership to inform the organization's climate policy. GM and other members worked with the Chamber to align priorities on climate change. The Chamber's Center for Capital Markets Competitiveness coordinated with other businesses to learn more about evolving positions and current practices from the public company perspective.

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

**Describe the aim of your organization's funding**

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

Yes, we have evaluated, and it is not aligned

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**Trade association**

Other, please specify

Truck and Engine Manufacturers Association

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

Mixed

**Has your organization influenced, or is your organization attempting to influence their position?**

We are attempting to influence them to change their position

**State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)**

GM's engagement with EMA has made plain our aspiration to transition to a zero-emission future for light-duty vehicles by 2035, and we have and will continue to work with EMA to engage with policymakers to advance the regulatory and legislative framework needed to enable zero-emissions transportation.

EMA does not have a formal position on the Paris Agreement. Because improved efficiency also results in lower greenhouse gas emissions, engine and truck manufacturers' efforts to improve fuel efficiency for customers align well with the overall goals of fighting climate change.

On fuel efficiency, their position is that better fuel efficiency is a key customer demand in



the commercial vehicle sector, and EMA members continuously work to introduce better and more efficient technologies and systems into the marketplace.

GM is aligned with EMA on both electrification as well as the complimentary policies needed to facilitate industry's transition.

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

**Describe the aim of your organization's funding**

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

Yes, we have evaluated, and it is not aligned

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**Trade association**

Other, please specify  
Climate Leadership Council

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

Consistent

**Has your organization influenced, or is your organization attempting to influence their position?**

We publicly promote their current position

**State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)**

The Climate Leadership Council is focused on promoting effective, fair, and lasting climate solutions based on the carbon dividends plan. CLC is aligned with the Paris Agreement and advocates for policies that would rapidly lower carbon emissions, invests all Americans in a clean energy future, and holds other countries accountable for environmental stewardship.

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

**Describe the aim of your organization's funding**

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

Yes, we have evaluated, and it is aligned

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**Trade association**

Other, please specify

American Automotive Policy Council

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

Inconsistent

**Has your organization influenced, or is your organization attempting to influence their position?**

We are attempting to influence them to change their position

**State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)**

AAPC has not taken a public position on the Paris Agreement because it is outside of the scope of AAPC's agreed scope of advocacy efforts. However, all three AAPC member companies do support the Paris goals .AAPC is encouraged by the Biden Administration's goals to boost the U.S. domestic PHEV/BEV market. GM actively supported and funded AAPC's efforts to study and understand how trade policies could be used to enable more EV exports from the United States. GM also encouraged AAPC to provide industry-representative comments on the U.S. Government's development of a clean technologies export competitiveness strategy.

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

**Describe the aim of your organization's funding**

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

Yes, we have evaluated, and it is not aligned

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**Trade association**

Other, please specify

Electric Drive Transportation Association

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

Inconsistent

**Has your organization influenced, or is your organization attempting to influence their position?**

We are attempting to influence them to change their position

**State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)**

EDTA does not have a formal position on the Paris Agreement. EDTA has been a consistent voice in advocating for the needed complimentary policies for EVs such as consumer incentives, infrastructure incentives, as well as consumer education. EDTA and GM are aligned on eliminating all tailpipe emissions from new light-duty vehicles by 2035, working with stakeholders to enable the EV charging infrastructure, and promoting consumer acceptance while maintaining high quality jobs. GM diverges from EDTA members in that GM is transitioning to full function battery EVs and supporting policies focused on pure battery EVs rather than passthrough technologies such as hybrids or plug-in hybrids that some EDTA members support. In addition, GM called for a national ZEV policy in 2018.

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

**Describe the aim of your organization's funding**

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

Yes, we have evaluated, and it is not aligned

## C12.3c

**(C12.3c) Provide details of the funding you provided to other organizations in the reporting year whose activities could influence policy, law, or regulation that may impact the climate.**

---

**Type of organization**

Non-Governmental Organization (NGO) or charitable organization

**State the organization to which you provided funding**

Clean Energy Buyers' Association (CEBA)

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

75,000

**Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate**

Our membership in CEBA supports our zero emissions vision. Their efforts include advocating for legislation to further a decarbonized electric grid. For example, in 2021 they advocated for transmission funding to be included in the Build Back Better Act. Because of this, \$9 billion was included with the aim of creating a 21st Century energy grid capable of ensuring reliable delivery of clean energy throughout the United States. In early 2019, GM began a partnership with Google, Facebook, Walmart to launch CEBA as a standalone entity. By working to unlock the marketplace for organizations to buy renewable energy, CEBA is striving for a 90% decarbonized US electricity system by 2030. The group now has over 300 members and is the —the largest group of corporate renewable energy buyers in the United States

**Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

---

**Type of organization**

Private company

**State the organization to which you provided funding**

American Clean Power Association (ACPA)

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

25,000

**Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate**

GM joined ACPA in 2022 and is also a board member. The organization is focused on removing barriers to clean energy and accelerating the growth of clean energy.

**Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

---

**Type of organization**

Non-Governmental Organization (NGO) or charitable organization

**State the organization to which you provided funding**

RE100 / The Climate Group

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

15,000

**Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate**

RE100 helps drive energy policy changes needed to be realized in order for us to meet our RE100 goals. This includes country specific efforts.

**Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

---

**Type of organization**

Non-Governmental Organization (NGO) or charitable organization

**State the organization to which you provided funding**

Renewable Thermal Collaborative

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

25,000

**Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate**

A global group of companies, governments, and institutions committed to scaling up renewable heating and cooling to support cutting carbon emissions. The coalition includes organizations on both the buy-side and supply-side of renewable thermal energy. Their technology focus includes RNG, biomass, green hydrogen, solar thermal, electrification, and thermal storage with federally focused policy work. Working groups include electrification, hydrogen, and policy.

**Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

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**Type of organization**

Non-Governmental Organization (NGO) or charitable organization

**State the organization to which you provided funding**

Michigan Energy Innovation Business Council (MI EIBC)

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

500

**Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate**

Michigan Energy Innovation Business Council's mission is to grow Michigan's advanced energy economy by fostering opportunities for innovation and business growth and offering a unified voice in creating a business-friendly environment for the advanced energy industry in Michigan.

**Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

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**Type of organization**

University or other educational institution

**State the organization to which you provided funding**

Clean Energy Sourcing Research Initiative (CESRI) through Carnegie Mellon University's Public Policy Department

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

5,000

**Describe the aim of this funding and how it could influence policy, law or regulation that may impact the climate**

Our partnership with Carnegie Mellon University's Policy Institute is helping us with advocacy for an electricity market in China that provides access to low-cost renewable energy. This is critical to meet our global RE100 commitment.

**Have you evaluated whether this funding is aligned with the goals of the Paris Agreement?**

Yes, we have evaluated, and it is aligned

## C12.4

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

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**Publication**

In mainstream reports, incorporating the TCFD recommendations

**Status**

Complete

**Attach the document**

 GM\_2021\_SR.pdf

**Page/Section reference**

GM's 2021 ESG report includes 55 references to Climate Change, here are some references - Page/Section:10/2, 13/last, 14/4, 15/1-2, 17/last, 18/1, as well the TCFD section is on pages 195-222.

**Content elements**

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

**Comment**

Our ESG report for 2021 was kicked off with a statement from our Chair and CEO: Decarbonizing our business is the right thing to do. Last year, amid the pandemic, we made a strategic decision to accelerate our zero-emissions future by investing more than \$35 billion on EVs and AVs through 2025. In addition, we plan to achieve sales of 40% to 50% of annual U.S. volumes of EVs by 2030. This is how we will bring everybody in on the all-electric future: EVs that are fun to drive for every lifestyle and price point. I am encouraged by how many other companies share our goal of creating a better future. Yet, it's just as important to recognize that how we get there matters. Once-in-a-century technology transformations like these often leave people behind. At GM, the transition will be equitable and inclusive, with our longstanding leadership in fostering diversity.

## C15. Biodiversity

### C15.1

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

	<b>Board-level oversight and/or executive management-level responsibility for biodiversity-related issues</b>	<b>Description of oversight and objectives relating to biodiversity</b>
Row 1	Yes, executive management-level responsibility	Sustainability is overseen by the Board. GM's sustainability strategy is led by senior leaders throughout the organization. Our chief sustainability officer is the enterprise-wide leader of sustainability and directs initiatives through the Office of Sustainability, which has been strategically designed to ensure accountability for key sustainability targets and initiatives at the highest levels of the company; nurture a culture of sustainability across the organization; track and measure progress through

	<p>transparent disclosure; and engage with both internal and external stakeholders on relevant matters. The Office of Sustainability leaders are charged with innovating and advocating as well as supporting social responsibility and transparent governance practices.</p> <p>The Office of Sustainability was formed to advance a cross-collaborative approach aiming towards our Public Sustainability Goals. The 4 goals (Water Intensity Reduction, Sustainable Materials, Sustainable Packaging and Zero Waste), contain internal strategies that protect, restore, conserve and sustainably manage ecosystems.</p> <p>Within these goals are internal objectives related to biodiversity, such as advancing GM's Wildlife Habitat program, collaborating with our supply-chain to source more sustainable materials reducing land impact, advancing elements of circular economy through a Zero Waste program, in which will reduce the dependency on natural resources.</p>
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## C15.2

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

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Initiatives endorsed
Row 1	Yes, we have endorsed initiatives only	Other, please specify Wildlife Habitat protection program certified through the Wildlife Habitat Council. Global Platform for Sustainable Natural Rubber, which supports models for a more sustainable rubber supply chain, reducing the pressure on tropical forests.

## C15.3

**(C15.3) Does your organization assess the impact of its value chain on biodiversity?**

	Does your organization assess the impact of its value chain on biodiversity?
Row 1	No, but we plan to assess biodiversity-related impacts within the next two years

## C15.4

**(C15.4) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?**



	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity-related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management Education & awareness


## C15.5


**(C15.5) Does your organization use biodiversity indicators to monitor performance across its activities?**

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	Yes, we use indicators	Other, please specify GM uses the indicators within the wildlife certification process from the Wildlife Habitat Council. Some indicators are Scope/Area, Habitat Creation/Expansion, Management, Monitoring, number of participants, Species Management, and others.

## C15.6

**(C15.6) Have you published information about your organization’s response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).**

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Details on biodiversity indicators Biodiversity strategy	Pg 11 Biodiversity & Ecosystem Health Pg 38 Nature Conservancy Programs  1

 1GM\_2021\_SR.pdf

## C16. Signoff

### C-FI

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

### C16.1

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

	Job title	Corresponding job category
Row 1	Vice President of Sustainable Workplaces and Chief Sustainability Officer of General Motors Company	Chief Sustainability Officer (CSO)

## SC. Supply chain module

### SC0.0

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

General Motors Company (“GM”) is a global company committed to pioneering the innovations that move and connect people to what matters. We design, build and sell trucks, crossovers, cars and automobile parts and provide software-enabled services and subscriptions worldwide. Our automotive operations meet the demands of our customers through our automotive segments: GM North America (GMNA) and GM International (GMI) with vehicles developed, manufactured and/or marketed under the Buick, Cadillac, Chevrolet and GMC brands. We also have equity ownership stakes in entities that meet the demands of customers in other countries, primarily in China, with vehicles developed, manufactured and/ or marketed under the Baojun, Buick, Cadillac, Chevrolet and Wuling brands. Cruise is our global segment responsible for the development and commercialization of autonomous vehicle technology.

With global headquarters in Detroit, Michigan, GM employs ~146,000 people. At December 31, 2021, we had over 100 locations in the U.S. (excluding Cruise, our automotive financing operations and dealerships), which are primarily for manufacturing, assembly, distribution, warehousing, engineering and testing. We have manufacturing, assembly, distribution, office or warehousing operations in 29 countries, including equity interests in associated companies, which perform manufacturing, assembly or distribution operations. The major facilities outside

the U.S., which are principally vehicle manufacturing and assembly operations, are located in Brazil, Canada, China, Mexico and South Korea.

GM's sustainability strategy is led at the enterprise level to ensure a holistic approach across the company. Our strategy is led by senior leaders throughout the organization. Our chief sustainability officer is the enterprise-wide leader of sustainability and directs initiatives through the Office of Sustainability (SO). The SO has been strategically designed to ensure accountability for key sustainability targets and initiatives at the highest levels of the company; nurture a culture of sustainability across the organization; track and measure progress through transparent disclosure; and engage with stakeholders on relevant matters.

GM is proud of its long-standing commitment to protect human health and the environment. We continually assess the environmental impacts of our activities, products, and services in accordance with our Global Environmental Policy and are committed to reducing or eliminating these impacts through the establishment of appropriate objectives and targets. GM's Guiding Environmental Commitments are the foundation of this policy and have been in place for more than 25 years. These Commitments now serve as a guide for all GM employees and partners worldwide. They encourage environmental consciousness in both daily conduct and in the planning of future products and programs, and support and embrace GM's purpose, values, and our vision. For example, our commitments include:

- Preventing deforestation, conserving water and taking actions that preserve water quality, caring for natural resources in and around our facilities and the communities where we operate.
- Using renewable energy at our facilities and sites globally and advocating for policies that promote renewable energy use and demand.
- Recognizing that the transportation sector is a leading contributor to global greenhouse gas emissions and our obligation to reduce them in the transition to a low carbon future. We have committed to an all-electric future with a core focus on zero emission battery EVs as part of our long-term strategy to reduce petroleum consumption and greenhouse gas (GHG) emissions.

GM is a signatory to the United Nations Global Compact, which endorses a framework of principles in the areas of human rights, labor, the environment, and anti-corruption. In 2021, GM signed the UN Global Compact - CEO Water Mandate to support global water security. In addition, GM's commitment supports the Global Compact's ten principles and the company's intent to maintain the principles and to evaluate related global best practices that may be applicable to GM.

GM is reporting GHG emissions to CDP using the GHG Protocol, unless noted otherwise, for operations (Scope 1 & 2) where we have operational control for GHG emissions, owned or leased facilities, and joint ventures as applicable, as well as for indirect emissions (Scope 3) from upstream and downstream activities. We will be reporting Scope 1 and 2 emissions by North America, South America, and International (rest of world), and company wide for Scope 3.

Unless otherwise stated, GM Financial, our financing services provider, and Cruise, our autonomous vehicle subsidiary, are not included in the report. Dollar amounts presented within this report are stated in U.S. dollars.

## SC0.1

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

	Annual Revenue
Row 1	113,584,000,000

## SC1.1

**(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.**

### Requesting member

Grupo Bimbo, S.A.B. de C.V.

### Scope of emissions

Scope 1

### Allocation level

Company wide

### Allocation level detail

### Emissions in metric tonnes of CO<sub>2</sub>e

38.44

### Uncertainty (±%)

5

### Major sources of emissions

Combustion of natural gas and landfill gas for process and facility heating, mobile fuel for onsite vehicles, HFC emissions from chillers and refrigeration, generation of electricity from renewable landfill gas to power assembly plants. Process operations include painting, clean room air conditioning, ovens, and casting melting, and furnaces.

### Verified

No

### Allocation method

Allocation based on the volume of products purchased

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

207

### Unit for market value or quantity of goods/services supplied

Other, please specify  
total vehicles purchased

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

- i) All direct energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include stationary fuel usage, HFC fugitive, and mobile fuels.
- ii) An average emission factor was used for each vehicle.

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**Requesting member**

Grupo Bimbo, S.A.B. de C.V.

**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

33.94

**Uncertainty (±%)**

5

**Major sources of emissions**

Purchased electricity, purchased steam, and hot water for painting operations. Process includes clean room, and ovens. Casting operations includes furnaces, manufacturing and non-manufacturing (offices), and lighting and ventilation for all facilities.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

207

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

- (i) All indirect energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include electricity, purchased steam, purchased chilled water, and purchased hot water.
- ii) The major limitation in allocation has been reduced this year using vehicle model information to pinpoint the manufacturing facility for scope 2.

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**Requesting member**

Grupo Bimbo, S.A.B. de C.V.

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

18,448.84

**Uncertainty (±%)**

5

**Major sources of emissions**

All 15 categories of Scope 3 included with major sources as follows: 1) Use of sold product - vehicle use for 15,000 km per year for 10 years. 2) Life cycle emissions of purchased goods and services. 3) Life cycle emissions of Capital goods. 4) Transportation of parts to plants and vehicles to dealers, along with other 11 categories.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

207

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

i) Sources identified – 1) Vehicle emissions from our customers use of products is estimated from emissions intensity times distances driven over the lifetime of the vehicle - 150,000 km or 15,000 km for 10 years. 2) Scope 3 purchased goods and services and Capital Goods have been estimated from a life-cycle analysis using economic / environmental input/output methodology, calibrated with GM CDP Supply Chain responses from tier 1 suppliers. 3) Transportation GHG emissions have been estimated using US EPA SmartWay data from our trucking carriers and intensity factors for other modes of transportation globally. ii) The major limitation to the process is the indirect measurements in the life-cycle assessment that uses economic factors to determine GHG emissions for up to six tiers of suppliers. iii) The assumptions made for vehicle use emissions are a lifetime vehicle use of 10 years and distances driven each year of 15,000 km. Assumptions made for the life-cycle estimate of GHG from purchased goods and services for our supply chain is that the emissions follow the trends of information reported in the USEPA Environmental Extended Input Output database (USEEIO v2.0) that was used to calculate supply chain life-cycle GHG emissions (category 1&2).

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**Requesting member**

L'Oréal

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

5.25

**Uncertainty (±%)**

5

**Major sources of emissions**

Combustion of natural gas and landfill gas for process and facility heating, mobile fuel for onsite vehicles, HFC emissions from chillers and refrigeration, generation of electricity from renewable landfill gas to power assembly plants. Process operations include painting, clean room air conditioning, ovens, and casting melting, and furnaces.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

29

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

- i) All direct energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include stationary fuel usage, HFC fugitive, and mobile fuels.
- ii) An average emission factor was used for each vehicle.

---

**Requesting member**

L'Oréal

**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

11.71

**Uncertainty (±%)**

5

**Major sources of emissions**

Purchased electricity, purchased steam, and hot water for painting operations. Process includes clean room, and ovens. Casting operations includes furnaces, manufacturing and non-manufacturing (offices), and lighting and ventilation for all facilities.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

29

**Unit for market value or quantity of goods/services supplied**

Other, please specify



total vehicles purchased

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

- (i) All indirect energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include electricity, purchased steam, purchased chilled water, and purchased hot water.
- ii) The major limitation in allocation has been reduced this year using vehicle model information to pinpoint the manufacturing facility for scope 2.

---

**Requesting member**

L'Oréal

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

1,529.14

**Uncertainty (±%)**

5

**Major sources of emissions**

All 15 categories of Scope 3 included with major sources as follows: 1) Use of sold product - vehicle use for 15,000 km per year for 10 years. 2) Life cycle emissions of purchased goods and services. 3) Life cycle emissions of Capital goods. 4) Transportation of parts to plants and vehicles to dealers, along with other 11 categories.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

29

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

i) Sources identified – 1) Vehicle emissions from our customers use of products is estimated from emissions intensity times distances driven over the lifetime of the vehicle - 150,000 km or 15,000 km for 10 years. 2) Scope 3 purchased goods and services and Capital Goods have been estimated from a life-cycle analysis using economic / environmental input/output methodology, calibrated with GM CDP Supply Chain responses from tier 1 suppliers. 3) Transportation GHG emissions have been estimated using US EPA SmartWay data from our trucking carriers and intensity factors for other modes of transportation globally. ii) The major limitation to the process is the indirect measurements in the life-cycle assessment that uses economic factors to determine GHG emissions for up to six tiers of suppliers. iii) The assumptions made for vehicle use emissions are a lifetime vehicle use of 10 years and distances driven each year of 15,000 km. Assumptions made for the life-cycle estimate of GHG from purchased goods and services for our supply chain is that the emissions follow the trends of information reported in the USEPA Environmental Extended Input Output database (USEEIO v2.0) that was used to calculate supply chain life-cycle GHG emissions (category 1&2).

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**Requesting member**

MetLife, Inc.

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

3.69

**Uncertainty (±%)**

5

**Major sources of emissions**

Combustion of natural gas and landfill gas for process and facility heating, mobile fuel for onsite vehicles, HFC emissions from chillers and refrigeration, generation of electricity from renewable landfill gas to power assembly plants. Process operations include painting, clean room air conditioning, ovens, and casting melting, and furnaces.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

28

**Unit for market value or quantity of goods/services supplied**

Other, please specify

total vehicles purchased

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

- i) All direct energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include stationary fuel usage, HFC fugitive, and mobile fuels.
- ii) An average emission factor was used for each vehicle.

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**Requesting member**

MetLife, Inc.

**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

4.98

**Uncertainty (±%)**

5

**Major sources of emissions**

Purchased electricity, purchased steam, and hot water for painting operations. Process includes clean room, and ovens. Casting operations includes furnaces, manufacturing and non-manufacturing (offices), and lighting and ventilation for all facilities.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

28

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

- (i) All indirect energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include electricity, purchased steam, purchased chilled water, and purchased hot water.
- ii) The major limitation in allocation has been reduced this year using vehicle model information to pinpoint the manufacturing facility for scope 2.

---

**Requesting member**

MetLife, Inc.

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

2,618.84

**Uncertainty (±%)**

5

**Major sources of emissions**

All 15 categories of Scope 3 included with major sources as follows: 1) Use of sold product - vehicle use for 15,000 km per year for 10 years. 2) Life cycle emissions of purchased goods and services. 3) Life cycle emissions of Capital goods. 4) Transportation of parts to plants and vehicles to dealers, along with other 11 categories.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

28

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

i) Sources identified – 1) Vehicle emissions from our customers use of products is estimated from emissions intensity times distances driven over the lifetime of the vehicle - 150,000 km or 15,000 km for 10 years. 2) Scope 3 purchased goods and services and Capital Goods have been estimated from a life-cycle analysis using economic / environmental input/output methodology, calibrated with GM CDP Supply Chain responses from tier 1 suppliers. 3) Transportation GHG emissions have been estimated using US EPA SmartWay data from our trucking carriers and intensity factors for other modes of transportation globally. ii) The major limitation to the process is the indirect measurements in the life-cycle assessment that uses economic factors to determine GHG emissions for up to six tiers of suppliers. iii) The assumptions made for vehicle use emissions are a lifetime vehicle use of 10 years and distances driven each year of 15,000 km. Assumptions made for the life-cycle estimate of GHG from purchased goods and services for our supply chain is that the emissions follow the trends of information reported in the USEPA Environmental Extended Input Output database (USEEIO v2.0) that was used to calculate supply chain life-cycle GHG emissions (category 1&2).

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**Requesting member**

Movida Participacoes SA

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO2e**

481.32

**Uncertainty (±%)**

5

**Major sources of emissions**

Combustion of natural gas and landfill gas for process and facility heating, mobile fuel for onsite vehicles, HFC emissions from chillers and refrigeration, generation of electricity from renewable landfill gas to power assembly plants. Process operations include painting, clean room air conditioning, ovens, and casting melting, and furnaces.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

5,281

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

- i) All direct energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include stationary fuel usage, HFC fugitive, and mobile fuels.
- ii) An average emission factor was used for each vehicle.

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**Requesting member**

Movida Participacoes SA

**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

613.48

**Uncertainty (±%)**

5

**Major sources of emissions**

Purchased electricity, purchased steam, and hot water for painting operations. Process includes clean room, and ovens. Casting operations includes furnaces, manufacturing and non-manufacturing (offices), and lighting and ventilation for all facilities.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

**Market value or quantity of goods/services supplied to the requesting member**  
5,281

**Unit for market value or quantity of goods/services supplied**  
Other, please specify  
total vehicles purchased

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

- (i) All indirect energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include electricity, purchased steam, purchased chilled water, and purchased hot water.
- ii) The major limitation in allocation has been reduced this year using vehicle model information to pinpoint the manufacturing facility for scope 2.

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**Requesting member**  
Movida Participacoes SA

**Scope of emissions**  
Scope 3

**Allocation level**  
Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**  
255,575.72

**Uncertainty (±%)**  
5

**Major sources of emissions**  
All 15 categories of Scope 3 included with major sources as follows: 1) Use of sold product - vehicle use for 15,000 km per year for 10 years. 2) Life cycle emissions of purchased goods and services. 3) Life cycle emissions of Capital goods. 4) Transportation of parts to plants and vehicles to dealers, along with other 11 categories.

**Verified**  
No

**Allocation method**  
Allocation based on the volume of products purchased

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

5,281

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

i) Sources identified – 1) Vehicle emissions from our customers use of products is estimated from emissions intensity times distances driven over the lifetime of the vehicle - 150,000 km or 15,000 km for 10 years. 2) Scope 3 purchased goods and services and Capital Goods have been estimated from a life-cycle analysis using economic / environmental input/output methodology, calibrated with GM CDP Supply Chain responses from tier 1 suppliers. 3) Transportation GHG emissions have been estimated using US EPA SmartWay data from our trucking carriers and intensity factors for other modes of transportation globally. ii) The major limitation to the process is the indirect measurements in the life-cycle assessment that uses economic factors to determine GHG emissions for up to six tiers of suppliers. iii) The assumptions made for vehicle use emissions are a lifetime vehicle use of 10 years and distances driven each year of 15,000 km. Assumptions made for the life-cycle estimate of GHG from purchased goods and services for our supply chain is that the emissions follow the trends of information reported in the USEPA Environmental Extended Input Output database (USEEIO v2.0) that was used to calculate supply chain life-cycle GHG emissions (category 1&2).

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**Requesting member**

U.S. General Services Administration - OMB ICR #3090-0319

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

1,270.68

**Uncertainty (±%)**

5

**Major sources of emissions**

Combustion of natural gas and landfill gas for process and facility heating, mobile fuel for onsite vehicles, HFC emissions from chillers and refrigeration, generation of



electricity from renewable landfill gas to power assembly plants. Process operations include painting, clean room air conditioning, ovens, and casting melting, and furnaces.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

4,982

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

- i) All direct energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include stationary fuel usage, HFC fugitive, and mobile fuels.
- ii) An average emission factor was used for each vehicle.

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**Requesting member**

U.S. General Services Administration - OMB ICR #3090-0319

**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

1,650.72

**Uncertainty (±%)**

5

**Major sources of emissions**

Purchased electricity, purchased steam, and hot water for painting operations. Process includes clean room, and ovens. Casting operations includes furnaces, manufacturing and non-manufacturing (offices), and lighting and ventilation for all facilities.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

4,982

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

- (i) All indirect energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include electricity, purchased steam, purchased chilled water, and purchased hot water.
- ii) The major limitation in allocation has been reduced this year using vehicle model information to pinpoint the manufacturing facility for scope 2.

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**Requesting member**

U.S. General Services Administration - OMB ICR #3090-0319

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

319,968.39

**Uncertainty (±%)**

5

**Major sources of emissions**

All 15 categories of Scope 3 included with major sources as follows: 1) Use of sold product - vehicle use for 15,000 km per year for 10 years. 2) Life cycle emissions of purchased goods and services. 3) Life cycle emissions of Capital goods. 4) Transportation of parts to plants and vehicles to dealers, along with other 11 categories.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

4,982

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

i) Sources identified – 1) Vehicle emissions from our customers use of products is estimated from emissions intensity times distances driven over the lifetime of the vehicle - 150,000 km or 15,000 km for 10 years. 2) Scope 3 purchased goods and services and Capital Goods have been estimated from a life-cycle analysis using economic / environmental input/output methodology, calibrated with GM CDP Supply Chain responses from tier 1 suppliers. 3) Transportation GHG emissions have been estimated using US EPA SmartWay data from our trucking carriers and intensity factors for other modes of transportation globally. ii) The major limitation to the process is the indirect measurements in the life-cycle assessment that uses economic factors to determine GHG emissions for up to six tiers of suppliers. iii) The assumptions made for vehicle use emissions are a lifetime vehicle use of 10 years and distances driven each year of 15,000 km. Assumptions made for the life-cycle estimate of GHG from purchased goods and services for our supply chain is that the emissions follow the trends of information reported in the USEPA Environmental Extended Input Output database (USEEIO v2.0) that was used to calculate supply chain life-cycle GHG emissions (category 1&2).

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**Requesting member**

UNIDAS

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

838.8

**Uncertainty (±%)**

5

**Major sources of emissions**

Combustion of natural gas and landfill gas for process and facility heating, mobile fuel for onsite vehicles, HFC emissions from chillers and refrigeration, generation of electricity from renewable landfill gas to power assembly plants. Process operations include painting, clean room air conditioning, ovens, and casting melting, and furnaces.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

8,308

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

- i) All direct energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include stationary fuel usage, HFC fugitive, and mobile fuels.
- ii) An average emission factor was used for each vehicle.

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**Requesting member**

UNIDAS

**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

1,102.11

**Uncertainty (±%)**

5

**Major sources of emissions**

Purchased electricity, purchased steam, and hot water for painting operations. Process includes clean room, and ovens. Casting operations includes furnaces, manufacturing and non-manufacturing (offices), and lighting and ventilation for all facilities.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

8,308

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

- (i) All indirect energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include electricity, purchased steam, purchased chilled water, and purchased hot water.
- ii) The major limitation in allocation has been reduced this year using vehicle model information to pinpoint the manufacturing facility for scope 2.

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**Requesting member**

UNIDAS

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

418,874.87

**Uncertainty (±%)**

5

**Major sources of emissions**

All 15 categories of Scope 3 included with major sources as follows: 1) Use of sold product - vehicle use for 15,000 km per year for 10 years. 2) Life cycle emissions of

purchased goods and services. 3) Life cycle emissions of Capital goods. 4)  
Transportation of parts to plants and vehicles to dealers, along with other 11 categories.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

8,308

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

i) Sources identified – 1) Vehicle emissions from our customers use of products is estimated from emissions intensity times distances driven over the lifetime of the vehicle - 150,000 km or 15,000 km for 10 years. 2) Scope 3 purchased goods and services and Capital Goods have been estimated from a life-cycle analysis using economic / environmental input/output methodology, calibrated with GM CDP Supply Chain responses from tier 1 suppliers. 3) Transportation GHG emissions have been estimated using US EPA SmartWay data from our trucking carriers and intensity factors for other modes of transportation globally. ii) The major limitation to the process is the indirect measurements in the life-cycle assessment that uses economic factors to determine GHG emissions for up to six tiers of suppliers. iii) The assumptions made for vehicle use emissions are a lifetime vehicle use of 10 years and distances driven each year of 15,000 km. Assumptions made for the life-cycle estimate of GHG from purchased goods and services for our supply chain is that the emissions follow the trends of information reported in the USEPA Environmental Extended Input Output database (USEEIO v2.0) that was used to calculate supply chain life-cycle GHG emissions (category 1&2).

---

**Requesting member**

Los Angeles Department of Water and Power

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

0

**Uncertainty (±%)**

**Major sources of emissions**

Combustion of natural gas and landfill gas for process and facility heating, mobile fuel for onsite vehicles, HFC emissions from chillers and refrigeration, generation of electricity from renewable landfill gas to power assembly plants. Process operations include painting, clean room air conditioning, ovens, and casting melting, and furnaces.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

0

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

Per GM records, no vehicles purchased in 2021.

- i) All direct energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include stationary fuel usage, HFC fugitive, and mobile fuels.
- ii) An average emission factor was used for each vehicle.

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**Requesting member**

Los Angeles Department of Water and Power

**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**

0

**Uncertainty ( $\pm\%$ )**

**Major sources of emissions**

Purchased electricity, purchased steam, and hot water for painting operations. Process includes clean room, and ovens. Casting operations includes furnaces, manufacturing and non-manufacturing (offices), and lighting and ventilation for all facilities.

**Verified**

No

**Allocation method**

Allocation based on the volume of products purchased

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

0

**Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

Per GM records, no vehicles purchased in 2021.

- (i) All indirect energy sources tracked for manufacturing and non-manufacturing operations with a global utility database operated by a third-party using invoices and meter data to include electricity, purchased steam, purchased chilled water, and purchased hot water.
- ii) The major limitation in allocation has been reduced this year using vehicle model information to pinpoint the manufacturing facility for scope 2.

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**Requesting member**

Los Angeles Department of Water and Power

**Scope of emissions**

Scope 3

**Allocation level**

Company wide

**Allocation level detail**

**Emissions in metric tonnes of CO<sub>2</sub>e**



0

### **Uncertainty (±%)**

### **Major sources of emissions**

All 15 categories of Scope 3 included with major sources as follows: 1) Use of sold product - vehicle use for 15,000 km per year for 10 years. 2) Life cycle emissions of purchased goods and services. 3) Life cycle emissions of Capital goods. 4) Transportation of parts to plants and vehicles to dealers, along with other 11 categories.

### **Verified**

No

### **Allocation method**

Allocation based on the volume of products purchased

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

0

### **Unit for market value or quantity of goods/services supplied**

Other, please specify  
total vehicles purchased

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

Per GM records, no vehicles purchased in 2021.

i) Sources identified – 1) Vehicle emissions from our customers use of products is estimated from emissions intensity times distances driven over the lifetime of the vehicle - 150,000 km or 15,000 km for 10 years. 2) Scope 3 purchased goods and services and Capital Goods have been estimated from a life-cycle analysis using economic / environmental input/output methodology, calibrated with GM CDP Supply Chain responses from tier 1 suppliers. 3) Transportation GHG emissions have been estimated using US EPA SmartWay data from our trucking carriers and intensity factors for other modes of transportation globally. ii) The major limitation to the process is the indirect measurements in the life-cycle assessment that uses economic factors to determine GHG emissions for up to six tiers of suppliers. iii) The assumptions made for vehicle use emissions are a lifetime vehicle use of 10 years and distances driven each year of 15,000 km. Assumptions made for the life-cycle estimate of GHG from purchased goods and services for our supply chain is that the emissions follow the trends of information reported in the USEPA Environmental Extended Input Output database (USEEIO v2.0) that was used to calculate supply chain life-cycle GHG emissions (category 1&2).

## SC1.2

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

All relevant GHG emissions for Scope 1 & 2 used direct information on energy use and published IPCC or USEPA e-grid emission factors based on GHG Protocol to calculate GHG emissions. Scope 3 GHG emissions that used published information for calculations are based on these references:

1. Use of Sold Products - where available, government protocols were used to calculate carbon intensities that are extrapolated to other countries based on similar vehicle models.
2. Purchased Goods and Services and Capital Goods categories - life-cycle analysis based on USEPA Environmental Extended Input Output database (USEEIO v2) for environmental factors related to economic input / output to determine GHG based on industry specific averages by manufacturing category.
3. Fuel and energy not included in Scope 1&2 - emission factors from Australia's guidance from the National Greenhouse Accounts factors 2013 (Tables 37 & 41) for gas and for electric based on EIA data for fugitive electricity losses.
4. Upstream and downstream transportation - GM's emissions from logistic operations from sea and air were estimated using CDP Analytics. The majority, over the road and rail emissions were calculated using US EPA's SmartWay detailed analysis from our partnership based on supplier (carrier) direct data.
5. All other scope 3 calculations were performed using GHG Protocol methods.

## SC1.3

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

Allocation challenges	Please explain what would help you overcome these challenges
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	GM measures GHG emissions at a facility level and tracks which models of vehicles are manufactured at each facility. Knowing which vehicles are purchased and from which facility results in more granular estimates of GHG Scope 1 and 2 emissions. For example, in 2021, sales data was mapped to vehicle model production location to use plant specific carbon intensity and vehicle emissions intensity.

## SC1.4

**(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?**

Yes

### SC1.4a

**(SC1.4a) Describe how you plan to develop your capabilities.**

GM will evaluate increasing the accuracy of reporting by allocating within a facility by model. As we currently measure scope 1&2 at a facility level, while some facilities produce multiple models, allocating at model level will increase the reporting accuracy.

## SC2.1

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

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### Requesting member

Grupo Bimbo, S.A.B. de C.V.

### Group type of project

Other, please specify  
Collaboration to reduce GHG emissions

### Type of project

Other, please specify  
Collaboration to reduce GHG emissions

### Emissions targeted

Actions that would reduce both our own and our customers' emissions

### Estimated timeframe for carbon reductions to be realized

1-3 years

### Estimated lifetime CO<sub>2</sub>e savings

1,552.16

### Estimated payback

0-1 year

### Details of proposal

GM's Fleet and Commercial Operations team encourages customers to consider fuel economy when deciding on vehicle purchases. An example of assistance offered is available at <http://www.chevrolet.com/fuel-economy> displaying a number of low carbon products. Additionally, GM understands that driver behaviors can improve fuel economy and reduce carbon emissions. Driving tips are available at <http://media.gm.com/product/public/us/en/FuelEfficiency/tips.html>, including 12 tips - tune up, properly inflated tires, idling, speed, and other maintenance tips to reduce carbon emissions. Studies suggest that up to 20% improvement are possible with driver behavior improvement. The estimated lifetime savings are based on 10% improvement in fuel economy and GHG emission reduction for 10 years. In addition, we plan to achieve sales of 40% to 50% of annual U.S. volumes of EVs by 2030. This is how we will bring everybody in on the all-electric future. We are going after every aspect of what it takes to put everyone in an EV because we need millions of EVs on the road to make

a meaningful impact toward building a zero-emissions future.  
<https://www.gm.com/commitments/electrification>.

GM's Fleet and Commercial Operations is a big key to achieving this goal. Our fleet team is focused on highlighting the benefits of switching to an electric fleet. Our Solutions Summit gives customers the opportunity to drive and experience electric vehicles firsthand. One of the most recent announcements is a new fleet charging service designed to accelerate the adoption of fleet electrification (<https://plants.gm.com/media/us/en/gm/ev.detail.html/content/Pages/news/us/en/2021/jul/0715-ultium.html>). The comprehensive solution will help new and existing fleet customers identify providers, tools and solutions required to plan, finance, deploy and operate charging infrastructure in fleet yards and depots.

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**Requesting member**

L'Oréal

**Group type of project**

Other, please specify  
Collaboration to reduce GHG emissions

**Type of project**

Other, please specify  
Collaboration to reduce GHG emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO<sub>2</sub>e savings**

104.72

**Estimated payback**

0-1 year

**Details of proposal**

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**Requesting member**

MetLife, Inc.

**Group type of project**

Other, please specify  
Collaboration to reduce GHG emissions

**Type of project**

Other, please specify  
Collaboration to reduce GHG emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO2e savings**

222.29

**Estimated payback**

0-1 year

**Details of proposal**

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**Requesting member**

Movida Participacoes SA

**Group type of project**

Other, please specify

Collaboration to reduce GHG emissions

**Type of project**

Other, please specify

Collaboration to reduce GHG emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO2e savings**

18,089.68

**Estimated payback**

0-1 year

**Details of proposal**

GM's Fleet and Commercial Operations team encourages customers to consider fuel economy when deciding on vehicle purchases. An example of assistance offered is available at <http://www.chevrolet.com/fuel-economy> displaying a number of low carbon products. Additionally, GM understands that driver behaviors can improve fuel economy and reduce carbon emissions. Driving tips are available at <http://media.gm.com/product/public/us/en/FuelEfficiency/tips.html>, including 12 tips - tune up, properly inflated tires, idling, speed, and other maintenance tips to reduce carbon emissions. Studies suggest that up to 20% improvement are possible with driver behavior improvement. The estimated lifetime savings are based on 10% improvement in fuel economy and GHG emission reduction for 10 years. In addition, we plan to achieve sales of 40% to 50% of annual U.S. volumes of EVs by 2030. This is how we will bring everybody in on the all-electric future. We are going after every aspect of what it takes to put everyone in an EV because we need millions of EVs on the road to make a meaningful impact toward building a zero-emissions future. <https://www.gm.com/commitments/electrification>.

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**Requesting member**

U.S. General Services Administration - OMB ICR #3090-0319

**Group type of project**

Other, please specify

Collaboration to reduce GHG emissions

**Type of project**

Other, please specify

Collaboration to reduce GHG emissions

**Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO<sub>2</sub>e savings**

23,738.12

**Estimated payback**

0-1 year

### **Details of proposal**

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### **Requesting member**

UNIDAS

### **Group type of project**

Other, please specify  
Collaboration to reduce GHG emissions

### **Type of project**

Other, please specify  
Collaboration to reduce GHG emissions

### **Emissions targeted**

Actions that would reduce both our own and our customers' emissions

### **Estimated timeframe for carbon reductions to be realized**

1-3 years



### **Estimated lifetime CO2e savings**

301,390.95

### **Estimated payback**

0-1 year

### **Details of proposal**

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### **Requesting member**

Los Angeles Department of Water and Power

### **Group type of project**

Other, please specify  
Collaboration to reduce GHG emissions

### **Type of project**

Other, please specify  
Collaboration to reduce GHG emissions

### **Emissions targeted**

Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**

1-3 years

**Estimated lifetime CO2e savings**

**Estimated payback**

0-1 year

**Details of proposal**

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## SC2.2

**(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?**

Yes

## SC2.2a

**(SC2.2a) Specify the requesting member(s) that have driven organizational-level emissions reduction initiatives, and provide information on the initiatives.**

## SC4.1

**(SC4.1) Are you providing product level data for your organization's goods or services?**

No, I am not providing data

## Submit your response

**In which language are you submitting your response?**

English

**Please confirm how your response should be handled by CDP**

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

**Please confirm below**

I have read and accept the applicable Terms