



CUMMINS RESPONDS TO CLIMATE CHANGE

TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURE

INTRODUCTION

Cummins has a long history as an environmental leader in the commercial power industry, particularly in meeting and exceeding emissions requirements for the company's products. From the early days of the environmental movement, former Cummins leaders J. Irwin Miller and Henry Schacht endorsed government regulation as the "right thing to do." In the 1960s, taking an industry leading position, Cummins acknowledged that its products, primarily diesel engines and related components then, have an environmental impact. In the 1970s, the company worked closely with United States Environmental Protection Agency (EPA), the California Air Resources Board (CARB) and other key regulatory agencies to ensure the promulgation of sensible and effective environmental regulations for its industry.

More than 20 years ago (1998), Cummins made the decision to embrace tougher environmental standards and to use the company's technological expertise and innovation to drive its business forward and improve the communities in which Cummins operates. These early efforts laid the foundation for the company's current work and commitment to address the environmental impacts of its operations and products.

Cummins finds opportunities in challenges. With the global challenge of combating climate change, the company sees opportunities to demonstrate its leadership and innovation and be an active participant in finding solutions that benefit all of Cummins' stakeholders – employees, customers, investors and communities around the world.

TWO DECADES OF CLIMATE LEADERSHIP

CLIMATE MILESTONES THROUGH PLANET 2050 LAUNCH

Cummins has been a leader on addressing climate change for nearly two decades.

Learn more by clicking on each link

See full climate action list [here](#).

Cummins is first U.S. heavy-duty engine manufacturer to certify to new 2.5g/bhp hour NOx +NMHC standards ahead of EPA pull ahead requirements.

Joins EPA's Climate Leaders Program.

Begins reporting GHG inventory and emissions.

Announces plan to develop climate change policy.

Charters Climate Change Workgroup.

6.7-liter turbodiesel engine achieves EPA's 2010 NOx standards three years earlier than required.

Forms Energy Champions program to search for facility reductions.

Cummins creates Fuel Efficiency Task Force.

Achieves 28% reduction goal in GHG for facilities.

Establishes second GHG goal for facilities.

CEO Tim Solso outlines support for national GHG emissions and fuel efficiency programs.

Committee forms to lead environmental action at Cummins beyond compliance.

Bureau Veritas audits the company's GHG inventory.

Completed environmental hot spot analysis.

Joins DOE's Better Buildings, Better Plants Challenge committing to 25% energy efficiency intensity reduction.

Unveils first comprehensive sustainability plan with five primary goals for waste, water, energy, and GHG emissions for facilities.

Performs life cycle analysis on ISX15L engine.

Certifies three sites to ISO 50001 energy management standard.

Introduces ISL G Near Zero NOx natural gas engine.

CDP leader for climate change disclosures.

Reports collective lifetime emissions of all products sold in 2014.

Exceeds energy and GHG reduction goals.

Pledges 90% of facilities carbon footprint will meet ISO 50001 by 2020.

Approves third energy goal in 10 years.

Supports EPA's second phase of national fuel efficiency and GHG emissions regulations.

Signs UN Global Compact.

Joins ICCT's soot-free bus initiative.

Tom Linebarger is one of 30 CEOs to sign pledge for climate action.

Company commits to setting science-based targets to reduce GHGs.

Cummins unveils all electric powertrain.

Signs VPPA to help Indiana wind farm expand.

Announces support for the launch of EPA CTI.

Cummins holds first Climate Action 100+ shareholder meeting.

Cummins closes on acquisition of Hydrogenics.

Renames Electrified Power segment "New Power" to pursue low carbon platforms.

Cummins announces PLANET 2050 strategy aiming for carbon neutrality by 2050.



Recommended Disclosure For TCFD Framework	Alignment to 2020 CDP (Climate Change/Water Security) Questionnaire	Response
Governance		
Disclose the organization's governance around climate-related risks and opportunities		
a) Describe the board's oversight of climate related risks and opportunities.	(C1.1b) – Provide further details on the board's oversight of climate-related issues	<p>The Cummins Board of Directors provides guidance on strategy and budget, and reviews current climate goal progress. The board's Safety, Environment and Technology (SET) committee provides overall guidance and insight on the company's new environmental sustainability plan, PLANET 2050, announced in the fourth quarter of 2019. The SET committee is authorized to assist the board in its oversight of safety policies and review environmental and technological strategies. It also oversees compliance programs, major projects, public policy developments, as well as strategies and positions taken by Cummins regarding safety, environmental and technological matters that significantly impact the company or its products. Members have a range of experience including in the automotive and transportation industry, manufacturing and supply chain, technology, corporate responsibility and regulatory affairs.</p>
b) Describe management's role in assessing and managing climate-related risks and opportunities.	(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).	<p>The CEO at Cummins also serves as Chairman of the Board. He takes an active role in all facets of climate-related issues in strategy, operations (manufacturing, facilities and supply chain), planning, budgets and technology and innovation. The staff of the President (the operating team) and the CEO's staff (executive team) meet monthly and the combined teams meet quarterly.</p> <p>The Environmental Sustainability program office reports up to the Chief Technical Officer (CTO). As such, the CTO is responsible for reviewing sustainability plans and targets, particularly as they relate to technology and innovation. The CTO is also responsible for Cummins' advancement in clean diesel, electrification, and hydrogen fuel cell technology, in addition to meeting all current and emerging regulations for criteria pollutants and greenhouse gases (GHGs). The CTO also is the senior executive with oversight and overall responsibility for the company's environmental sustainability plan. This makes the CTO uniquely qualified to lead climate-related programs for next-generation products, including strategy and planning for low-carbon transitioning, scenario analysis and product-use GHG emissions goals. Progress is reported to the Board of Directors at each board meeting, including climate-related issues and progress.</p> <p>The Action Committee for Environmental Sustainability (ACES), formed in 2012, integrates climate change actions into overall business strategy. The executive sponsor and the head of this group both report up through the Chief Technical Officer. The group is the voice and catalyst for environmental action beyond compliance in the company and provides tools and resources for employees to go further and faster in reaching environmental goals. The group meets monthly and reports progress weekly the CTO through its executive sponsor's weekly meetings with the leader.</p> <p>ACES directs the development of the environmental sustainability planning and reports out on progress in meeting goals. The corporate ACES team has a global focus and includes as its stakeholders nearly all businesses and all functions. The individual stakeholder and goal owner areas of ACES ensures that all aspects of the environment and relevant areas of the business are included, and data is collected and reported that inform decision making and goal setting. In June 2014, Cummins announced after several years of study and analysis led by ACES, it had adopted a comprehensive environmental sustainability plan including public goals timed to 2020. The group then led development of PLANET 2050, including new goals timed to 2030 to succeed those 2020 goals and aspirations timed to 2050. The new goals address climate change, air emissions, and natural resource efficiency as well as the circular economy and sustainability in the communities in which Cummins operates.</p> <p>The company has an Executive Risk Council comprised of the Chief Operating Officer, the Chief Financial Officer, the Chief Administrative Officer, General Counsel, and Vice President-Corporate Strategy that meets five times a year with the leader of Enterprise Risk Management to review and update the company's material enterprise-related risks and mitigation plans. The committee reviews all the risks annually and does an extensive study on risks including climate on a regular basis.</p> <p>The Executive Risk Council and Board of Directors managed climate related risk within Enterprise Risks such as Emissions Compliance, Product Development, and Regulatory Compliance. Other climate change risk was managed as an Emerging Risk and recently upgraded to a regularly reviewed Enterprise Risk by the Executive Risk Council.</p> <p>Finally, climate change was added as a risk factor in Cummins' 2020 Annual Report on Form 10K. And in 2021, the company hired a third-party consultant to evaluate the risk presented by climate change to individual Cummins facilities.</p>

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Strategy		
Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.		
<p>a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.</p>	<p>(C2.1a) – Describe what your organization consider to be short-, medium- and long-term horizons.</p> <p>(C2.3a) – Provide details on risks identified with the potential to have a substantive financial or strategic impact on your business</p>	<p>» Short-term (one to three years): For a large company like Cummins, three years or sooner is a short time horizon, especially for product development. Acquisitions would be included in this timeframe.</p> <p>» Medium-term (three to 10 years): Most of Cummins planning falls into this time horizon, as engine platforms or specific product launches are not short-term.</p> <p>» Long-term (10 to 30 years): Cummins PLANET 2050 environmental sustainability strategy would fall into this category. It contains science-based goals for 2030 and aspirations timed to 2050.</p> <p>TRANSITION RISKS¹</p> <p>Risk type and primary climate-related risk driver: Technology. Transitioning to lower emissions technology.</p> <p>Primary potential negative financial impact: Decreased revenues due to reduced demand for products and services.</p> <p>Description: Technology substitution is the end result of a number of drivers, among them emerging regulation, shifts in consumer preferences, increasingly lower cost of ownership and the customers' own sustainability goals. Cummins is investing in new products and technologies, including electrified powertrains and hydrogen fuel cells, for introduction into existing, new and future markets. Given the early stages of development of some of these new products and technologies, there can be no guarantee of future market acceptance and investment returns with respect to these planned products. The increased adoption of electrified powertrains in some market segments could also result in lower demand for current diesel or natural gas engines and components and, over time, reduce the demand for related parts and service revenues from diesel or natural gas powertrains.</p> <p>Time-horizon: Medium-term. Likelihood: About as likely as not.</p> <p>Risk type and primary climate-related risk driver: Emerging regulation. Mandates on and regulation of existing products and services.</p> <p>Primary potential negative financial impact: Decreased revenues due to reduced demand for products and services.</p> <p>Description: The need to develop new technology to meet emissions regulations could result in substantial additional costs that may be difficult to recover in certain markets. In some cases, Cummins is required to develop new products to comply with new regulations, particularly those relating to air emissions. While the company has met previous deadlines, its ability to comply with other existing and future regulatory standards will be essential for Cummins to maintain its competitive advantage in the engine markets the company serves. The successful development and introduction of new and enhanced products in order to comply with new regulatory requirements are subject to other risks, such as delays in product development, cost over-runs and unanticipated technical and manufacturing difficulties.</p> <p>Time horizon: Medium-term. Likelihood: About as likely as not. Magnitude of impact: Medium-low.</p>

¹ For more information regarding the climate-related risks (including description of the response to the risk and the associated cost), please see Cummins full response to CDP Question (C2.3a) in [2020 Climate Change Response](#).

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Strategy (continued)		
	<p>(C2.4a) – Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.</p>	<p>PHYSICAL RISKS²</p> <p>Risk type and primary climate-related risk driver: Chronic physical changes in precipitation patterns and extreme variability in weather patterns.</p> <p>Primary potential negative financial impact: Decreased revenues due to decreased production capacity.</p> <p>Description: The potential for inadequate or unreliable water supplies in the long-term could lead to operational disruptions, increased water pricing, investment in contingency plans, and increased capital expenditures to manage growth within water use allocation limits. The regions Cummins has identified are China (Hai Ho river basin); India (Krishna river basin); Mexico (Panuco river basin) and Brazil (Paraiba Do Sul river basin).</p> <p>Time horizon: Long-term Likelihood: More likely than not Magnitude of impact: Medium</p> <p>CLIMATE-RELATED OPPORTUNITIES³</p> <p>Opportunity type and primary climate-related opportunity driver: Products and services, development and/or expansion of low emission goods and services.</p> <p>Primary potential financial impact: Increased revenues resulting from increased demand for products and services</p> <p>Description: Cummins has been very public about its intent to introduce electrified products. With battery capacity improving and prices dropping, and with rapid advancements in hydrogen fuel cells, low-carbon electrified powertrains are becoming more affordable and practical for certain types of commercial vehicles, particularly urban bus fleets and pickup and delivery trucks. The company sees electric as a great option for return to base, short-run commercial vehicle routes that do not require large torque. As more parts of the world generate cleaner electricity, Cummins expects electrified powertrains to become an increasingly viable option for other customers, too. The company will provide the entire electrified powertrain solution, as well as some of the most critical components that have the largest impact on performance, quality, and power of the system to deliver the most value to our customers. Cummins is also developing electrolyzers to increase the supply of low carbon, renewable hydrogen.</p> <p>Time horizon: Medium-term. Likelihood: More likely than not. Magnitude of impact: Medium.</p>

² For more information regarding the climate-related risks (including description of the response to the risk and the associated cost), please see Cummins full response to CDP Question (C2.3a) in [2020 Climate Change Response](#).

³ For more information regarding the climate-related opportunities (including description of the strategy to realize the opportunity and associated cost), please see Cummins full response to CDP Question (C2.4a) in [2020 Climate Change Response](#).

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Strategy (continued)		
<p>Opportunity type and primary climate-related opportunity driver: Resource efficiency. Use of more efficient production and distribution processes.</p> <p>Primary potential financial impact: Reduced direct costs.</p> <p>Description: Cummins has a climate-related opportunity in responsible material consumption. Seventy percent of a product’s environmental footprint, meaning water and energy use plus in-use emissions, is determined during the earliest phases of the design process. The earlier the company can incorporate innovative design for the efficient use of fuel and raw materials, the greater its ability to reduce the environmental footprint (energy, water and waste) of Cummins products both in their design and use. This opportunity includes the Cummins functions of remanufacturing, packaging, advanced manufacturing, material science and product design.</p> <p>Time horizon: Medium-term. Likelihood: More likely than not. Magnitude of impact: Medium.</p> <p>Opportunity type and primary climate-related opportunity driver: Resilience. Participation in renewable energy programs and adoption of energy-efficiency measures.</p> <p>Primary potential financial impact: Reduced indirect (operating) costs.</p> <p>Description: Cummins is committed to energy efficiency and renewable energy both for cost savings and resiliency. The company is currently working on its third energy efficiency/greenhouse gas (GHG) reduction goal since 2006. Cummins has completed more than 1,000 energy projects in the last 12 years, now saving the company about \$62 million per year. The company has also committed to having 40 sites certified to the ISO 50001 international energy standard by 2020. Cummins has two public 2020 energy goals: 1) An energy intensity reduction of 32% by 2020 from a baseline of 2010 and 2) An increase in renewable energy opportunities. Through the company’s PLANET 2050 strategy, it has a 2030 goal to reduce absolute GHG emissions from facilities and operations by 50%.</p> <p>Time horizon: Medium-term. Likelihood: Virtually certain. Magnitude of impact: Medium-high.</p> <p>Opportunity type and primary climate-related opportunity driver: Products and services. Development and/or expansion of low emission goods and services.</p> <p>Primary potential financial impact: Increased revenues resulting from increased demand for products and services.</p> <p>Description: In the race to develop more sustainable and renewable energy sources, hydrogen has re-emerged as a potential key solution in the transition to zero-emission mobility. Cummins is rapidly growing its hydrogen capabilities and the company continues to deepen its expertise in fuel cell technologies. Cummins uses fuel cell and hydrogen technologies to power a variety of applications, including transit buses, delivery trucks and passenger trains. Scaling up existing hydrogen technologies will deliver competitive low-carbon solutions across a wide range of applications by 2030 and may even offer competitive low-carbon alternatives to conventional fuels in some segments.</p> <p>Time horizon: Medium-term. Likelihood: More likely than not. Magnitude of impact: Medium.</p>		

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Strategy (continued)		
<p>b) Describe the impact of climate-related risks and opportunities on the organization's business, strategy and financial disclosure.</p>	<p>(C3.1d) – Describe where and how climate-related risks and opportunities have influenced your strategy.</p>	<p>BUSINESS AREAS INFLUENCED BY CLIMATE-RELATED RISKS AND OPPORTUNITIES</p> <p>Products and services: A response to climate change was a major driver in the development of the company's PLANET 2050 environmental sustainability strategy. Cummins sees the strategy as both risk mitigation and new product opportunity. One of the three key priorities of the plan is "doing our part do address climate change and air emissions." Cummins developed a science-based target in 2019 in conjunction with the Science-based Target Initiative, pledging by 2030 to reduce Scope 3 absolute lifetime GHG emissions from newly sold products by 25%. By 2050, the company aspires to power customer success by carbon neutral technologies that address air quality. Cummins is committed to investing in an energy diverse future where customers have a broad portfolio of power options, including new technology diesel, natural gas, electrified power, fuel cell technology and alternative fuels, so they can choose what works best for them. Cummins in 2019 for the first time invested more than \$1 billion in research, technology and engineering expenses as the company enhanced its diesel and natural gas products and brought to market new low-carbon technologies such as hydrogen fuel cells.</p> <p>Supply chain and/or value chain: A response to climate change was a major driver in the development of the company's new PLANET 2050 environmental sustainability strategy. Cummins sees an opportunity to help customers as part of the value chain achieve their own sustainability goals and reduce costs and GHG emissions. One of the three key priorities of the plan is "doing our part do address climate change and air emissions." In this plan, the company will dramatically expand its partnership with customers to reduce Scope 3 GHG emissions from products in the field by 55 million metric tons (cumulative since 2014) by 2030.</p> <p>Investment in research and development: Cummins developed a science-based target in 2019 in conjunction with the Science-based Target Initiative, pledging by 2030 to reduce Scope 3 absolute lifetime GHG emissions from newly sold products by 25%. By 2050, the company aspires to power customer success by carbon-neutral technologies that address air quality. Cummins is committed to investing in an energy diverse future where customers have a broad portfolio of power options, including new technology diesel, natural gas, electrified power, fuel cell technology and alternative fuels – so they can choose what works best for them. Cummins in 2019 for the first time invested more than \$1 billion in research, technology and engineering expenses as the company enhanced its diesel and natural gas products and brought to market new low-carbon technologies such as hydrogen fuel cells.</p> <p>Operations: Cummins started its facility energy efficiency journey in 2006; now PLANET 2050 includes Cummins' fourth energy/GHG reduction target – to reduce absolute greenhouse gas (GHG) emissions from facilities and operations by 50% by 2030. To achieve this goal, Cummins will continue to explore ways to increase renewable energy to reduce the impacts of climate change. One of the company's most ambitious decisions was to enter into a Virtual Power Purchase Agreement (VPPA) to expand a wind farm in northern Indiana, which went online in December 2018. The expansion is adding 75 megawatts, enough to power approximately 20,000 average Indiana homes, to the existing 600-megawatt capacity at the Meadow Lake Wind Farm. Since it went online in mid-December 2018 to the end of 2019, the Meadow Lake VI generated enough renewable energy to offset 15.7% of Cummins global facilities' carbon footprint.</p>

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Strategy (continued)		
	(C3.1e) – Describe where and how climate-related risks and opportunities have influenced your financial planning.	<p>FINANCIAL PLANNING ELEMENT INFLUENCED BY CLIMATE-RELATED RISKS AND OPPORTUNITIES</p> <p>Capital expenditures, acquisitions and divestments: Responding to climate change, Cummins has made several announcements in the past year related to fuel cell technologies. These include the acquisition of the Hydrogenics Corporation in September 2019, providing Cummins with advanced capabilities in proton exchange membrane (PEM) and alkaline fuel cells, as well as electrolyzers used to generate renewable hydrogen. Cummins has also invested in LOOP Energy, a rapidly growing developer, manufacturer and supplier of hydrogen fuel cell solutions. And the company signed a memo of understanding with Hyundai Motor Company for future fuel cell projects. Finally, Cummins has entered an agreement to form a joint venture with NPROXX, a leading hydrogen storage company. In 2019, Cummins spent \$34 million for energy efficiency. Spending increased in both 2018 and 2019 to achieve the company's 2020 energy intensity reduction target of 32%.</p>
	(C3.1f) – Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning.	<p>Environmental sustainability leadership for the next several decades requires a focused approach, starting with the choice of the material used to make products to how products are designed, produced, used and disposed. Sustainability actions can be thought of as value creation (increase innovation, improve competitiveness, and strengthen culture), as well as value protection (reduce regulatory uncertainty and strengthen risk mitigation). That is why Cummins has created its PLANET 2050 environmental sustainability strategy. The strategy establishes aspirations for 2050 and specific goals for 2030. It will help employees see the roles they and Cummins play in the company's and planet's sustainable future.</p> <p>There are three primary focus areas for the strategy:</p> <ol style="list-style-type: none"> 1. Reducing greenhouse gas (GHG) emissions in line with climate experts' recommendations. 2. Doing the company's part to use natural resources in the most sustainable way possible. 3. Making communities better because Cummins is there. Cummins firmly believes the companies that are successful in the future will deliver more value to customers with less environmental impact. Cummins intends on being one of those companies.

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Strategy (continued)		
<p>c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.</p>	<p>(C3.1b) – Provide details of your organization's use of climate-related scenario analysis.</p>	<p>Paris Climate Agreement/Science-based Targets: Cummins uses a method known as scenario planning to contemplate different potential future outcomes in order to make more informed decisions. The company's objective is to ensure Cummins considers all the major scenarios that would impact the business on an ongoing basis beyond a short-term planning window.</p> <p>Scenarios were developed out to 2035 as a reasonable outlook and timeframe. To do this, Cummins first identified the driving forces behind major changes in the world and the critical uncertainties within each. Based on the themes of those critical uncertainties, plausible scenarios were developed to weave a narrative of potential futures.</p> <p>The three themes that Cummins considered in its scenarios were climate change and carbon regulations, evolution of advanced technologies, and economic de-globalization. Potential outcomes and implications to Cummins' business were then analyzed to understand when and how the most extreme disruptions might occur over time. As part of Cummins' own scenario planning process, the company benchmarked Shell as an example of how to use scenario planning to inform investment decisions and future business conditions.</p> <p>Cummins uses Shell scenarios to understand various methods of conducting scenario planning analysis and how to treat various inputs. Cummins does not use the Shell scenarios as a prediction, rather, the Shell scenarios are one reference point for Cummins as a peer company that uses scenario planning. One scenario that Cummins uses through this planning exercise is a climate-related scenario in which countries around the world take aggressive and globally orchestrated steps to decarbonize their economies.</p> <p>Cummins used a climate-related scenario to understand the extreme limits and major drivers of action within this scenario out to 2035; anything less extreme would be compared to a baseline assumption of how this scenario might play out. Scenario-planning helped accelerate Cummins' voluntary sustainability actions. The company developed and had validated two science-based targets for new products and facilities that meet the threshold to limit global warming to 1.5 degrees Celsius or lower.</p> <p>To keep that analysis relevant, Cummins must continually monitor and respond accordingly to changes against key indicators. The company does not view scenario planning as a one-time activity. Rather, it must be used as a tool on an ongoing basis to account for real world changes that occur to inform the potential futures that are yet to come.</p> <p>Cummins used a broad network of external experts and information sources to monitor signposts. Twice a year, signpost owners are required to synthesize their findings and report on any major developments within their priority area. If a trend needs further investigation, a team is assigned to conduct an extensive analysis on that topic to understand it better.</p> <p>In line with these annual synthesis reports, top executives review the findings twice a year and determine a plan of action if that is required. Cummins' senior-most leaders are actively involved in the review and decision-making for the company's use of scenario planning. This ensures that alignment regarding developments on external trends, including climate change related trends, are fully considered into short and long-term business planning.</p> <p>By using scenario planning and the company's existing strategies to address climate change and related impacts, Cummins is prepared to more nimbly adapt its business and investment strategy.</p> <p>Nationally Determined Contributions: Cummins supports the framework of the Paris Agreement and believes that it gives the world a flexible framework to manage climate change while providing a smooth transition for business.</p>

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Strategy (continued)		
		<p>American companies, suppliers, customers, and communities will benefit from U.S. participation in the Paris Agreement in several ways:</p> <ul style="list-style-type: none"> » It strengthens competitiveness in global markets. » It benefits American manufacturing as the country modernizes to new, more efficient technologies. » It supports investment by setting clear goals which enable long-term planning. » It expands global and domestic markets for clean, energy-efficient technologies which will generate jobs and economic growth. » It encourages market-based solutions and innovation to achieve emissions reductions at low cost. <p>Cummins uses Nationally Determined Contributions (NDCs) submitted by each signatory nation through the framework of the Paris Agreement as one input into the Cummins Scenario Planning process. NDCs are a valuable indicator for how ambitious a nation may be in its commitment to mitigate GHG emissions. For this reason, Cummins uses the NDCs and other projections to inform its scenario planning.</p> <p>Because NDCs must undergo an emissions stock-taking and ratchet up their pledges on five-year cycles, they provide a regular and predictable view for Cummins to understand how a given nation is progressing against its goals, and thus how Cummins may need to shift its own efforts to align to those targets.</p> <p>Cummins has a process in place and internal subject matter experts identified who are responsible for monitoring climate change policy development globally, including the tracking of NDCs. While the initial submission of NDCs in 2015 still present an "ambition gap" that will not achieve the stated mitigation goal of a 2 degree C warming scenario, Cummins uses NDCs as a baseline of what nations are likely to achieve.</p>

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Risk management		
<i>Disclose how the organization identifies, assesses, and manages climate-related risks</i>		
a) Describe the organization's processes for identifying and assessing climate-related risks.	(C2.2a) – Which risk types are considered in your organization's climate-related risk assessments?	<p>The following risk types are relevant and always included in Cummins risk assessments.</p> <p>RISK TYPES</p> <p>Current regulation: Cummins' engines are subject to extensive statutory and regulatory requirements that directly or indirectly impose standards governing emissions and noise. These standards are imposed by the U.S. EPA, the European Union, state regulatory agencies such as the California Air Resources Board (CARB) and other regulatory agencies around the world. The company has made, and will be required to continue to make, significant capital and research expenditures to ensure its engines comply with these emission standards. Developing engines and components to meet numerous changing government regulatory requirements, with different implementation timelines and emission requirements, makes developing engines efficiently for multiple markets complicated and could result in substantial additional costs that may be difficult to recover in certain markets. In some cases, Cummins is required to develop new products to comply with new regulations, particularly those relating to air emissions and now increasingly greenhouse gas emissions. While the company has met previous deadlines, its ability to comply with other existing and future regulatory standards will be essential for Cummins to maintain its competitive advantage in the engine markets the company serves.</p> <p>Emerging regulation: The timing of government implementation and enforcement of increasingly stringent emission standards in emerging markets can be unpredictable and subject to change. Any delays in implementation or enforcement can result in the products Cummins develops or modifies to meet these standards becoming necessary later than expected or even unnecessary, thereby diminishing or negating the company's competitive advantage. This in turn can delay, diminish or eliminate the expected return on capital and research expenditures, and undermine the incentive to being an early, advanced developer of compliant products.</p> <p>Technology: The nature and timing of government implementation and enforcement of increasingly stringent emission standards in emerging markets can be unpredictable and subject to change. Cummins is investing in new products and technologies, including electrified powertrains, for planned introduction into certain existing and new markets. Given the early stages of development of some of these new products and technologies, there can be no guarantee of future market acceptance and investment returns with respect to these new or planned products. The increased adoption of electrified powertrains in some market segments could also result in lower demand for current diesel or natural gas platforms and components, and, over time, reduce the demand for related parts and service revenues from diesel or natural gas powertrains. Furthermore, it is possible that Cummins may not be successful in developing segment-leading electrified powertrains and some existing customers could choose to develop their own electrified or alternate fuel powertrains, or source from other manufacturers, and any of these factors could adversely impact the company's results of operations, financial condition and cash flows.</p> <p>Legal: Non-compliance with product and facility regulations could potentially put the company at risk. However, expenditures for environmental control activities and environmental remediation projects at company facilities in the U.S. have not been a substantial portion of Cummins' annual expenses and are not expected to be a significant risk in 2021. Cummins believes it is compliant in all respects with laws and regulations applicable to the company's plants and operations.</p>

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Risk management (continued)		
		<p>Market: Although Cummins conducts market research before launching new or refreshed engine platforms and introducing new services, many factors both within and outside the company’s control could affect the success of new or existing products and services in the marketplace. Offering engines and services that customers desire and value can mitigate the risks of increasing price competition and declining demand, but products and services that are perceived to be less than desirable (whether in terms of price, quality, overall value, fuel efficiency or other attributes) can exacerbate these risks. With increased consumer inter-connectedness through the Internet, social media and other media, mere allegations relating to poor quality, safety, fuel efficiency, corporate responsibility or other key attributes can negatively impact Cummins’ reputation or market acceptance of its products or services, even if such allegations prove to be inaccurate or unfounded.</p> <p>Reputation: Harm to reputation as a product provider and/or environmental leader can be a risk. Offering engines and services that customers desire and value can mitigate the risks of increasing price competition and declining demand, but products and services that are perceived to be less than desirable (whether in terms of price, quality, overall value, fuel efficiency or other attributes) can exacerbate this risk. With increased consumer inter-connectedness through the internet, social media and other media, mere allegations relating to poor quality, safety, fuel efficiency, corporate responsibility or other key attributes can negatively impact the company’s reputation or market acceptance of Cummins products or services, even if such allegations prove to be inaccurate or unfounded.</p> <p>Acute physical: Water scarcity due to climate change is another potential risk. Climate-related risks that are physical in nature are typically water related. Cummins has not recognized any immediate acute water risks, but the potential for inadequate or unreliable water supplies sometime in the future could lead to operational disruptions, increased water pricing, investment in contingency plans, and increased capital expenditures to manage growth within water use allocation limits.</p> <p>Chronic physical: Climate-related risks that are physical in nature are typically water related. Cummins has not recognized any acute water risks. However, the potential for inadequate or unreliable water supplies sometime in the future could lead to operational disruptions, increased water pricing, investment in contingency plans, and increased capital expenditures to manage growth within water use allocation limits.</p>

Recommended Disclosure For TCFD Framework	Alignment to 2020 CDP (Climate Change/Water Security) Questionnaire	Response
Risk management (continued)		
<p>b) Describe the organization's processes for managing climate-related risks.</p>	<p>(C2.2a) – Which risk types are considered in your organization's climate-related risk assessments?</p>	<p>METHODS FOR MANAGING CLIMATE-RELATED RISKS</p> <p>Current regulation: Cummins in 2019 created the Product Compliance and Regulatory Affairs (PCRA) organization to focus on strengthening the company's collaboration with the environmental agencies that set emissions regulations and certification processes. Cummins is working to ensure continued compliance with increasingly challenging global emissions regulations. The new organization functions independently from, and provides oversight to, the product development teams and business functions, reporting directly into the Chief Executive Officer. Working in tandem with the company's Policy Analysis & Technology Portfolio team, PCRA manages climate-related risk by monitoring global regulations and climate change sentiment and policy in countries where Cummins sells products.</p> <p>Emerging regulation: Cummins Policy Analysis & Technology Portfolio team works in tandem with product strategy, the growth office, marketing management and government relations, monitoring the likelihood of emerging climate-related regulations in the countries where the company sells products.</p> <p>Technology: Cummins Policy Analysis & Technology Portfolio team, working in tandem with environmental (climate) strategy and the company's Strategy and Growth function, routinely assesses climate change risk and the perception of that risk by the company's current and potential customers and uses that data in product planning.</p> <p>Legal: The Facilities and Operations Environmental Management Group and its associated internal legal counsel monitor and assess environmental and climate-related regulations.</p> <p>Market: Product planners use the intelligence gathered by the company's environmental sensing network to help plan for market expansion in areas that have emerging climate-related regulation or have need for lower carbon products.</p> <p>Reputation: Cummins Marketing and Communications, Government Relations and environmental strategy functions have developed a "power of choice" action plan to help customers decide which technology is right for them and their climate goals. Cummins is committed to investing in diverse energy platforms to provide customers with a broad portfolio of options, including clean diesel, natural gas, battery-electric power and fuel cell electric, so they can choose what works best for them. Cummins believes, for example, that some of its customers may opt for clean diesel as an infrastructure is developed across the country for electrified power.</p> <p>Acute physical: The Facilities and Operations Environmental Management Group monitors and assesses climate related water risks and develops business continuity plans, accordingly. Cummins met its 2020 goal for a water intensity reduction of 50% (achieving 54%) and has set a 2030 absolute reduction target of 30%.</p> <p>Chronic physical: The Facilities and Operations Environmental Management Group monitors and assesses climate related water risks and has developed business continuity plans, accordingly. Cummins met its 2020 goal for water intensity reduction of 50% (achieving 54%) and has set a 2030 absolute reduction target of 30%.</p>

Recommended Disclosure For TCFD Framework	Alignment to 2020 CDP (Climate Change/Water Security) Questionnaire	Response
Risk management (continued)		
<p>c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.</p>	<p>(C2.2) – Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.</p>	<p>PROCESSES FOR IDENTIFYING, ASSESSING, AND RESPONDING TO CLIMATE-RELATED RISKS AND OPPORTUNITIES</p> <p>Value chain stages covered: Direct operations, upstream and downstream.</p> <p>Risk management process: Integrated into multi-disciplinary, company-wide risk management process.</p> <p>Frequency of assessment: Annually</p> <p>Time horizons covered: Short-, medium-, and long-term.</p> <p>Description of process: Cummins performed global scenario planning work starting in 2016 to understand how climate-related risks stand to impact the markets and customers the company serves, and how these risks might impact Cummins' business. The company tracks developments in "priority areas" determined via a scenario planning process.</p> <p>One priority area that the business monitors is climate change policies. Within this priority area, Cummins monitors policy developments globally relating to national and sub-national climate goals and resulting legislation or regulations. Updates on this priority area are provided to an internal technical strategy team twice a year. The strategy team directs follow up to appropriate groups within the business and business leadership. These priority areas can be indicators of both risks and opportunities.</p> <p>Cummins Technology Planning function, under the company's Chief Technical Officer, leads this work, integrating input from Cummins' "sensing network" for technical developments, regulatory developments, or market/economic developments. The scenario planning process was an integral part of the company's strategy to pursue electrified products, hydrogen and other low-carbon future options identified as a transitional opportunity.</p> <p>This has resulted, since late 2017, in the acquisition of two battery storage companies and an electrified powertrain company, the development of an electric heavy-duty truck, and the introduction of the company's first battery-electric bus platform in 2019.</p> <p>The company's hydrogen activities include the acquisition of the Hydrogenics Corporation in September 2019, providing Cummins with both proton exchange membrane (PEM) and alkaline fuel cells as well as electrolyzers used to generate low-carbon, renewable hydrogen. Cummins has also invested in LOOP Energy, signed a memo of understanding with Hyundai Motor Company to develop and commercialize battery electric and fuel cell electric powertrains, entered an agreement to form a joint venture with hydrogen storage leader NPROXX, and invested in the development of solid oxide fuel cells.</p> <p>Cummins has done much work on identifying physical climate-related water risks. The company conducted detailed watershed assessments to facilities scoring above the 150 "at risk" threshold. For example, Cummins Brasil Ltda, the largest company site in Brazil, was added to the risk list due to specific water issues arising in the area.</p> <p>The potential for inadequate or unreliable water supplies can in the short- and long-term lead to operational disruptions, increased water prices, investment in contingency plans, and increased capital expenditures to manage growth within water-use allocation limits. Cummins Brasil Ltda was elevated to high risk based upon facility expansion and drought conditions within Brazil.</p> <p>A watershed assessment was conducted to better understand and evaluate water sourcing risks, alternatives, and overall watershed conditions. In addition to continued water conservation measures and technologies, additional response measures may include deployment of additional water storage and low/no water use processes such as air-cooled chiller systems where warranted and upgrades to the wastewater treatment system to allow for 100% reuse.</p>

Recommended Disclosure For TCFD Framework	Alignment to 2020 CDP (Climate Change/Water Security) Questionnaire	Response
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Risk management (continued)

Cummins also encourages community engagement projects each year focusing on employee volunteer hours and sustainable projects that will be owned by the community upon completion. Cummins has a grant process to fund these projects and allows sites to fund smaller ones within their own budgets.

Historical data shows these are relatively low cost. The Action Committee for Environmental Sustainability did a hot spot environmental assessment in 2011 and the resulting data still informs the company's strategy and planning today. The assessment concluded that 99% of Cummins' greenhouse gas footprint comes from the company's products in their use phase. The group identified an opportunity to address these emissions by setting a science-based target to reduce lifetime emissions from newly sold products in their use phase by 2030.

Finally, the company in 2020 and 2021 took several new steps to identify climate related risks. The company's Executive Risk Council and Board of Directors had managed climate related risk within other Enterprise Risks that have overlap with climate change and included climate change as an Emerging Risk.

Climate Change was recently upgraded to a regularly reviewed Enterprise Risk by the Executive Risk Council. Climate change was also added as a risk factor in Cummins' 2020 Annual Report on Form 10K. And in 2021, the company hired a third-party consultant to evaluate the risk presented by climate change to individual Cummins facilities.

Metrics and targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material

<p>a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.</p>	<p>(C9.1) – Provide any additional climate-related metrics relevant to your business.</p>	<p>Waste: Cummins made increasing its recycling rate to 95% one of the company's 2020 Sustainability Goals. In 2019, Cummins recycled 91.1% of the waste generated at its global facilities and operations. For the percentage of waste recycled compared to the baseline year of 2010, please refer to 2019 Cummins Sustainability Progress Report.</p> <p>Energy use: Cummins' 2020 sustainability goals included reducing energy intensity (MMBtu/hours worked) by 32% from a 2010 baseline. By the end of 2019, Cummins had reduced its global energy intensity by 31%. For the percentage reduction on energy intensity (adjusted by hours worked) compared to the 2010 baseline year, please refer to 2019 Cummins Sustainability Progress Report.</p> <p>Water: The goals of Cummins' comprehensive water strategy, which addresses both direct-water use and community engagement, are to mitigate business risk, to be a good global citizen and to reduce costs and compliance risk. For the percentage reduction of direct water use adjusted by hours worked, please refer to 2019 Cummins Sustainability Progress Report. For a comprehensive disclosure around Cummins water-related risks and opportunities, and metrics used, please refer to Cummins 2020 CDP Water Security Report.</p>
<p>b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.</p>	<p>(C6.1) – What were your organization's gross global Scope 1 emissions in metric tons CO₂e?</p> <p>(C6.3) – What were your organization's gross global Scope 2 emissions in metric tons CO₂e?</p>	<p>Gross global Scope 1⁴ emissions (metric tons of CO₂e): 302,907.</p> <p>Gross global Scope 2⁵, location-based emissions (metric tons of CO₂e): 504,351.</p> <p>Gross global Scope 2⁶, market-based emissions (metric tons of CO₂e): 385,653.</p>

⁴ For emissions calculation methodology, and other information regarding Cummins emissions data, please see Cummins [2020 Climate Change Response](#).
^{5,6} For emissions calculation methodology, and other information regarding Cummins emissions data, please see Cummins [2020 Climate Change Response](#).

Recommended Disclosure For TCFD Framework	Alignment to 2020 CDP (Climate Change/Water Security) Questionnaire	Response
	<p>(C6.5) – Account for your organization’s gross global Scope 3 emissions, disclosing and explaining any exclusions.</p>	<p>Gross global Scope 3⁷ emissions (metric tons of CO₂e):</p> <p>Purchased goods and services: 4,392,000. Capital goods: 414,000. Fuel-and-energy-related activities (not included in Scope 1 or 2): 173,000. Upstream transportation and distribution: 798,000. Waste generated in operations: 6,900. Business travel: 35,500. Employee commuting: 122,000. Upstream leased assets: 17,000. Downstream transportation and distribution: 798,000. Processing of sold products: 2,800. Use of sold products: 925,000,000. End of life treatment of sold products: 59,000. Downstream leased assets: 50,000. Investments: 41,400.</p>
<p>c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.</p>	<p>(C4.1a) – Provide details of your absolute emissions target(s) and progress made against those targets.</p>	<p>ABSOLUTE TARGETS⁸</p> <p>Scope: Use of sold products (Scope 3) Base year: 2014. Target year: 2020. Targeted reduction from base year: 1.6%. Comment: Cummins’ fuel economy teams throughout the world have implemented more than 300 projects since this goal was announced in 2014. The result is that Cummins has already surpassed its goal of a 3.5 million metric ton run rate per year and achieved a 4.3 million metric ton run rate in 2018.</p> <p>Scope: Use of sold product (Scope 3). Base Year: 2018. Target year: 2030. Targeted reduction from base year: 25%. Comment: Cummins committed to reduce absolute Scope 3 GHG emissions from the use of sold products 25% by 2030 from a 2018 base year. On June 21, 2019, the Science-Based Target initiative’s (SBTi) Target Validation Team approved the target.</p> <p>Scope: Scope 1+2 (market-based). Base Year: 2018. Target year: 2030. Targeted reduction from base year: 50%. Comment: Cummins committed to reduce absolute Scope 1 and 2 GHG emissions 50% by 2030 from a 2018 base year. On June 21, 2019, the Science-Based Targets initiative’s (SBTi) Target Validation Team classified the scope 1 and 2 target ambition and determined that it is in line with a 1.5°C trajectory and approved the target.</p> <p>See also ‘Emission Reduction Initiatives’ (CDP Question C4.3a) that demonstrates progress towards reducing emissions through implementing emissions reduction initiatives.</p>

⁷ For emissions calculation methodology, and other information regarding Cummins emissions data, please see Cummins [2020 Climate Change Response](#).

⁸ For the full CDP response to Question (C4.1a), please see Cummins [2020 Climate Change Response](#).

Recommended Disclosure For TCFD Framework	Alignment to 2020 CDP (Climate Change/Water Security) Questionnaire	Response
Metrics and targets (continued)		
	(C4.1b) – Provide details of your emissions intensity target(s) and progress made against those target(s).	<p>INTENSITY TARGET⁹</p> <p>Scope: Scope 1+2 (market-based). Base Year: 2010. Target year: 2020. Targeted reduction from base year: 32%. Comment: Cummins in 2016 approved its third GHG goal in 10 years after exceeding its second greenhouse gas (GHG) reduction goal in 2015. The current goal's intensity factor is based on hours worked, not revenue as previously used. All consolidated operations and joint ventures subscribing to Cummins' Enterprise Environmental Management System are included. However, emissions associated with generation of sold electricity (as part of the power solutions business) and mobile sources (emissions associated with on road vehicles) are not included in the goals. Additionally, it is assumed that 2010 market-based emissions to be the same as location-based emissions. During the same period (2010 to 2020), based on the hours forecast, a 10% increase in absolute Scope 1+2 emissions is anticipated. This target does not include or impact Scope 3 emissions.</p>
	(W8.1a) – Provide details of your water targets that are monitored at the corporate level, and the progress made.	<p>WATER TARGET</p> <p>Category of target: Water consumption. Level: Company-wide. Description of target: Cummins established a new water conservation goal in 2016 of a 50% labor-normalized reduction to a 2010 baseline. Water stewardship is the stated motivation for this target, though cost reduction and risk mitigation benefits also exist. Baseline year: 2010. Target year: 2020. % of target achieved: 100.</p> <p>Category of target: Water consumption Level: Company-wide Description of target: Cummins established a new water conservation goal in 2016 of a 50% labor-normalized reduction to a 2010 baseline. Water stewardship is the stated motivation for this target, though cost reduction and risk mitigation benefits also exist. Baseline year: 2010. Target year: 2020. % of target achieved: 100.</p>
	<p>(W8.1b) – Provide details of your water goal(s) that are monitored at the corporate level and the progress made.</p> <p>(C4.2) – Did you have any other climate-related targets that were active in the reporting year?</p>	<p>WATER GOAL</p> <p>Goal: Engaging with local community. Level: Country level. Description: Achieve water neutrality at 15 sites (manufacturing, test, high intensity) by 2020 in priority water stressed countries - India, China, Mexico, South Africa, Brazil. This goal is intended to drive work in the community to off-set our footprint and create connectivity with Cummins corporate responsibility programs. While water stewardship is listed as the motivation, risk mitigation benefits also exist. Baseline year: 2010. End year: 2020. Progress: Fifteen sites had achieved water neutrality by the end of 2019.</p> <p>Other climate-related targets active in the reporting year Target(s) to increase low-carbon energy consumption or production.</p>

⁹ For the full CDP response to Question (C4.1b), please see Cummins [2020 Climate Change Response](#).

CUMMINS CLIMATE STORY

LOW-CARBON TRANSITION PLAN/ GHG REDUCTION STRATEGY

As referenced previously, Cummins' [PLANET 2050](#) is the company's next generation environmental sustainability strategy. It looks out to 2050, setting quantifiable goals for 2030 along with visionary longer-term aspirations to 2050. One of the three foci is "doing our part to address climate change and air emissions," which includes planned strategy and actions to reduce greenhouse gas and air emissions in line with experts' recommendations.

Cummins completed a comprehensive scenario analysis in 2017, which included climate change as one of the inputs. This analysis has been the basis for the company's disclosure to CDP and, as presented, this document.

While not part of officially recognized climate scenario models, Cummins' analysis conducted as part of the company's [PLANET 2050](#) sustainability strategy can be considered scenario planning. Cummins used data provided by the Science-based Targets Initiative and its own knowledge of future and possible regulations, its lifecycle emissions model and its own current technology plans to create a science-based target for newly sold products.

REDUCE SCOPE 3 ABSOLUTE LIFETIME GHG EMISSIONS FROM NEWLY SOLD PRODUCTS BY 25%

Lifetime CO₂e (MMT) =

$$\sum_{\text{Years}}^{40} \text{Adjusted Volume} * \frac{\text{Duty cycle} + 10.2441 + 1e^{-9}}{\text{Fuel Economy}}$$

$$\text{Adjusted Volume} = \text{Volume} * \text{Life factor} * \text{Age factor}$$

ASSUMPTIONS



VOLUME

APP / CAGR model
Life factor/age
factor models



DUTY CYCLE

Aggregated
values

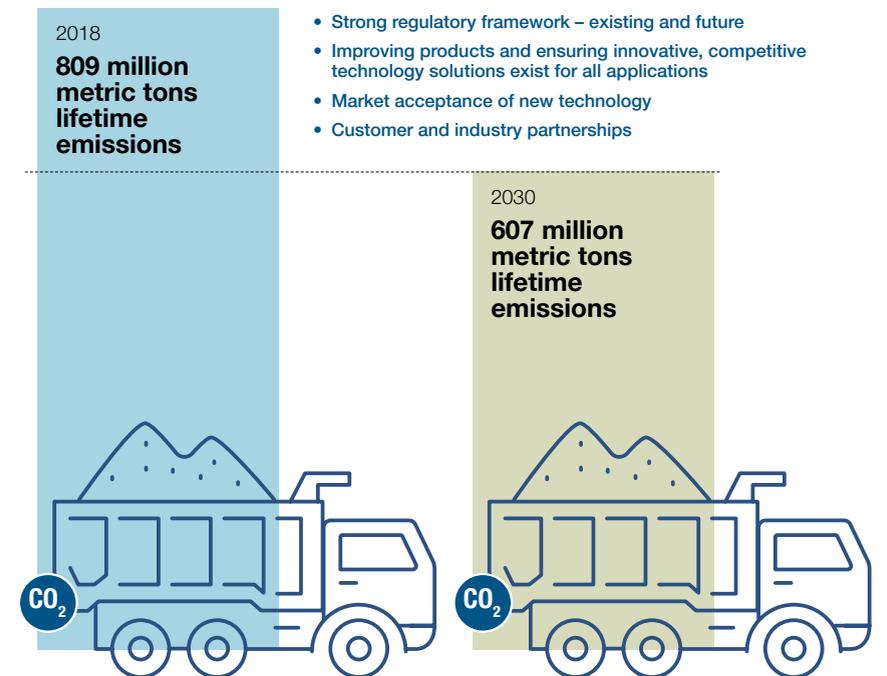


FUEL ECONOMY

Weighted average
for sectors

Above is a graphic breakdown of the company's greenhouse gas (GHG) goal in the new strategy.

Meeting our science-based product target of a 25% CO₂ reduction



While Cummins is completing the 2021 reporting on its 2020 sustainability plan, it is developing its “path to zero strategy” for 2050 as well as more specific actions for 2030. To meet its 2030 goal of reducing scope 3 absolute lifetime GHG emissions from newly sold products by 25%, Cummins is engaging in a wide range of actions and analyses. The company expects to begin reporting on these efforts in 2022 or earlier. These include assessing risk of the pace and depth of investment and gathering end-user customer insights directly as well as through other technology partners and OEMs. The company is developing tools related to changing technology or product mix and updating its previous scenario analysis with a separate climate scenario analysis that builds on what was completed for PLANET 2050. This will include technology substitution curves as well as roadmaps for technology product development excellence.

The executive of Cummins Technical and Environmental Systems (TES) leads staff with direct board engagement, in particular the Safety, Environment and Technology (SET) committee where new product technology is on every meeting agenda.

Cummins SET committee plans for its third quarter 2021 meeting to be a two-day session devoted to decarbonization and infrastructure requirements.

ALIGNING FOR ZERO EMISSIONS BY 2050

Cummins’ actions are in line with the AAA Climate Leadership framework of advocate, align and allocate for net zero emissions by 2050.

Climate advocacy

Cummins has reported on its lobbying efforts in the company’s [Sustainability Progress Reports](#) and its [GDP responses](#). Cummins estimates that one quarter of its lobbying expense, or about \$750,000, per year is devoted to climate advocacy. Understanding that this content is constrained by space or the framework of the questionnaire, Cummins offers the following additional details on its climate advocacy.

A proponent of climate science, Cummins has never lobbied for policies counter to addressing climate change and, in fact, has testified before state and federal legislators on multiple occasions in support of regulations and complementary policies acting on climate-related issues. The company will continue to work in partnership with others to advocate for tough, clear and enforceable regulations across the globe to address air emissions and for science-based climate policies.

Cummins also evaluates the climate positions of its business partners for alignment with the goals and aspirations in the company’s [PLANET 2050](#) environmental strategy and Cummins’ public commitments on climate action. In addition, the company

encourages the trade associations it joins to address climate change and support the Paris Climate Agreement. For example, Cummins belongs to the U.S. Chamber of Commerce to help amplify its position to government leaders on immigration and taxes, and the National Association of Manufacturers (NAM), to help ensure lawmakers know where Cummins stands on energy, trade and manufacturing. It has encouraged both groups to embrace climate science.

Like many members, Cummins was an active participant when the chamber in 2019 create its first Task Force on Climate Change and encouraged NAM to embrace the objectives of the Paris Agreement. Both groups had been opposed to climate science for many years, but recently revered those positions. Cummins also worked with the Business Roundtable move beyond embracing climate science to supporting the bold step of endorsing carbon pricing in efforts to address climate change, a position the company enthusiastically supports.

Cummins’ Government Relations team lobbies for regulations and complimentary policies addressing climate change in the markets where the company does business around the world. To ensure the team speaks in a unified voice, the entire Government Relations staff meets monthly and the group’s regional leaders meet every other week with Catherine Van Way, Cummins’ Vice President of Government Relations. The team also wants to make sure it is aligned with the company’s Board of Directors. Government Relations prepares a report on its progress and challenges for each board meeting – typically five times a year.

Cummins' goal is to offer customers a broad portfolio of products, so they can choose what works best to achieve their sustainability goals. Widespread adoption of new no- and low-carbon technologies, however, will be very difficult without government leadership promoting the necessary infrastructure and support so customers can make effective use of them.

To do this Cummins works across all areas of the company to drive alignment with its overall climate strategy. Cummins' Moving Power Forward working group meets regularly and reports to a senior leadership group quarterly. It aligns the company's environmental, government relations and communications work, to climate policy reviews by Cummins' technical strategy teams, as well as to the company's working group on Cummins' product plans, and to the company's advocacy strategy.

Cummins' CEO, meanwhile, holds annual strategy sessions with the company's cross-functional Action Committee for Environmental Sustainability (ACES) to ensure both the company is making progress on its PLANET 2050 goals and that ACES' plans, processes and strategies are aligned with Cummins' climate ambitions.

RECENT EXAMPLES

Below are some specific examples of Cummins' lobbying efforts:

- Cummins executives testify in front of Congress to support policies to address climate change:
 - » March 2021, Vice Chairman Tony Satterthwaite [testifies](#) before the U.S. Senate Committee on Energy and Natural Resources during the hearing on transportation technologies.
 - » July 2019, then- President and COO Tony Satterthwaite [appears](#) before the House Select Committee on the Climate Crisis.
 - » October 2019, Dr. Wayne Eckerle, Vice President – Research and Technology, [testifies](#) before the House Energy and Commerce Environment and Climate Change Subcommittee.
- Cummins encourages its trade associations to address climate change and support the Paris Climate Agreement:
 - » November 2020, [Dr. Wayne Eckerle](#) addresses diesel's low-carbon future during a virtual discussion sponsored by the Diesel Technology Forum.
 - » Cummins and others lobby the National Association of Manufacturers (NAM) to support the Paris Agreement to limit warming.
 - » Cummins in 2020 joins a U.S. Chamber of Commerce committee on climate change and expresses support for the Paris Agreement and the goal of net-zero emissions by 2050.
 - » Engaging with the Business Roundtable (BRT), Cummins in 2020 advocates for BRT to support for the Paris Agreement, net-zero emissions by 2050, and a market based mechanism to price the social cost of carbon.
- Cummins advocates for legislation to address climate change including:
 - » Tax credits for decarbonized transportation and infrastructure investment.
 - » Appropriations for robust U.S. Department of Energy (DOE) research and development on decarbonization technologies.
 - » Market reform to support decarbonizing the electric grid.

Support U.S. research and development

Cummins has supported public funding for research and development programs providing needed expertise, resources and partnerships to promote development of clean power technologies that ensure the United States maintains its leadership role in this critical area, including:

- **U.S. House Science Committee Vehicle Innovation Act.**

This bill authorizes the Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) to research and develop a diverse mix of innovative technologies for commercial vehicles.

- **Supplemental appropriations of \$200 million in funding for the DOE EERE Vehicle Technologies Office research on commercial vehicles classes 2b-8.**

This funding focuses on programs significantly improving fuel efficiency for U.S. on-highway transportation fleets to reduce emissions and cost, while also promoting U.S. manufacturing and commercialization of advanced technologies. Areas of research could include a durable, flexible fuel engine in conjunction with DOE's Co-Optima program, additional research on mild-hybrid technology, and the SuperTruck 3 initiative.

- **Appropriations of \$325 million for the DOE EERE Fuel Cell Technologies Office (FCTO).**

This funding focuses on accelerating hydrogen-related technology including market transformation programs to support advanced demonstrations of mobile and stationary fuel cells.

Enact tax policy to encourage clean technology adoption

Cummins has supported the following recommendations to promote U.S. manufacturing of advanced low-carbon technologies in transportation and energy generation, as well modernizing truck fleets with the cleanest and safest available vehicles:

- **Suspend the 101-year-old 12% federal excise tax on heavy-duty trucks.**

Cummins, along with a large coalition of truck manufacturers, dealers and state trucking associations, supports a suspension of the Federal Excise Tax on new trucks through 2021, encouraging the updating of fleets with the clean air benefits of modern technology.

- **Extend tax credits that promote energy efficiency and diversity.** The Fuel Cell Vehicle Tax Credit, Alternative Fuels Tax Credit, the Alternative Fuel Refueling Infrastructure Tax Credit, the Carbon Capture and Sequestration Tax Credit, the Energy Production Tax Credit and the Investment Tax Credit (Secs. 6426, 30B, 30C, 45Q and 48).

- **Ensure favorable treatment of research and development expenditures in the Internal Revenue Code.** This includes a robust Research and Development Tax Credit and a fair and efficient system of cost recovery for research and development expenses.

PARTNERSHIPS

Cummins has reported on its partnerships for many years, such as on page 31 in the company's [2019 Sustainability Progress Report](#). Also see page 57 for a selected listing of technical partnerships.

The company has encouraged partnerships that replicate the model of the successful [21st Century Truck Partnership](#), an industry-government partnership between heavy-duty engine manufacturers, heavy-duty truck and bus manufacturers, heavy hybrid and electrified powertrain manufacturers, and four federal government agencies.

Specific technology goals have been defined that will reduce fuel usage and emissions and increase safety. The aim of the partnership is to support research, development and demonstration, which makes it possible to achieve these goals with commercially viable products and systems.

Of particular note, Cummins:

- Was one of the initial companies pledging a voluntary greenhouse gas reduction commitment from its facilities as part of the U.S. EPA's Climate Leader program.
- Was one of the first to make a commitment to the U.S. Department of Energy's Better Plants Challenge.
- Was a founding industry partner of the Health Effects Institute. See story on page 25 of Cummins' [2018 Sustainability Progress Report](#).
- Was a lead partner in the original Department of Energy SuperTruck program. See story on page 64 of Cummins' [2013 Sustainability Progress Report](#).

COST OF CARBON MECHANISM

Cummins understands that to achieve a goal of net-zero carbon by 2050, which it adopted in the company's PLANET 2050 strategy, there will need to be an established, market-based mechanism to internalize the social cost of carbon. This, along with sector-specific policies providing tough, clear and enforceable standards, similar to the Phase 2 fuel-efficiency rule for commercial vehicles in the United States, will provide a road map for achieving net-zero carbon status.

Any carbon pricing mechanism should maintain sector-specific policies where appropriate. The heavy-duty truck industry relies on the U.S. EPA's fuel efficiency rules for commercial vehicles to provide a roadmap of tough, clear and enforceable standards with appropriate lead times for innovation.

Knowing the emissions reduction levels customers in the public and private sector will demand allows Cummins to invest in the right technologies at the right time, and maximize that investment so the company has the right solutions to get the job done in the most responsible way.

It is critical that any carbon pricing mechanism maintain the EPA's [fuel efficiency rules for commercial vehicles](#).

INNOVATION

Cummins has included innovation highlights annually in its [Sustainability Progress Reports](#). Cummins regularly spends nearly \$1 billion in research and development per year, the vast majority of it for moving power forward.

The company has been very public with its intent to be an industry leader in electrified products. With battery capacity improving and prices dropping, and with the development of hydrogen fuel cells, electrified powertrains are becoming more affordable and practical for certain types of commercial vehicles. These include urban bus fleets and pickup and delivery trucks. The company sees electrified power as a great option for return to base, short-run commercial vehicle routes that do not require large torque.

As more parts of the world generate cleaner electricity, Cummins expects electrified powertrains to become an increasingly viable option for other types of customers, too. The company will provide the entire electrified powertrain solution, as well as some of the most critical components that have the largest impact on performance, quality, and power of the system to deliver the most value to customers.

In 2017, Cummins committed to spending \$500 million over three years to develop electrified solutions through what would become the company's New Power business segment. The company would then indicate in 2019 it would invest another \$500 million over the following three years in addition to the acquisition of Hydrogenics that year. Hydrogenics provided Cummins with both proton exchange membrane (PEM) and alkaline fuel cell capacity as well as electrolyzers to generate low-carbon, renewable hydrogen. Today, Cummins is developing both battery electric and fuel cell electric platforms as well as electrolyzers.

The New Power segment designs, manufactures, sells and supports electrified power systems ranging from fully electric to hybrid along with innovative components and subsystems involved in battery and fuel cell electric as well as hydrogen production. Cummins anticipates its customer base for New Power's offerings will be highly diversified, representing multiple end markets with a broad range of application requirements.

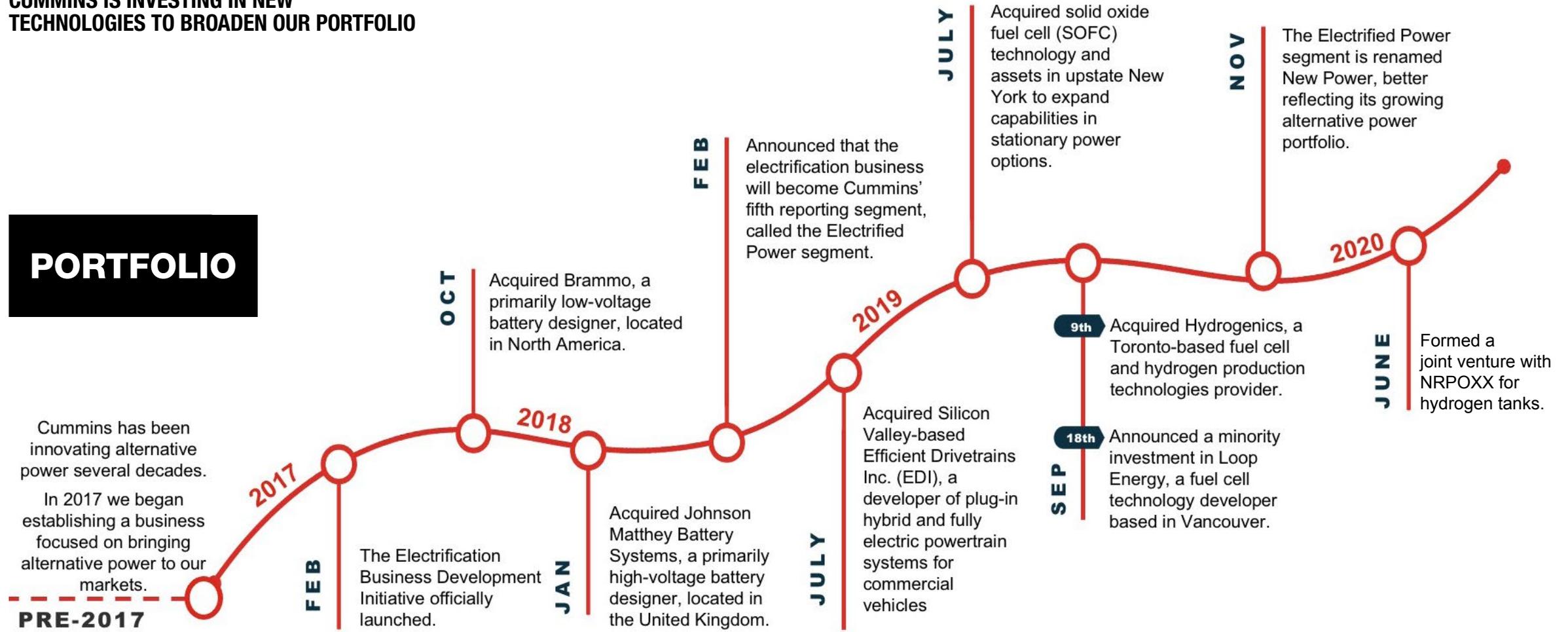
In the United States, Cummins has won five U.S. Department of Energy awards worth \$13 million, the most of any company, to work on advancing electrolyzers, fuel cells, and solid oxide technologies. There are many articles on these initiatives in the [Newsroom on cummins.com](#). In addition, New Power has established a [website devoted to its efforts](#).

At the U.S. federal level, Cummins has supported the following investment foci for climate solutions:

- Federal investment and tax policy that encourages and sustains innovation. Robust and consistent investment in research and development and investment through grants and public-private partnerships is essential to provide market certainty for consumers, fleets, dealers, manufacturers and suppliers participating in the transition to cleaner technologies.
- Infrastructure investment across energy and transportation sectors. Encouraging adoption of low emission technologies infrastructure investment is critical. Federal investment in battery electric vehicle charging as well as hydrogen and natural gas fueling infrastructure helps accelerate adoption of these technologies.
- Low or no-carbon, sustainable fuel choices. The rise of multiple fuels means a poly-fuel future, but each fleet has unique needs. It is important for suppliers to continually produce more sustainable, low or no-carbon fuels, vehicle technologies, and infrastructure that measurably improve well-to-wheels climate impacts and address other relevant sustainability impacts and benefits.

CUMMINS IS INVESTING IN NEW TECHNOLOGIES TO BROADEN OUR PORTFOLIO

PORTFOLIO



TWO DECADES OF ENVIRONMENTAL AND CLIMATE LEADERSHIP

The following timeline highlights significant milestones in Cummins' addressing emissions and climate leadership over the last two decades:

2002

- » Cummins meets early the U.S. EPA's 2004 "pull-ahead" emission standards established for heavy-duty on-highway engines.

2006

- » The company joins the EPA's Climate Leaders Program, pledging a 25% reduction in greenhouse gas (GHG) emissions from facilities by 2010 as compared to a 2005 baseline. This is Cummins' first formal GHG reduction goal.
- » Cummins begins publicly reporting its GHG inventory and emissions to CDP (formerly known as the Carbon Disclosure Project).
- » The company announces plans to develop a company-wide global climate change policy to guide the business in efforts to improve energy efficiency and minimize its impact on the environment.

2007

- » Cummins charts its Climate Change Workgroup, creating climate change principles focused on company actions and policy advocacy. The principles set an expectation Cummins will be "part of the climate change solution."
- » The company's 6.7-liter turbo-diesel engine achieves the EPA's 2010 oxides of nitrogen (NOx) standards three years earlier than required. Cummins is the first to meet 2010 truck emissions standards in all 50 states.

2009

- » Cummins re-charters and expands its Climate Change Workgroup, recognizing that "climate change is our greatest environmental challenge." The workgroup expands on the 2007 principles and adds four new principles – two for company action and two for policy advocacy.
- » The company forms its Energy Champion Program, which trains employees to improve energy efficiency at company plants.
- » Cummins creates a Fuel Efficiency Task Force.
- » The company authors a paper titled "Framework for the Regulation of Greenhouse Gases from Commercial Vehicles" at the request of the National Academy of Sciences to serve as a reference for U.S. regulators.

2010

- » Cummins achieves a 28% GHG reduction from facilities in 2010 compared to a 2005 baseline, exceeding the company's first reduction goal of 25%.
- » The company sets its second GHG reduction goal for facilities, aiming to reduce GHG emissions by an additional 25% and reduce energy use by 27% by 2015 compared to a baseline year of 2005.
- » Cummins' Chief Technical Officer Dr. John Wall meets with more than 4,000 employees at 24 town hall meetings to share the company's views on climate change, reducing energy consumption and opportunities for employees to become more engaged with regard to their own carbon footprint.
- » The company's Chairman and CEO Tim Solso, in a letter to U.S. Department of Transportation and the EPA, outlines the company's support of a national program to address GHG emissions and fuel efficiency for medium- and heavy-duty trucks and buses along with principles to guide program development.
- » Cummins receives a grant from the U.S. Department of Energy (DOE) as part of the SuperTruck program, which has the goal of designing a concept heavy-duty Class 8 truck achieving a 50% improvement in overall freight efficiency measured in ton-miles per gallon.

2011

- » The company joins the DOE's Better Buildings, Better Plants Challenge Partnership, committing to a 25% energy efficiency intensity reduction by 2015 from a 2005 baseline, which equates to a 27% GHG reduction.

2012

- » Cummins forms the company's Action Committee for Environmental Sustainability (ACES) as the voice and catalyst for environmental action beyond compliance and provides tools and resources for employees to go further and faster in reaching environmental goals.
- » The company has Bureau Veritas audit Cummins' GHG inventory.

2013

- » Cummins performs a lifecycle analysis (LCA) on its flagship ISX15L engine in order to further its approach to product stewardship with a lifecycle mindset and for development of the company's design for environment strategy.
- » The company certifies three sites to the ISO 50001 international energy management standard.

2014

- » Cummins announces its first comprehensive sustainability plan with five primary goals involving waste, water, energy and GHG emissions for company facilities.

2015

- » Cummins is recognized by CDP as a leader in the U.S. for disclosure of climate change related information to investors and customers, scoring a 100 out of a possible 100 on the Climate Disclosure Leadership Index.
- » The company renames its Energy Champions program the Environmental Champions program, reflecting an expanded mission from solely energy savings to also including reductions in water and waste.
- » Cummins exceeds its energy and GHG reduction goals, achieving a 36% reduction in GHG intensity and a 33% reduction in energy intensity (both adjusted for sales) from a 2005 baseline year. The company's GHG emissions decrease by 14,000 tons on an absolute basis and 1% adjusted for sales from the previous year.
- » The company sets two additional sustainability goals for reduction in carbon dioxide (CO₂) emissions. For products in-use, Cummins' goal is to partner with customers to improve the efficiency of products in-use, reaching by 2020 an annual reduction of 3.5 million metric tons (MMT) of CO₂. This would save 350 million gallons of fuel (baseline year 2014). Cummins' new logistics goals are to use the most efficient method and mode to move goods across the Cummins' network to reduce CO₂ per kilogram of goods moved by 10% by 2020 (baseline year of 2014).
- » Cummins reports to the GDP a collective lifetime emissions estimate for all products sold in the previous year to help guide future company reduction efforts.

- » The company introduces the ISL G Near Zero (NZ) NOx natural gas engine, "the first mid-range engine in North America to receive emission certifications from both the EPA and California Air Resources Board (CARB) that meet the 0.02 g/bhp-hr optional Near Zero NOx emissions standards for medium-duty truck, urban bus and refuse applications.

2016

- » Cummins pledges that 90% of its facility carbon footprint will meet the ISO 50001 international standards by 2020.
- » The company approves its third energy goal in 10 years, pledging to achieve a 32% energy intensity reduction from Cummins facilities by 2020 (baseline year of 2010) and increase the portion of electricity it uses derived from renewable sources.
- » Cummins announces the company's support of EPA and National Highway and Transportation Safety Administration's second phase of national fuel efficiency and GHG emissions regulations for medium-and heavy-duty commercial vehicles.
- » The company announces a partnership with Peterbilt on SuperTruck II, a project funded by the DOE to develop and demonstrate cost-effective technologies that more than double the freight efficiency of Class 8 Trucks. The goal of the SuperTruck program is to accelerate the pace of reductions in petroleum consumption and GHG emissions of the nation's freight transportation system.

2017

- » Cummins signs on to the International Council on Clean Transportation's soot-free bus initiative, pledging to help bring low-emissions bus technology to cities worldwide.
- » Company Chairman and CEO Tom Linebarger is one of 30 CEOs to sign a pledge for climate action published in the Wall Street Journal.
- » Cummins commits to setting science-based targets for reducing GHG emissions.
- » The company announces its Virtual Power Purchase Agreement (VPPA) with EDP Renewables North America to support a wind farm expansion in northern Indiana.
- » Cummins becomes a signatory of the United Nations Global Compact encouraging businesses worldwide to adopt sustainable practices.
- » The company unveils its first all-electric powertrain for trucks and buses.

2018

- » Cummins announces its support for the launch of the U.S. EPA Cleaner Trucks Initiative (CTI), an effort to create standards to reduce NOx emissions from on-highway heavy-duty engines.
- » The company holds its first meeting with Climate Action 100+, an investor-led initiative to advocate for action on climate change.
- » The Environmental Defense Fund's Fred Krupp interviews Cummins Chairman and CEO Tom Linebarger concerning emissions, sustainability and Cummins' commitment to supporting strong, clear and enforceable emissions regulations for his podcast and blog on the group's website and Forbes.com.

2019

- » Cummins closes on its acquisition of Hydrogenics, one of the world's premier fuel cell and hydrogen production technology providers to further the company's fuel cell electric capabilities.
- » The company announces it has reached two of its 2020 environmental sustainability goals early: Reducing water use per hour worked and cutting CO₂ through collaborative projects with customers.
- » Cummins unveils PLANET 2050, the company's next generation environmental sustainability strategy that looks out to 2050. The strategy sets quantifiable goals for 2030 along with visionary longer-term aspirations to 2050.

2020

- » Cummins holds its first virtual Hydrogen Day for 3,000 analysts, media members and others to report on its progress developing low- and no-carbon products employing this promising fuel source.
- » The company's fuel cells power the world's first hydrogen train in Europe.
- » Cummins announces it will work with longtime customer Navistar on the development of a Class 8 truck powered by hydrogen fuel cells.
- » The company unveils water treatment plants at its Jamestown, New York, and Rocky Mount, North Carolina, engine plants that will send millions of gallons of treated wastewater back into the plants for non-potable uses, reducing the two plants' fresh-water intake significantly.



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