# **PACCAR Inc - Climate Change 2020**

## **C0. Introduction**

## **C0.1**

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

PACCAR is a global technology leader in the design, manufacture and customer support of premium light-, medium- and heavy-duty trucks under the Kenworth, Peterbilt and DAF nameplates. The company also provides customized financial services, information technology and truck parts related to its principal business.

## **C0.2**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Start date** | **End date** | **Indicate if you are providing emissions data for past reporting years** | **Select the number of past reporting years you will be providing emissions data for** |
| Reporting year | January 1 2019 | December 31 2019 | No | <Not Applicable> |

## **C0.3**

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

Australia

Belgium

Canada

Mexico

Netherlands

United Kingdom of Great Britain and Northern Ireland

United States of America

## **C0.4**

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

USD

## **C0.5**

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

Operational control

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

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

Heavy Duty Vehicles (HDV)

## **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) | PACCAR’s Chief Executive Officer (CEO), who is a member of the Board of Directors, has responsibility for climate-related issues. This is because climate strategy, planning and responses are integrated into PACCAR’s operations, planning, and capital budgeting processes, which are the responsibility of the CEO. The senior executives in charge of division operations, planning, strategy, and innovation report directly to the CEO on a weekly basis. For example, significant progress with advanced technology vehicles including hybrids, alternative low carbon fueled and electric vehicles is reported to the CEO on a weekly basis by PACCAR’s Chief Technology Officer (CTO). The CTO’s focus is on electrification and connected vehicles, hybrid vehicles, low carbon fuels and fuel cell technology for commercial freight applications. Between the CEO, CTO and other senior executives, presentation on the progress and strategies for advanced vehicles were provided to the Board of Directors at each Board Meeting. In 2019, the CEO made a climate-related decision to spend $227 million, which is 70% of PACCAR’s overall 2019 R&D spending, on advanced vehicle research and development to reduce product-use greenhouse gas emissions. |

## **C1.1b**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Frequency with which climate-related issues are a scheduled agenda item** | **Governance mechanisms into which climate-related issues are integrated** | **Scope of board-level oversight** | **Please explain** |
| Scheduled – all meetings | Reviewing and guiding strategy  Reviewing and guiding major plans of action  Reviewing and guiding business plans | <Not Applicable> | Advanced vehicle technology such as hybrids, alternative low carbon fuels and electric vehicles is an agenda topic at each Board meeting, including climate-related issues. In this way, the Board of Directors provides guidance and oversight to PACCAR's overall climate change strategy related to advanced vehicle technology and low carbon transition planning. |
| Other, please specify (Every other year) | Monitoring and overseeing progress against goals and targets for addressing climate-related issues | <Not Applicable> | Product use related greenhouse gas emissions regulations and goals are discussed every two years during Board level business strategy reviews. In this way, the Board of Directors monitors and oversees progress toward greenhouse gas emissions reduction targets for product use. |
| Sporadic - as important matters arise | Monitoring and overseeing progress against goals and targets for addressing climate-related issues | <Not Applicable> | Board level presentation of facility related greenhouse gas emissions and goals is scheduled as needed. In this way, the Board of Directors monitors and oversees progress toward greenhouse gas emissions reduction targets for facilities. |

## **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)** | **Reporting line** | **Responsibility** | **Coverage of responsibility** | **Frequency of reporting to the board on climate-related issues** |
| Other C-Suite Officer, please specify (Chief Technology Officer) | <Not Applicable> | Both assessing and managing climate-related risks and opportunities | <Not Applicable> | 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).**

PACCAR's Chief Technology Officer reports directly to the CEO. PACCAR's CEO is a member of the Board of Directors. Responsibility for strategic climate related issues has been assigned to the CTO because this role is also responsible for PACCAR’s global information technology, innovation and technical centers in Silicon Valley and Washington State, and PACCAR’s Engine and Powertrain groups and for PACCAR’s advancement in electrification and connected vehicles, hybrid vehicles, low carbon fuels and fuel cell technology for commercial freight applications. The CTO monitors strategic climate-related issues through regulatory liaison work and collaboration with both existing suppliers and new advanced vehicle technology developers. This makes the CTO uniquely qualified to lead PACCAR’s climate-related program for next generation products including strategy and planning for low carbon transitioning, scenario analysis and product-use greenhouse gas emissions goals. The CTO reports progress and strategies for advanced vehicles to the Board of Directors at some Board meetings including climate-related issues and progress. In addition, the CTO reports significant progress with advanced technology vehicles such as hybrids, alternative low carbon fueled and electric vehicles to the CEO, who is a member of the Board of Directors, on a weekly basis including progress in strategic climate-related issues.

## **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 |  |

## **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 inventivized** | **Comment** |
| Corporate executive team | Monetary reward | Other (please specify) (Executive bonuses are based on attainment of goals, which can include reduction of facility and product use greenhouse gas emissions.) | Executive bonuses are based on attainment of goals, which can include reduction of energy use, reduction of facility greenhouse gas emissions, development of strategy and business plans to reduce greenhouse gas emissions from facilities and product use. |

## **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 | 0 | 3 |  |
| Medium-term | 4 | 10 |  |
| Long-term | 11 | 30 |  |

## **C2.1b**

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

Substantial financial and strategic impacts to PACCAR’s business are discussed within applicable SEC documents such as the annual 10k report. PACCAR defines substantive financial or strategic impacts in terms of generally accepted accounting principles (GAAP). For example within PACCAR’s 2019 10k report, substantive or significant impacts are defined as those that could have a material negative impact on PACCAR’s financial condition or results of operations. PACCAR’s 2019 10k report discloses that financial impacts less than $2 million will not have a material impact on the results of operations. Therefore, potential impacts above $2 million may be considered substantial. The 10k report also identifies several substantial climate-related risk factors such as potentially higher research and development and manufacturing costs due to changes in government requirements for its products, including changes in emissions, fuel, greenhouse gas or other regulations. In addition, the 2019 PACCAR 10k discloses that impacts from natural disasters and calamities, such as from extreme weather events, may increase the cost of doing business and disrupt PACCAR’s suppliers operations.

## **C2.2**

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

### **Value chain stage(s) covered**

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**

PACCAR's risk management process identifies, assesses and responds to potential material impacts to PACCAR's business including the risks and opportunities of changes in customer demand for advanced vehicle technology such as vehicle electrification and low carbon fuels. Risks and opportunities are identified and assessed on a global basis by experienced internal management at semi-annual meetings, and through external stakeholder engagement including frequent collaborations with partners, suppliers, government agencies and customers to identify risks from increasing regulations, changing customer preferences, new disruptive technology and public policy support for low carbon transportation infrastructure such as vehicle electrification and low carbon fuels. An example of identification and assessment of potential material impacts is provided in PACCAR's 2019 10K report which discloses that demand for commercial vehicles may be affected by the introduction of new vehicles and technologies by PACCAR or its competitors. After potential impacts are identified and assessed, they are reported to PACCAR’s Board of Directors. In this way, timely strategic decisions can be made on appropriate responses. In 2019, PACCAR made strategic decisions on factory upgrades and product development in allocating $227 million to climate-related research and development, and $744 million on capital projects.

### **Value chain stage(s) covered**

Upstream

### **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**

PACCAR's risk management process identifies, assesses and responds to material impacts to PACCAR's business. For example, both supply chain and regulatory risks are formerly identified and evaluated relative to annual financial reporting of material risks in PACCAR's 10k form. Both physical and transitional risks are evaluated. An example of physical risks, PACCAR's 2019 10k reports that [Situation] unexpected events such as natural disasters may increase the cost of doing business and disrupt supplier operations as a material risk. Climate related extreme weather events can cause power outages, floods, landslides, and damaged facility and transportation infrastructure such as buildings, roads, bridges, and rail tracks. The risk is that power outages, facility and infrastructure damage from extreme weather events such as hurricanes, tornadoes and flooding can disrupt PACCAR's supply chain. For example in 2018 Hurricane Florence disrupted deliveries of truck parts from several of PACCAR’s suppliers for an extended period due to flooding-related shutdowns. [Task] The response to material risks represent opportunities for PACCAR to increase market share by evaluating the materiality of both chronic and acute climate-related flood risks and opportunities for anticipating and managing both operations and the supply chain resiliency. [Action]As an example of the risk management process, supply chain related risks are identified and assessed on a global basis by experienced internal management at semi-annual meetings, and through external supplier engagement including frequent collaborations. As an example, in response to the supply chain disruption caused by Hurricane Florence, PACCAR’s Kenworth, Peterbilt and DAF factories, and PACCAR’s purchasing and supplier management teams made an orchestrated effort to address supplier issues quickly by managing off-line production flow in PACCAR's factories to match parts shortages. In addition, Tier 1 suppliers invested in additional capacity and worked closely with Tier 2 suppliers to meet factory delivery requirements. [Result] The resulting supplier related opportunities are identified and evaluated globally as strategic responses to identified and material risks, which are reported to the Board of Directors quarterly as part of strategic decisions such as allocation of capital spending on supply chain development and resiliency. For example, PACCAR’s quick operational response and supplier engagement related to Hurricane Florence related supply chain disruption normalized the situation within four months of the weather event. As an example of transitional risk, [Situation] the global regulation of greenhouse gas emissions and zero emissions commercial vehicles can require significant product development costs and timelines to reduce product use greenhouse gas emissions. [Task] PACCAR must track and participate in global regulatory and policy development, engage in advanced vehicle design trends, invest in the development of commercially viable products and operations, and manage supplier readiness related to the future of commercial vehicles to retain and grow revenues and market share. [Action] PACCAR participates in trade associations such as Engine Manufacturers Association (EMA) and the European Automobile Manufacturer’s Association (ACEA), and engages with suppliers in advance vehicle technology such as a zero emissions hydrogen fuel cell electric vehicle collaboration with Toyota. [Result] As a result of PACCAR’s focus on compliance with regulations, and meeting and exceeding customer expectations related to advance commercial vehicles, PACCAR’s 2019 truck segment revenues increased by almost 10% over 2018, with a 10% increase of units sold in the US and Canada. In addition, PACCAR’s product use emissions in the US and Canada decreased by 2.8% from a 2018 base year. This includes both mandatory and voluntary emissions savings as demonstrated by the 23% increase in new CO2 emissions credits earned by PACCAR in 2019 in the US and Canada compared with 2018. In addition, PACCAR retired 61,683 tonnes of product use CO2 credits in 2019 as they were in excess of what was needed for regulatory compliance.

### **Value chain stage(s) covered**

Direct operations

### **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**

PACCAR's risk management process identifies, assesses and responds to potential material impacts to PACCAR's business including operational risks and opportunities due to higher or lower operational costs, respectively. Potential operationally related impacts are identified and assessed on a global basis by experienced internal management at semi-annual meetings, and through external engagement in trade associations and direct agency collaborations. An example of identification and assessment of potential material impacts is in PACCAR's 2019 10k report which discloses that operations are subject to laws and regulations that impose significant compliance costs, and PACCAR could experience higher research and development and manufacturing costs due to changes in government requirements for its products, including emissions, fuel, greenhouse gas or other regulations. After potential impacts are identified and assessed they are reported to PACCAR’s Board of Directors. In this way, timely strategic decisions are made on appropriate responses such as allocation of capital and research and development spending on operational efficiency and resiliency. The response to material risks represent opportunities for PACCAR to increase market share and revenue, and to lower operating expenses including anticipating and managing legal requirements. In 2019, PACCAR made strategic decisions on factory upgrades and product development in allocating $227 million to climate-related research and development and $744 million on capital projects.

## **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 | Regulatory requirements are a strategic risk for PACCAR and are always evaluated because compliance with all applicable regulations for manufacturing and use of commercial vehicles must be achieved to increase market share and revenues and to avoid fines. Regulatory risks are identified and assessed on a global basis by experienced internal management at semi-annual meetings, and through external stakeholder engagement including frequent collaborations with partners, suppliers, government agencies and customers to identify risks from increasing regulations, changing customer preferences, new disruptive technology and public policy support for low carbon transportation infrastructure such as vehicle electrification and low carbon fuels. Product or transition related risks including regulations are identified and evaluated globally, and reported to the Board of Directors quarterly. Evaluation of regulatory risks includes determination of the magnitude of the financial risk. The significance of the financial impact of identified risks including climate-related risk is based on probabilities of both the likelihood of occurrence and potential financial impacts, and the materiality and estimability of probable risks in accordance with generally accepted accounting practices. The financial impact of climate-related risk is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. For example, product level regulation by EPA of greenhouse gas emissions from PACCAR’s nameplate Kenworth and Peterbilt heavy duty vehicles (see Federal Register Vol 76 No 179) sold in the U.S. is of strategic importance to PACCAR in the development of vehicles and in providing customers with operationally efficient and compliant trucks. |
| Emerging regulation | Relevant, always included | Emerging regulatory requirements are a strategic risk for PACCAR and are always evaluated because compliance with all applicable regulations for manufacturing and use of commercial vehicles must be achieved to increase market share and revenues and to avoid fines. Regulatory risks are identified and assessed on a global basis by experienced internal management at semi-annual meetings, and through external stakeholder engagement including frequent collaborations with partners, suppliers, government agencies and customers to identify risks from increasing regulations, changing customer preferences, new disruptive technology and public policy support for low carbon transportation infrastructure such as vehicle electrification and low carbon fuels. Product or transition related risks including emerging regulations are identified and evaluated globally, and reported to the Board of Directors quarterly. Evaluation of regulatory risks includes determination of the magnitude of the financial risk. The significance of the financial impact of identified risks including climate-related risk is based on probabilities of both the likelihood of occurrence and potential financial impacts, and the materiality and estimability of probable risks in accordance with generally accepted accounting principles. The financial impact of climate-related risk is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. PACCAR participates in industry groups and collaborates directly with government agencies to track and help craft regulations related to road freight and manufacturing operations. For example, two of PACCAR’s nameplates, Kenworth and Peterbilt, collaborated with the Port of Long Beach California, Transpower and the California Air Resources Control Board to develop all electric models to meet potential new requirements for zero emissions port logistics. |
| Technology | Relevant, always included | The strategic technology risk for PACCAR is not providing our customers with the highest quality, most advanced, and lowest operating cost vehicles in the market and thereby reducing market share and revenues. Technology risks are identified and assessed on a global basis by experienced internal management at semi-annual meetings, and through external stakeholder engagement including frequent collaborations with partners, suppliers, government agencies and customers to identify risks from increasing regulations, changing customer preferences, new disruptive technology and public policy support for low carbon transportation infrastructure such as vehicle electrification and low carbon fuels. Product or transition related risks including new technology are identified and evaluated globally, and reported to the Board of Directors quarterly. Evaluation of technology risks includes determination of the magnitude of the financial risk. The significance of the financial impact of identified risks including climate-related risk is based on probabilities of both the likelihood of occurrence and potential financial impacts, and the materiality and estimability of probable risks in accordance with generally accepted accounting practices. The financial impact of climate-related risk is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. For example, PACCAR's goal is to provide our customers with the most technologically advanced vehicles, such as PACCAR’s nameplate DAF new CF and XF models with highly efficient transmissions and rear axles. Along with a new compact after-treatment system, sophisticated software and aerodynamic optimization, the new DAF CF and XF models reduce fuel consumption and CO2 emissions by 7% compared with previous year models. |
| Legal | Relevant, always included | PACCAR's core values include legal compliance in all aspects of the business. Legal risks are identified and assessed on a global basis by experienced internal management at semi-annual meetings, and through external stakeholder engagement including frequent collaborations with partners, suppliers, government agencies and customers to identify risks from increasing laws and regulations, changing customer preferences, new disruptive technology and public policy support for low carbon transportation infrastructure such as vehicle electrification and low carbon fuels. Product or transition related risks including legal compliance are identified and evaluated globally, and reported to the Board of Directors quarterly. Evaluation of regulatory risks includes determination of the magnitude of the financial risk. The significance of the financial impact of identified risks including climate-related risk is based on probabilities of both the likelihood of occurrence and potential financial impacts, and the materiality and estimability of probable risks in accordance with generally accepted accounting practices. The financial impact of climate-related risk is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. For example, the risk of legal non-compliance with product related regulations from EPA of greenhouse gas emissions from PACCAR’s nameplate Kenworth and Peterbilt heavy duty vehicles (see Federal Register Vol 76 No 179) sold in the U.S. is of strategic importance to PACCAR in the development of vehicles and in providing customers with operationally efficient and compliant trucks. Facility compliance with applicable emissions laws and regulations including greenhouse gas emissions trading and taxation is both a cost of doing business and an opportunity to reduce costs. Legal compliance is a part of strategic planning related to advance vehicle technology and facility operations. |
| Market | Relevant, always included | The strategic market risk for PACCAR is not meeting customer expectations for product quality, advanced vehicle technology, operational efficiency and lower environmental impact, and thereby reducing market share and revenues. Market risks are identified and assessed on a global basis by experienced internal management at semi-annual meetings, and through external stakeholder engagement including frequent collaborations with partners, suppliers, government agencies and customers to identify risks from increasing regulations, changing customer preferences, new disruptive technology and public policy support for low carbon transportation infrastructure such as vehicle electrification and low carbon fuels. Product or transition related market risks are identified and evaluated globally, and reported to the Board of Directors quarterly. Evaluation of market risks includes determination of the magnitude of the financial risk. The significance of the financial impact of identified risks including climate-related risk is based on probabilities of both the likelihood of occurrence and potential financial impacts, and the materiality and estimability of probable risks in accordance with generally accepted accounting practices. The financial impact of climate-related risk is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. PACCAR's goal is to increase market share by providing customers with industry leading trucks with reduced operating costs and lower environmental impacts including emissions, such as PACCAR’s nameplate DAF new CF and XF models with highly efficient transmissions and rear axles. Along with a new compact after-treatment system, sophisticated software and aerodynamic optimization, the new DAF CF and XF models reduce fuel consumption and CO2 emissions by 7% compared with previous year models. |
| Reputation | Relevant, always included | The strategic reputational risk for PACCAR is not maintaining a reputation for product quality, advanced vehicle technology, operational efficiency and low environmental impact, and thereby reducing market share and revenues. Reputational risks are identified and assessed on a global basis by experienced internal management at semi-annual meetings, and through external stakeholder engagement including frequent collaborations with partners, suppliers, government agencies and customers to identify risks from stakeholder opinion of PACCAR’s reputation, increasing regulations, changing customer preferences, new disruptive technology and public policy support for low carbon transportation infrastructure such as vehicle electrification and low carbon fuels. Product or transition related reputational risks are identified and evaluated globally, and reported to the Board of Directors quarterly. Evaluation of reputational risks includes determination of the magnitude of the financial risk. The significance of the financial impact of identified risks including climate-related risk is based on probabilities of both the likelihood of occurrence and potential financial impacts, and the materiality and estimability of probable risks in accordance with generally accepted accounting practices. The financial impact of climate-related risk is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. For example, PACCAR’s reputation for quality, advanced vehicles with lower operating costs and lower environmental impacts was enhanced with the introduction of PACCAR’s nameplate DAF new CF and XF models with highly efficient transmissions and rear axles. Along with a new compact after-treatment system, sophisticated software and aerodynamic optimization, the new DAF CF and XF models reduce fuel consumption and CO2 emissions by 7% compared with previous year models. |
| Acute physical | Relevant, always included | Extreme weather events can cause power outages, floods, landslides, and damage facility and transportation infrastructure such as buildings, roads, bridges and rail tracks. The risk is that power outages, facility and infrastructure damage from extreme weather events such as hurricanes and flooding can immediately disrupt PACCAR's operations, as well as PACCAR’s suppliers and customers. One example of acute physical risks for PACCAR is the risk of a hurricane damage, which could disrupt the supply chain, resulting in delays in production and reduced profits. For example, in September of 2018 Hurricane Florence disrupted deliveries of parts from several of PACCAR's suppliers in the southeastern region of the United States for an extended period due to flooding-related shutdowns. Weather and infrastructure related risks including acute physical risks, such as hurricanes, are identified and assessed on a global basis through PACCAR’s business continuity evaluation and planning process. In addition, third party reviews of physical risks to PACCAR facilities is performed periodically. Evaluation of acute physical risks includes determination of the magnitude of the financial risk. The significance of the financial impact of identified risks including climate-related risk is based on probabilities of both the likelihood of occurrence and potential financial impacts, and the materiality and estimability of probable risks in accordance with generally accepted accounting principles. The financial impact of climate-related risk is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. |
| Chronic physical | Relevant, sometimes included | Weather and infrastructure related risks including chronic physical risks are identified and assessed on a global basis through PACCAR’s business continuity evaluation and planning process. Also, third party reviews of physical risks to PACCAR facilities is performed periodically. Evaluation of chronic physical risks includes determination of the magnitude of the financial risk. The significance of the financial impact of identified risks including climate-related risk is based on probabilities of both the likelihood of occurrence and potential financial impacts, and the materiality and estimability of probable risks in accordance with generally accepted accounting practices. The financial impact of climate-related risk is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. For example, one of PACCAR’s chronic physical risks includes a potential rise in sea levels over the next century, which could disrupt operations of our largest manufacturing plant located in the Netherlands. Fifty percent of the Netherlands is less than one meter above sea level and 17% is below sea level, and as a result will be a region at risk of climate related flooding and storm surges. |

## **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?**

Upstream

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

|  |  |
| --- | --- |
| Acute physical | Increased severity and frequency of extreme weather events such as cyclones and floods |

### **Primary potential financial impact**

Increased direct costs

### **Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

### **Company-specific description**

Extreme weather events can cause power outages, floods, landslides, and damage facility and transportation infrastructure such as buildings, roads, bridges and rail tracks. The risk is that power outages, facility and infrastructure damage from extreme weather events such as hurricanes, tornadoes and flooding can immediately disrupt PACCAR's supply chain. For example, in September of 2018 Hurricane Florence disrupted deliveries of parts from several of PACCAR's suppliers in the southeastern region of the United States for an extended period due to flooding-related shutdowns. The National Weather Service reported that Hurricane Florence "was the wettest tropical cyclone to hit the Carolinas." Impacts included "thousands of downed trees which caused widespread power outages, a record breaking storm surge of 9 to 13 feet and devastating rainfall of 20 to 30 inches, which produced catastrophic and life-threatening flooding." As a result, supply chain disruption temporarily delayed production and increased operating costs.

### **Time horizon**

Short-term

### **Likelihood**

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)**

25600000

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

<Not Applicable>

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

<Not Applicable>

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

The potential financial impact of climate-related physical risk is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. The potential financial implication depends upon the duration of the interruption of operations. For example, in 2018 prolonged flooding from Hurricane Florence disrupted PACCAR’s supply chain resulting in a temporary production slowdown and higher costs of materials and labor. The financial impact is difficult to quantify, but assuming a potential cost impact of 0.1% of revenue results in a cost impact of $25.6 million in 2019.

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

25600000

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

Weather and infrastructure related risks are managed not only through PACCAR’s business continuity evaluation and planning process, but as a normal part of managing PACCAR's supply chain. For example, [Situation] in 2018 in response to parts shortages due to Hurricane Florence and [Task] in order to maintain or grow revenue and market share by managing supply chain disruption, [Action] PACCAR's Kenworth, Peterbilt and DAF factories, and purchasing and supplier management teams made an orchestrated effort to address supplier issues quickly and to manage off-line production flow in PACCAR factories to match parts shortages. In addition, Tier 1 suppliers invested in additional capacity and worked closely with Tier 2 suppliers to meet factory delivery requirements. [Result] The situation was normalized within four months of the extreme weather event, and that year (2018) PACCAR achieved the second highest Class 8 market share in its history and a record high market share of medium-duty in the US and Canada. Management of weather related risks is part of PACCAR's standard operating costs. Specific costs applicable to managing events of supply chain disruption are difficult to calculate. However, assuming a potential cost impact of 0.1% of revenue results in a cost impact of $25.6 million in 2019.

### **Comment**

### **Identifier**

Risk 2

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

Upstream

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

|  |  |
| --- | --- |
| Current regulation | Mandates on and regulation of existing products and services |

### **Primary potential financial impact**

Increased direct costs

### **Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

### **Company-specific description**

New regulations such as the U.S. EPA's Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium and Heavy Duty Engines and Vehicles as found in Federal Register vol 78 No 116 require PACCAR to improve fuel efficiency and reduce greenhouse gas emissions from the commercial vehicles and engines sold in the US. Canada has similar regulations. The risk for PACCAR is the potential increased costs due to fines if Kenworth and Peterbilt vehicles and engines are not compliant with greenhouse gas regulatory standards in the U.S. However, for PACCAR in 2019, improvements were made to Kenworth and Peterbilt vehicles to not only meet but exceed the greenhouse gas emissions standards in 2019 resulting in greenhouse gas credits rather than fines.

### **Time horizon**

Short-term

### **Likelihood**

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)**

234000000

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

<Not Applicable>

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

<Not Applicable>

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

The financial impact of climate-related regulation risk is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. For example, the potential financial implications for non-compliant vehicles and engines include the loss of sales and/or fines and penalties. Recent penalties on a competitor's engines that exceeded EPA's engine emissions standards amounted to about $2,000 per engine. If the same penalty was applied to PACCAR’s 2019 vehicle sales in the US and Canada, that would be a cost of $234,000,000 due to non-compliance penalties, which is a substantive financial impact.

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

227000000

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

[Situation] The risk that new greenhouse gas regulation of products could adversely and substantially impact revenue, market share and operating costs is [Task] managed through continuous improvement of fuel efficiency, alternative and low carbon fuel compatible products including hybrid vehicles. The cost to manage the product regulatory risk includes product research and development, policy engagement and compliance testing. For example, [Action] PACCAR spent $227 million on advanced vehicle technology research and development in 2019 and launched many new products that offer better fuel economy and lower greenhouse gas emissions. [Result] PACCAR’s research and development spending resulted in market leading development of alternative powertrains including battery-electric, fuel cell and hybrid commercial vehicles. PACCAR brands DAF, Peterbilt and Kenworth are field-testing these technologies in North America and Europe, and have reduced fuel consumption and CO2 emissions up to 15 percent compared with 2014 vehicles. In addition, in 2019, improvements were made to Kenworth and Peterbilt vehicles to not only meet, but also exceed the greenhouse gas emissions standards in 2019 resulting in greenhouse gas credits rather than fines.

### **Comment**

### **Identifier**

Risk 3

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

Downstream

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

|  |  |
| --- | --- |
| Market | Changing customer behavior |

### **Primary potential financial impact**

Decreased revenues due to reduced demand for products and services

### **Climate risk type mapped to traditional financial services industry risk classification**

<Not Applicable>

### **Company-specific description**

Customers may be increasingly interested in environmentally innovative vehicles and engines that can reduce their carbon footprint and reduce their operating costs by using less fuel. The risk to PACCAR is that changing customer preferences could lead to lower demand and lower sales if Kenworth, Peterbilt and DAF commercial vehicles do not meet changing customer expectations for vehicles and engines with improved fuel economy and reduced greenhouse gas emissions. However, PACCAR invests in advanced vehicle research and development and operational upgrades, and continuously innovates and improves the performance of PACCAR vehicles thereby meeting and exceeding customer expectations, increasing market demand and revenues. For example, Kenworth and Peterbilt are participating in the Department of Energy’s SuperTruck II program to demonstrate 100 percent improvement in freight efficiency over 2009 equivalent product and achieve 55 percent in engine brake efficiency to improve fuel economy, and reduce costs and emissions including greenhouse gas emissions.

### **Time horizon**

Medium-term

### **Likelihood**

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)**

256000000

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

<Not Applicable>

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

<Not Applicable>

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

The potential financial impact of climate-related transition risk such as shifting customer preferences is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. For example, a 1% drop in sales due to customer dissatisfaction with environmental and fuel economy performance of PACCAR's vehicles would amount to $256 million decrease in revenue based on PACCAR’s 2019 earnings, which is a substantive financial impact.

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

227000000

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

[Situation] PACCAR manages the risk of shifting customer preferences, which could substantially impact PACCAR’s revenues and market share by [Task] continuing to expand advanced technology truck offerings, which exceed customer performance expectations through innovative research and development, partnerships and collaboration. [Action] PACCAR spent $227 million on advanced vehicle technology research and development in 2019 and launched many new products that offer better fuel economy and lower greenhouse gas emissions. In 2019, PACCAR's strategic decision was to spend $227 million, or 70% of the overall research and development spending, on climate related product innovation to reduce greenhouse gas emissions and improve fuel economy. As an example of PACCAR's strategic focus on improving fuel economy, in 2019 PACCAR invested in the further development of battery-electric, hybrid and hydrogen fuel cell vehicles. [Result] Kenworth, Peterbilt and DAF are field-testing these technologies with customers and plan to deliver production battery-electric truck models in the next 12 - 18 months.

### **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.**

### **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**

PACCAR can increase revenue by understanding and exceeding customer’s shifting preferences for environmentally innovative vehicles and engines that can reduce their carbon footprint and their operating costs by using less fuel. The opportunity for PACCAR is to increase revenues by collaborating with customers in developing advanced, low emission commercial vehicles that improve fuel economy and reduce greenhouse gas emissions and customer operating costs. For example, Kenworth and customer, UPS, continue to collaborate on the DOE SuperTruck II Program. Kenworth is developing important advancements in Class 8 truck aerodynamics, engine and powertrain efficiencies under the SuperTruck II program with the Vehicle Technologies Office of the U.S. Department of Energy (DOE). Goals for the program include the demonstration of a greater than 100 percent improvement in freight efficiency over 2009 equivalent product, and achieving 55 percent brake thermal engine efficiency using the industry-leading PACCAR MX engine. For the SuperTruck II project, UPS will provide guidance on its drive-and-duty cycles to optimize SuperTruck II performance. UPS will also offer advice on the commercial feasibility and driver acceptance of technologies developed under SuperTruck II. This important program is designed to produce advancements that will benefit fleets and truck operators with future reductions in fuel usage and emissions.

### **Time horizon**

Short-term

### **Likelihood**

Likely

### **Magnitude of impact**

Medium

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

Yes, a single figure estimate

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

256000000

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

<Not Applicable>

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

<Not Applicable>

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

The financial impact of the climate-related opportunity to increase revenue by meeting the increasing demand for lower emissions vehicles is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. The financial impact of new low emission, heavy-duty vehicles, such as the Peterbilt Model 520 that significantly reduces customer air emissions including greenhouse gas emissions is substantive and a key part of PACCAR's business strategy to increase revenues. For example, a 1% increase in sales due to the development of low emission, more fuel-efficient vehicles results in $256 million in additional revenue based on PACCAR’s 2019 earnings, which is a substantive financial impact.

### **Cost to realize opportunity**

227000000

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

[Situation] Demand for lower emissions vehicles can be driven by shifting customer preferences. For example, customers may be shifting demand to environmentally innovative vehicles and engines that can reduce their carbon footprint and their operating costs by using less fuel. [Task] PACCAR’s strategy is to increase revenue by developing low emission, advanced commercial vehicles that improve fuel economy and reduce greenhouse gas emissions and customer operating costs through customer collaboration, research and development and innovation. [Action] PACCAR's research and development spending decisions are strategically focused on product innovation including reducing greenhouse gas emissions and improving fuel economy. PACCAR spent $227 million on advanced vehicle technology research and development in 2019 and launched many new products that offer better fuel economy and lower greenhouse gas emissions. For example, Kenworth and customer, UPS, continue to collaborate on the DOE SuperTruck II Program. Kenworth is developing important advancements in Class 8 truck aerodynamics, engine and powertrain efficiencies under the SuperTruck II program with the Vehicle Technologies Office of the U.S. Department of Energy (DOE). Goals for the program include the demonstration of a greater than 100 percent improvement in freight efficiency over 2009 equivalent product, and achieving 55 percent brake thermal engine efficiency using the industry-leading PACCAR MX engine. [Results] As a result of PACCAR’s focus on meeting and exceeding customer expectations for advanced, low emissions, commercial vehicles, PACCAR’s 2019 truck segment revenues increased by almost 10% over 2018, with a 10% increase of units sold in the US and Canada. In addition, PACCAR’s product use emissions in the US and Canada decreased by 2.8% from a 2018 base year. This includes both mandatory and voluntary emissions savings as demonstrated by the 23% increase in new CO2 emissions credits earned by PACCAR in 2019 in the US and Canada compared with 2018. PACCAR also retired 61,683 tonnes of product use CO2 credits in 2019 as they were in excess of what was needed for regulatory compliance.

### **Comment**

### **Identifier**

Opp2

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

Upstream

### **Opportunity type**

Products and services

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

Development of new products or services through R&D and innovation

### **Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

### **Company-specific description**

PACCAR can increase revenues by developing compliant, innovative products through research and development, and supplier partnerships and collaborations. New regulations such as the U.S. EPA's Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium and Heavy Duty Engines and Vehicles as found in Federal Register Vol 78 No 116 require PACCAR to improve fuel efficiency and reduce greenhouse gas emissions from the commercial vehicles and engines sold in the US. Canada has similar regulations. An example of PACCAR’s product enhancement through research and development and supplier collaborations includes PACCAR’s multi-year collaboration with California’s Climate Investments and Low Carbon Transition programs and supplier, TransPower, to develop and commercialize zero and near-zero emissions trucks. Phase I featured Kenworth’s CNG range-extended plug-in hybrid electric trucks developed under the SCAQMD/DOE ZECT 2 program, as well as Peterbilt/TransPower battery design for increased capacity at the same system weight to increase electric range. The Peterbilt electric Model 520 is equipped with a 400 horsepower TransPower Electric Drive System and 352 KWh of energy storage, which is enough power to drive 80 miles a day and emits zero emissions in a quiet manner, which is ideal for neighborhood communities where these trucks operate. PACCAR's research and development spending decisions are strategically focused on compliance with greenhouse gas and other regulations, and product innovation including reducing greenhouse gas emissions and improving fuel economy. PACCAR spent $227 million on advanced vehicle technology research and development in 2019 and launched many new products that are compliant with regulations and offer better fuel economy and lower greenhouse gas emissions.

### **Time horizon**

Medium-term

### **Likelihood**

Likely

### **Magnitude of impact**

Medium

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

Yes, a single figure estimate

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

256000000

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

<Not Applicable>

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

<Not Applicable>

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

The financial impact of the climate-related opportunity to increase revenues by developing new products that anticipate increasing demand is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. For example, a 1% increase in sales due to increased demand for PACCAR’s advance vehicles such as Peterbilt's all electric Model 520, results in $256 million in additional revenue based on 2019 financial results, which is a substantive financial impact.

### **Cost to realize opportunity**

227000000

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

[Situation] Regulation of greenhouse gas emissions from commercial heavy-duty trucks can impact PACCAR’s revenues by requiring specialized technology and increasing the costs of manufacturing, selling and servicing compliant vehicles. For example, new regulations such as the U.S. EPA's Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium and Heavy Duty Engines and Vehicles as found in Federal Register Vol 78 No 116 require PACCAR to improve fuel efficiency and reduce greenhouse gas emissions from the commercial vehicles and engines sold in the US. Canada has similar regulations. [Task] PACCAR's supplier collaboration, and research and development spending decisions must be strategically focused on the increasing demand for product innovations that reduce greenhouse gas emissions and improve fuel economy. [Action] In 2019, PACCAR spent $227 million, which is 70% of PACCAR’s overall research and development spending in 2019, on climate-related advanced vehicle technology research and development and supplier collaboration. For example, in 2019, PACCAR’s Kenworth Division collaborated with Toyota Motor North America to develop ten zero-emission Kenworth T680s powered by Toyota supplied hydrogen fuel cell electric powertrains as part of a larger program to put fuel cell electric tractors, hydrogen fueling infrastructure, and zero emissions cargo handling equipment into operation in 2020. The Kenworth T680s with the Toyota hydrogen fuel cell electric powertrains combine hydrogen gas and air to produce electricity and will have a range of over 300 miles under normal operating conditions. [Results] Because of PACCAR’s focus on supplier partnerships, collaboration, and research and development spending on product innovation related to advance and compliant commercial vehicles, PACCAR launched many new products that offer better fuel economy and lower greenhouse gas emissions. In 2019, PACCAR’s Scope 3 product-use emissions in the US and Canada decreased by 2.8% from a 2018 base year. Also, PACCAR’s 2019 truck segment revenues increased by almost 10% over 2018, with a 10% increase of units sold in the US and Canada.

### **Comment**

### **Identifier**

Opp3

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

Direct operations

### **Opportunity type**

Products and services

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

Development of climate adaptation, resilience and insurance risk solutions

### **Primary potential financial impact**

Increased revenues resulting from increased production capacity

### **Company-specific description**

PACCAR can increase revenues by optimizing production capacity through business continuity and resiliency planning to respond to climate related physical risks of extreme weather damage. Extreme weather events can cause power outages, floods, landslides, and damage facility and transportation infrastructure such as buildings, roads, bridges and rail tracks. By understanding the potential impacts to production and distribution systems, PACCAR can mitigate impacts to operations and optimize recovery, thereby increasing resiliency and revenues. For example, increased climate related weather calamities such as the prolonged flooding from Hurricane Florence in 2018 can temporarily slow production by significantly disrupting supply chain distribution, as it did for PACCAR in the 3rd Qtr 2018. PACCAR manages weather and infrastructure related opportunities not only through a business continuity evaluation and planning process, but also as a normal part of managing PACCAR’s supply chain. In the 3rd Qtr 2018, PACCAR’s Kenworth, Peterbilt and DAF factories, and purchasing and supplier management teams made an orchestrated effort to address Hurricane Florence related supplier issues quickly and to manage off-line production flow in PACCAR factories to match parts shortages. As a result of PACCAR’s ability to optimize production capacity, in 2018 PACCAR achieved the second highest Class 8 market share in its history and a record high market share of medium-duty in the US and Canada and increased the contribution of truck manufacturing to revenue by 1%.

### **Time horizon**

Short-term

### **Likelihood**

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)**

256000000

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

<Not Applicable>

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

<Not Applicable>

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

The financial impact of the climate-related opportunity to increase revenues by optimizing production capacity through business continuity and resiliency planning is based on key assessment aspects including the proportion of business units affected, the size of the impact on those business units and the potential shareholder or customer concern. A substantive financial impact could occur due to a large change in one of these key aspects or a small change in all three aspects. For example, PACCAR's quick and effective response to Hurricane Florence resulted in optimized production capacity and in PACCAR achieving its second highest market share for Class 8 and a record market share for medium-duty vehicles in the US and Canada in 2018. In addition, PACCAR’s truck segment accounted for 77% of 2018 revenues compared with 76% in 2017. If that 1% increase in revenue was due to supply chain resiliency in 2019, the financial impact would be $256 million of additional revenue, which is a substantive financial impact. This is calculated by multiplying PACCAR’s 2019 revenue of $25.6 billion by 1%.

### **Cost to realize opportunity**

25600000

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

[Situation] PACCAR's strategy for realizing opportunities to increase resiliency, revenues and market share is to optimize operational flexibility, production capacity and enhance supplier resiliency. [Task] In the event of extreme weather damage to supply chain distribution and PACCAR’s operations, PACCAR’s ability to shift production and parts operations to other geographic areas, and manage off-line production at facilities, which are not impacted, is key to PACCAR's weather-related resiliency. [Action] As an example, in 2018 in response to parts shortages due to Hurricane Florence, PACCAR’s Kenworth, Peterbilt and DAF factories, and purchasing and supplier management teams made an orchestrated effort to address supplier issues quickly and to manage off-line production flow in PACCAR's factories to match parts shortages. In addition, Tier 1 suppliers invested in additional capacity and worked closely with Tier 2 suppliers to meet factory delivery requirements. [Result] The situation was normalized within four months of the extreme weather event, and that year (2018) PACCAR achieved the second highest Class 8 market share in its history and a record high market share of medium-duty in the US and Canada, and increased the contribution of truck manufacturing to revenue by 1%. Management of weather related risks is part of PACCAR's standard operating costs. Specific costs applicable to managing events of supply chain disruption are difficult to calculate. However, based on PACCAR’s experience with Hurricane Florence in 2018, the potential cost impact could be 0.1% of revenue, which in 2019 results in a cost impact of $25.6 million.

### **Comment**

## **C3. Business Strategy**

## **C3.1**

### **(C3.1) Have climate-related risks and opportunities influenced your organization’s strategy and/or financial planning?**

Yes, and we have developed a low-carbon transition plan

## **C3.1a**

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

Yes, qualitative

## **C3.1b**

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

|  |  |
| --- | --- |
| **Climate-related scenarios and models applied** | **Details** |
| IEA B2DS | As part of the internal discussion of science based targets, the IEA B2DS climate-related scenario is being used to evaluate both facility related and product use low carbon pathways. Initially the timeline being evaluated is between a baseline year of 2018 through 2030. The facility related scenario is based on Energy Technology Perspectives (ETP 2017) including the predicted share of electricity in the energy mix, carbon intensity of electricity, energy efficiency and best available technology opportunities, decreases in fossil fuel use and the carbon intensity due to fuel switching and the reduction of carbon intensity due to increased use of renewables. The product use scenario is based on the low carbon transition pathway in the IEA 2017 publication "The Future of Trucks" including predictions of lower transport related energy demand due to increased logistical efficiency, transportation energy efficiency improvements and fuel switching emissions reductions due to a larger role for biofuels and renewables in commercial transport. |

## **C3.1d**

### **(C3.1d) 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 | [Situation] PACCAR’s product-related financial planning and strategy are influenced by climate related risks and opportunities such as the regulation of greenhouse gas emissions in commercial vehicles. For example, new regulations such as the U.S. EPA's Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium and Heavy Duty Engines and Vehicles as found in Federal Register Vol 78 No 116 require PACCAR to improve fuel efficiency and reduce greenhouse gas emissions from the commercial vehicles and engines sold in the US. Canada has similar regulations. [Task] Each year, PACCAR’s climate-related strategic decisions include the focus and scale of both capital and research and development budgets, as well as the scope of collaborations with suppliers, customers and other stakeholders. In this way, PACCAR can mitigate risks and capitalize on opportunities to develop, sell and support industry leading compliant, commercial vehicles, which will increase revenue and market share, decrease operating costs, and improve the environment over the short, medium and long-term timelines. PACCAR also sets product-use emissions targets and publicly discloses progress to provide the quantitative context for reducing emissions and benchmarking. [Activity] In 2019 PACCAR spent $227 million, which is 70% of PACCAR’s overall research and development spending, on climate-related advanced vehicle technology research and development. PACCAR also set a product-use emissions reduction target of 12% in grams CO2 per ton-mile in the U.S. and Canada between a baseline year of 2018 and target year of 2021. [Result] As a result, PACCAR’s 2019 sales mix of advanced commercial vehicles in the U.S. and Canada reduced lifetime product-use emissions in the US and Canada by 2.8% from a 2018 base year. Also, PACCAR’s 2019 truck segment revenues increased by almost 10% over 2018, with a 10% increase of units sold in the US and Canada. |
| Supply chain and/or value chain | Yes | [Situation] PACCAR’s supply and value chain financial planning and strategy are influenced by climate related risks and opportunities such as the regulation of greenhouse gas emissions in commercial vehicles, shifting customer preferences and expectations, and technological advances in truck design and logistics. In addition, reducing customer operating costs by improving fuel efficiency and reducing emissions offers PACCAR a competitive opportunity globally. [Task] In order to provide the most technologically advanced, compliant vehicles with the lowest operating costs, PACCAR collaborates with suppliers, customers and other value chain stakeholders. Each year, PACCAR’s substantive strategic decisions include the focus and scale of research and development budgets and the scope of collaborations with suppliers, customers and other stakeholders. In this way, PACCAR can mitigate risks and capitalize on opportunities to develop, sell and support industry leading, compliant commercial vehicles, which will increase revenue and market share, decrease operating costs, and improve the environment over the short, medium and long term. [Activity] In 2019, PACCAR spent $227 million, which is 70% of PACCAR’s overall research and development spending in 2019, on climate-related advanced vehicle technology research and development, and on collaborations. [Result] As a result, in 2019, Kenworth and Toyota Motor North America collaborated to develop ten zero-emission Kenworth T680s powered by Toyota supplied hydrogen fuel cell electric power-trains as part of a larger program to put fuel cell electric tractors, hydrogen fueling infrastructure, and zero emissions cargo handling equipment into operation between the Los Angeles, California basin and several inland cities such as Ontario and San Bernardino in 2020. |
| Investment in R&D | Yes | [Situation] PACCAR’s Research and Development (R&D) investment financial planning and strategy are influenced by climate related risks and opportunities such as the regulation of greenhouse gas emissions in commercial vehicles, shifting customer preferences and expectations, and technological advances in truck design and logistics. [Task] Each year, PACCAR’s climate-related strategic decisions include the focus and scale of research and development budgets, as well as the scope of collaborations with suppliers, customers and other stakeholders. In this way, PACCAR can mitigate risks and capitalize on opportunities to develop, sell and support industry leading compliant commercial vehicles, which will increase revenue and market share, decrease operating costs, and improve the environment over the short, medium and long term. [Activity] In 2019, PACCAR spent $227 million, which is 70% of PACCAR’s overall research and development spending in 2019, on climate-related advanced vehicle technology research and development, and collaborations, and launched many new products that are compliant with regulations and offer better fuel economy and lower greenhouse gas emissions. PACCAR's research and development spending decisions are strategically focused on compliance with greenhouse gas and other regulations, and product innovation and collaborations including reducing greenhouse gas emissions and improving fuel economy. [Result] In 2019, PACCAR’s research and development investment strategy and supplier collaborations included a multi-year collaboration with supplier, TransPower, to develop and commercialize zero and near-zero emissions trucks. Phase I featured Kenworth’s CNG range-extended plug-in hybrid electric trucks developed under the SCAQMD/DOE ZECT 2 program, as well as Peterbilt/TransPower battery design for increased capacity at the same system weight to increase electric range. The all-electric Peterbilt Model 520 refuse truck, demonstration vehicle is equipped with a 400 horsepower TransPower Electric Drive System and 352 KWh of energy storage, which is enough power to drive 80 miles a day and emits zero emissions in a quiet manner, which is ideal for the neighborhood communities where these trucks operate. |
| Operations | Yes | [Situation] PACCAR's financial planning and strategic decisions for operations are influenced by climate related risks and opportunities such as shifting customer demand, regulation of product use emissions and extreme weather events. These risks and opportunities require investment in facility upgrades to optimize flexible and resilient production capacity to produce new, compliant and lower emissions trucks. [Task] Each year, PACCAR’s climate-related strategic decisions include the focus and scale of capital budgets. Business continuity planning is undertaken and capital is invested where needed to support new product development, supply chain resiliency and timely disaster recovery. In addition, by setting operations-related greenhouse gas emissions targets, and then collecting and disclosing progress, PACCAR provides a quantitative context to reduce emissions and costs internally. [Action] PACCAR invested $744 million in capital in 2019 and $6.77 billion over the last 10 years in world-class facilities, innovative products and new technologies. PACCAR also set a greenhouse gas emission reduction target for global operations and facilities of 15% between 2013 and 2020, and collected and disclosed results in 2019 through CDP, as well as the PACCAR website and sustainability report. [Result] PACCAR’s investment in facilities and new product development resulted in a 2.8% reduction in lifetime product-use emissions in the US and Canada from a 2018 base year and a 10% increase in 2019 truck segment revenues. Global facility-related greenhouse gas emissions decreased in 2019 by 2.5% on an absolute basis and 12% on a revenue intensity basis from 2018. The decrease in PACCAR’s global, facility-related greenhouse gas emissions was 38% on a revenue intensity basis since the 2013 baseline, exceeding the target by more than 250%. |

## **C3.1e**

### **(C3.1e) 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 | Revenues | [Situation] Product related risks and opportunities of regulation of greenhouse gas emissions and shifting customer preferences for compliant, low emissions, fuel-efficient commercial vehicles are significant factors in revenue planning over short, medium and long-term timelines. As an example, PACCAR is subject to EPA’s Heavy Duty Vehicle and Engine Greenhouse Gas (GHG) regulatory program, as well as Environment and Climate Change Canada’s (ECCC) regulations for engines and vehicles produced by PACCAR Engine Company, and PACCAR divisions: Kenworth and Peterbilt. The U.S. regulations are found in 40 CFR 1036 for engines and 40 CFR 1037 for vehicles. Product level regulation has influenced annual revenue planning. [Task] To meet revenue projections PACCAR must develop, produce, sell compliant heavy-duty vehicles in the US and Canada that meet or exceed customer expectations for quality and operational efficiency to retain or grow revenue, market share and reduce environmental impact. [Action] PACCAR spent $227 million on advanced vehicle technology research and development in 2019 and launched many new products that offer better fuel economy and lower greenhouse gas emissions. [Result] As a result, in 2019 PACCAR’s truck sales revenue was $1.8 billion higher than in 2018 and PACCAR’s Class 8 truck market share in the U.S. and Canada grew from 29.4% to 30.0% in 2019. Also the greenhouse gas emissions in the Kenworth and Peterbilt heavy-duty vehicles sold in the US and Canada in 2019 were lower than required by the regulations resulting in greenhouse gas credits. PACCAR generates credits by exceeding the applicable standards in any given model year. In 2019, PACCAR created 2,661,575 tonnes of CO2 credits. PACCAR also retired 61,683 tonnes of CO2 credits as they were not needed to meet regulatory requirements of vehicles sold in the US and Canada. |

## **C3.1f**

### **(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).**

## **C4. Targets and performance**

## **C4.1**

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

Intensity target

## **C4.1b**

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

### **Target reference number**

Int 1

### **Year target was set**

2014

### **Target coverage**

Company-wide

### **Scope(s) (or Scope 3 category)**

Scope 1+2 (location-based)

### **Intensity metric**

Other, please specify (Metric tonnes per $ million in Revenue)

### **Base year**

2013

### **Intensity figure in base year (metric tons CO2e per unit of activity)**

16.4

### **% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure**

100

### **Target year**

2020

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

15

### **Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]**

13.94

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

1.5

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

0

### **Intensity figure in reporting year (metric tons CO2e per unit of activity)**

10.2

### **% of target achieved [auto-calculated]**

252.032520325203

### **Target status in reporting year**

Underway

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

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

### **Please explain (including target coverage)**

In 2019, PACCAR achieved a 37.7% reduction in global Scope 1 and 2 greenhouse gas intensity, which exceeds our 2020 target of 15%. Although absolute Scope 1 and 2 greenhouse gas emissions increased 1.5% between 2019 and the baseline year of 2013, absolute Scope 1 and 2 greenhouse gas emissions decreased 2.5% between 2018 and 2019. This decrease in absolute emissions between 2018 and 2019 was accomplished despite a 5% increase in production and 4% increase in facility square footage between 2018 and 2019. It should be noted that while PACCAR's current Scope 1 and 2 emissions reduction target is not science based, PACCAR's actual Scope 1 and 2 reductions in absolute emissions between 2018 and 2019 meets the Sectoral Decarbonization Approach (SDA) absolute contraction level of ambition for well below 2 degrees C. PACCAR is also evaluating science based targets for Scope 1 and 2 emissions using the Sectoral Decarbonization Approach (SDA) absolute contraction level of ambition for well below 2 degrees C and longer term time frames for SBTi approval.

### **Target reference number**

Int 2

### **Year target was set**

2018

### **Target coverage**

Country/region

### **Scope(s) (or Scope 3 category)**

Scope 3: Use of sold products

### **Intensity metric**

Other, please specify (Metric tonnes CO2 per ton-mile)

### **Base year**

2018

### **Intensity figure in base year (metric tons CO2e per unit of activity)**

0.000143

### **% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure**

70

### **Target year**

2021

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

12

### **Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]**

0.00012584

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

0

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

7

### **Intensity figure in reporting year (metric tons CO2e per unit of activity)**

0.000139

### **% of target achieved [auto-calculated]**

23.3100233100234

### **Target status in reporting year**

Underway

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

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

### **Please explain (including target coverage)**

In 2019, PACCAR achieved a 2.8% reduction in vehicle CO2 emissions in the U.S. and Canada. Product use CO2 emissions reductions will continue each year between 2018 and 2021 to achieve a targeted 12 % reduction through product innovation in improving fuel economy and our customer's willingness to purchase those innovative models. PACCAR's overall absolute vehicle CO2 emissions increased by 7% between 2018 and 2019 due to both an increase in unit sales and an increase in the relative sales of vehicles in the U.S. and Canada where heavier average payloads and higher average vehicle mile increase absolute vehicle emissions. In 2019, PACCAR set the next target for reduction of vehicle greenhouse gas emissions at 12% between a 2018 baseline and a 2021 target year on a metric tonnes CO2 per vehicle ton-mile basis for the U.S. and Canada. This intensity target amounts to a linear reduction of 4% per year, which exceeds the 2% level of ambition for Scope 3 emissions physical intensity reduction targets required by the Science Based Target Initiative (SBTi Criteria and Recommendations April 2020). However, PACCAR is also evaluating science-based targets for product use based on the Sectoral Decarbonization Approach (SDA) Transport Tool and longer-term time frames for SBTi approval.

## **C4.2**

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

No other climate-related targets

## **C4.3**

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

Yes

## **C4.3a**

### **(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.**

|  |  |  |
| --- | --- | --- |
|  | **Number of initiatives** | **Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked \*)** |
| Under investigation | 9 |  |
| To be implemented\* | 3 | 898 |
| Implementation commenced\* | 0 | 0 |
| Implemented\* | 29 | 1591646 |
| Not to be implemented | 3 |  |

## **C4.3b**

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

### **Initiative category & Initiative type**

|  |  |
| --- | --- |
| Energy efficiency in production processes | Other, please specify (Machinery and equipment upgrades, logistical improvements, information system upgrades) |

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

985

### **Scope(s)**

Scope 1

Scope 2 (location-based)

Scope 3

### **Voluntary/Mandatory**

Voluntary

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

3743236

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

2438795

### **Payback period**

<1 year

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

6-10 years

### **Comment**

### **Initiative category & Initiative type**

|  |  |
| --- | --- |
| Energy efficiency in buildings | Other, please specify (HVAC, LED replacement, and other building equipment and control system upgrades) |

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

1472

### **Scope(s)**

Scope 1

Scope 2 (location-based)

Scope 3

### **Voluntary/Mandatory**

Voluntary

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

700945

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

3136782

### **Payback period**

4-10 years

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

11-15 years

### **Comment**

### **Initiative category & Initiative type**

|  |  |
| --- | --- |
| Other, please specify | Other, please specify (Product Use emissions) |

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

1589188

### **Scope(s)**

Scope 3

### **Voluntary/Mandatory**

Mandatory

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

479347913

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

227000000

### **Payback period**

<1 year

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

6-10 years

### **Comment**

In 2019, product use emissions in the US and Canada decreased by 2.8% from the 2018 base year. This includes both mandatory and voluntary emissions savings as demonstrated by the 23% increase in new CO2 emissions credits earned in 2019 in the US and Canada compared with 2018. Monetary savings were calculated based on fuel usage reduction for our customers and the average price of diesel fuel. The investment required is based on 2019 research and development spending to reduce truck and engine greenhouse gas emissions and to improve truck and engine fuel economy.

### **Initiative category & Initiative type**

|  |  |
| --- | --- |
| Other, please specify | Other, please specify (Planted trees) |

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

1

### **Scope(s)**

Scope 1

### **Voluntary/Mandatory**

Voluntary

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

0

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

1121

### **Payback period**

No payback

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

>30 years

### **Comment**

PACCAR planted 680 trees to reduce ambient air CO2 and to reduce irrigation requirements in Victoria, Australia where water scarcity is a concern.

## **C4.3c**

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

|  |  |
| --- | --- |
| **Method** | **Comment** |
| Internal incentives/recognition programs | PACCAR’s six sigma and EcoDesign programs include annual monetary awards and recognition for best environmental projects including energy and emissions reduction projects. |
| Employee engagement | PACCAR’s manufacturing locations are ISO14001 certified and include continuous environmental improvement including reducing energy use and emissions. |
| Financial optimization calculations | Energy and greenhouse gas reduction projects are included in PACCAR’s global capital budget review process. |
| Compliance with regulatory requirements/standards | PACCAR’s global capital budget process fast tracks regulatory compliance projects including emissions reductions and energy efficiency requirements. |

## **C4.5**

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

Yes

## **C4.5a**

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

### **Level of aggregation**

Company-wide

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

Use of PACCAR's fuel efficient engines and vehicles, electric and hybrid vehicles and low carbon fuel vehicles reduces customer Scope 1 greenhouse gas emissions by replacing less fuel efficient older models in the US, Canada and Europe.

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

Avoided emissions

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

Estimating and Reporting the Comparative Emissions Impacts of Products (WRI)

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

51

### **% of total portfolio value**

<Not Applicable>

### **Asset classes/ product types**

<Not Applicable>

### **Comment**

For example, customers in the US and Canada that replaced older vehicles with a 2019 PACCAR model, reduced fleet emission by 18.6 and 6.5 tonnes CO2 per unit, per year for heavy-duty and medium-duty vehicles, respectively. Emissions reduction calculations are based on the 2.8% CO2 emissions reduction achieved in 2019 over a 2018 base year for PACCAR's specific sales mix in the US and Canada in 2019.

## **C5. Emissions methodology**

## **C5.1**

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

### **Scope 1**

### **Base year start**

January 1 2013

### **Base year end**

December 31 2013

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

107754

### **Comment**

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

### **Base year start**

January 1 2013

### **Base year end**

December 31 2013

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

173623

### **Comment**

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

### **Base year start**

### **Base year end**

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

### **Comment**

## **C5.2**

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

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

## **C6. Emissions data**

## **C6.1**

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

### **Reporting year**

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

120209

### **Start date**

<Not Applicable>

### **End date**

<Not Applicable>

### **Comment**

## **C6.2**

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

### **Row 1**

### **​Scope 2, location-based​**

We are reporting a Scope 2, location-based figure

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

We are reporting a Scope 2, market-based figure

### **Comment**

## **C6.3**

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

### **Reporting year**

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

165289

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

130169

### **Start date**

<Not Applicable>

### **End date**

<Not Applicable>

### **Comment**

## **C6.4**

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

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**

CO2 emissions related to CH4 and N2O from some fuel combustion and electricity purchased.

### **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**

N2O and CH4 emissions amount to less than a 1% change in PACCAR's overall emissions.

### **Source**

CO2 emissions from various small offices or leased facilities where energy usage data is not readily available.

### **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**

Based on the square footage of these small offices and leased facilities and the average energy intensity of similar facilities operated by PACCAR, the consolidated CO2 emissions are less than 1% of PACCAR's overall CO2 emissions.

## **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**

Not relevant, calculated

### **Metric tonnes CO2e**

1623520

### **Emissions calculation methodology**

Calculations are based on the number of new truck deliveries in 2019 and internal life cycle assessment (LCA) of material components of heavy-duty trucks. The internal LCA was compared with industry-wide analysis by the Argonne National Laboratory to verify data quality. Component emission factors are based on published values including those from the IPCC (2019 Refinements), UNFCCC and ICLEI.

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

0

### **Please explain**

The calculated CO2e emissions from purchased goods and services are much less than 5% of overall Scope 3 emissions.

### **Capital goods**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

731077

### **Emissions calculation methodology**

2019 spend for property plant and equipment including equipment acquired for operating leases less asset disposal proceeds was multiplied by the appropriate emission factor for supply chain emissions from DEFRA Environmental Reporting Guidelines March 2019.

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

0

### **Please explain**

The calculated capital goods related CO2e emissions are much less than 5% of overall Scope 3 emissions.

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

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

24872

### **Emissions calculation methodology**

The IPCC default emissions factors for upstream emissions from natural gas, diesel, propane, butane, gasoline and jet fuel were applied to PACCAR's 2019 fuel usage. Global emission factors for electricity transmission and distribution losses were obtained from the World Bank online data tables and multiplied by PACCAR's location specific electricity usage.

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

0

### **Please explain**

The calculated upstream fuel and energy CO2e emissions are much less than 5% of overall Scope 3 emissions.

### **Upstream transportation and distribution**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

1806889

### **Emissions calculation methodology**

Calculation based on PACCAR's global new truck deliveries in 2019, actual logistics miles traveled in the North America, PACCAR's 2018 EPA SmartWay composite freight emission factor, North American spend for ocean and air freight and DEFRA's March 2019 Environmental Reporting Guidelines emission factors for ocean and air freight. Global emissions are extrapolated based on proportional new truck deliveries and updated global road freight CO2 emission factors.

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

59

### **Please explain**

The calculated upstream transportation and distribution CO2 emissions are much less than 5% of overall Scope 3 emissions which is the threshold considered to be relevant.

### **Waste generated in operations**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

593

### **Emissions calculation methodology**

PACCAR recycles or recovers energy from most (90%) of its waste with most manufacturing facilities achieving Zero Waste to Landfill status. CO2 emissions from waste are calculated based on internal tracking of manufacturing waste and EPA's warm model for emissions for waste disposed in a landfill. Emissions credits due to recycling and energy recovery are not reported, nor used in the calculation of waste related emissions, as part of a conservative approach to determining PACCAR’s greenhouse gas emissions inventory.

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

100

### **Please explain**

The calculated CO2 emissions from waste generated from operations are much less than 5% of overall Scope 3 emissions which is the threshold considered to be relevant.

### **Business travel**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

10467

### **Emissions calculation methodology**

Air travel CO2 emissions are provided by PACCAR's global travel agent and do not yet include data for travel originating from the U.K. and Australia. Business travel in company owned and leased vehicles is included in Scope 1 emissions.

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

80

### **Please explain**

The calculated CO2 emissions from business air travel are provided by our travel supplier and are much less than 5% of overall Scope 3 emissions which is the threshold considered to be relevant.

### **Employee commuting**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

43659

### **Emissions calculation methodology**

Calculated based on CDP data for industrial and auto manufacturers multiplied by the current number of PACCAR's worldwide full time employees.

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

0

### **Please explain**

Sensitivity analysis of industry specific emission factors using high, low and average values does not change the finding that CO2e emissions from employee commuting does not exceed the 5% relevancy threshold.

### **Upstream leased assets**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

CO2e emissions from leased assets that are operated by PACCAR are included in Scope 1 and 2 emissions reported.

### **Downstream transportation and distribution**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

508436

### **Emissions calculation methodology**

Calculation is based on PACCAR's global new truck deliveries in 2019, outbound finished truck delivery miles in North America, and PACCAR's 2018 EPA SmartWay composite freight emission factor. Global emissions are extrapolated based on proportional new truck deliveries and updated global road freight CO2 emission factors.

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

59

### **Please explain**

The calculated CO2 emissions for downstream transportation and distribution are less than 5% of overall Scope 3 emissions, which is the threshold considered relevant.

### **Processing of sold products**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

86951

### **Emissions calculation methodology**

PACCAR's products are processed further by adding trailers and equipment, or mounting winches. Estimating downstream emissions related to processing of sold products is based on the new truck deliveries multiplied by an emission factor using internal emissions intensity for similar processes.

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

0

### **Please explain**

The calculated CO2 emissions downstream processing of sold products are much less than 5% of overall Scope 3 emissions.

### **Use of sold products**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

78066148

### **Emissions calculation methodology**

Calculations are based on PACCAR global sales mix for new truck deliveries in 2019 and the 2.8% reduction in CO2 emissions for vehicles sold in the US and Canada. Vehicle emissions are as reported to US EPA, Environment and Climate Change Canada (ECCC), and the EU Environmental Agency (EEA), and other geographically specific emission factors, as well as regionally appropriate average vehicle life cycle miles and payloads.

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

0

### **Please explain**

Product use emissions are based on CO2 emission factors for heavy and medium duty vehicle specific to PACCAR's sales mix by model and region to the extent available. Regionally specific life cycle miles or kilometers, as well as payloads are also used.

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

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

14272

### **Emissions calculation methodology**

Calculations are based on the 2019 new truck deliveries and life cycle assessment modeling of recyclable content. Emission factors for non-recyclable plastics, rubber and miscellaneous materials such as textiles are based on EPA's WARM waste emissions model.

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

0

### **Please explain**

The calculated CO2e emissions for the end of life treatment of product sold are much less than 5% of Scope 3 emissions and are not considered relevant.

### **Downstream leased assets**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

1589

### **Emissions calculation methodology**

CO2 emissions for downstream leased assets is limited to the estimated emissions from downstream leased buildings which we own but do not operate based on the emissions intensity factor for each type of building use.

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

0

### **Please explain**

The calculated CO2e emissions for the downstream leased assets are much less than 5% of Scope 3 emissions and are not considered relevant. Downstream CO2 emissions from truck leasing is included in Use of Sold Products above.

### **Franchises**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

Company owned dealerships are included in Scope 1 and 2 emissions. All other dealerships are independently owned and operated.

### **Investments**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

Investments are related to financing of truck purchase and are included in the new truck delivery estimates of "Use of Sold Product" category.

### **Other (upstream)**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

No other upstream CO2 emissions have been identified.

### **Other (downstream)**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

No other upstream CO2 emissions have been identified.

## **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 CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.**

### **Intensity figure**

0.0000102

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

285498

### **Metric denominator**

unit total revenue

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

27873600000

### **Scope 2 figure used**

Location-based

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

12

### **Direction of change**

Decreased

### **Reason for change**

An absolute reduction of CO2 emissions of 2.5% between 2018 and 2019, successful implementation of energy efficiency projects, a shift to cleaner fuels such as natural gas and a revenue increase of 11% contributed to the reduction in revenue intensity between 2018 and 2019. An example of energy efficiency projects implemented in 2019 includes replacement of lighting with LEDs at many of our facilities and upgrading factories with more energy efficient process equipment. Revenue is adjusted for currency exchange changes relative to baseline year 2013. Revenue increased and cumulative energy reduction efforts reduced related greenhouse gas emissions in 2019 from 2018 such that revenue intensity decreased by 12% year over year. In addition, revenue intensity is 38% lower in 2019 compared with base year 2013. PACCAR surpassed our target of 15% reduction in revenue intensity by 2020 by over 250%.

### **Intensity figure**

1.4

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

285498

### **Metric denominator**

unit of production

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

198800

### **Scope 2 figure used**

Location-based

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

7

### **Direction of change**

Decreased

### **Reason for change**

An absolute reduction of greenhouse gas emissions of 2.5% between 2018 and 2019, an increase in new truck deliveries and cumulative energy reduction efforts reduced greenhouse gas emissions intensity in 2019 compared with 2018 such that emissions intensity for new truck deliveries decreased by 7%. In addition, emissions intensity based of new truck deliveries is 30% lower in 2019 compared with base year 2013. Energy efficiency projects, a shift to cleaner fuels such as natural gas, and an increase in truck deliveries contributed to the reduction in production unit based greenhouse gas emissions intensity between 2018 and 2019. An example of energy efficiency projects implemented in 2018 includes replacement of lighting with LEDs at many of our facilities and upgrading factories with more energy efficient process equipment.

## **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 | 117837 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| HFCs | 2372 | IPCC Fourth Assessment Report (AR4 - 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)** |
| Australia | 1981 |
| Belgium | 12661 |
| Canada | 8948 |
| Mexico | 6933 |
| Netherlands | 30424 |
| United States of America | 54896 |
| United Kingdom of Great Britain and Northern Ireland | 2198 |
| Other, please specify (Rest of the World) | 2168 |

## **C7.3**

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

By activity

## **C7.3c**

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

|  |  |
| --- | --- |
| **Activity** | **Scope 1 emissions (metric tons CO2e)** |
| Manufacturing | 102538 |
| Test Facilities | 8312 |
| Warehouses | 1961 |
| Other facilities including office buildings, used truck lots and PacLease facilities. | 7397 |

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

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Gross Scope 1 emissions, metric tons CO2e** | **Net Scope 1 emissions , metric tons CO2e** | **Comment** |
| Cement production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Chemicals production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Coal production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Electric utility activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Metals and mining production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (upstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (midstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Steel production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport OEM activities | 102538 | <Not Applicable> | Includes manufacturing only. Test facilities, office buildings, warehouses and other facilities are excluded. |
| Transport services activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |

## **C7.5**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Country/Region** | **Scope 2, location-based (metric tons CO2e)** | **Scope 2, market-based (metric tons CO2e)** | **Purchased and consumed electricity, heat, steam or cooling (MWh)** | **Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)** |
| Australia | 4858 |  | 4762 | 0 |
| Belgium | 11884 |  | 50143 | 0 |
| Canada | 53 |  | 20633 | 0 |
| Mexico | 24253 |  | 48516 | 0 |
| Netherlands | 42861 |  | 82109 | 82109 |
| United States of America | 77669 |  | 183529 | 0 |
| United Kingdom of Great Britain and Northern Ireland | 2344 |  | 9169 | 0 |
| Other, please specify (Rest of World) | 1368 |  | 8498 | 178 |

## **C7.6**

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

By activity

## **C7.6c**

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

|  |  |  |
| --- | --- | --- |
| **Activity** | **Scope 2, location-based (metric tons CO2e)** | **Scope 2, market-based (metric tons CO2e)** |
| Manufacturing | 154199 |  |
| Test Facilities | 2684 |  |
| Warehouses | 3069 |  |
| Other facilities including office buildings and used truck lots and PacLease facilities. | 5337 |  |

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

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Scope 2, location-based, metric tons CO2e** | **Scope 2, market-based (if applicable), metric tons CO2e** | **Comment** |
| Cement production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Chemicals production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Coal production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Metals and mining production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (upstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (midstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Steel production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport OEM activities | 154199 | 116706 | Includes manufacturing only. Test facilities, office buildings, warehouses and other facilities are excluded. |
| Transport services activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |

## **C-TO7.8**

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

### **Activity**

Heavy Duty Vehicles (HDV)

### **Emissions intensity figure**

0.000079

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

78066148

### **Metric denominator**

t.mile

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

986048000000

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

2.2

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

198800

### **Vehicle lifetime in years**

5

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

80000

### **Load factor**

12.4 tonnes

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

PACCAR's heavy duty emission intensity increased 2.2% in 2019 from a recalculated 2018 emissions factor despite a 2.8% reduction in unit emissions for PACCAR's sales in the US and Canada. The emission intensity increase is due to an increase in sales mix of higher emitting US and Canada heavy-duty vehicles where annual vehicle miles and payloads are greater than in the EU. The Annual distance traveled and load factor used in this response is based on EPA average data specific to PACCAR's US sales mix in 2019. Scope 3 Use of Product Emissions were recalculated for 2018, due to a new baseline update in emission factors for PACCAR's sales mix in the US/Canada and the EU. Global emission factors were also updated in accordance with the International Energy Agency's 2017 publication "The Future of Trucks".

## **C7.9**

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

Decreased

## **C7.9a**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Change in emissions (metric tons CO2e)** | **Direction of change** | **Emissions value (percentage)** | **Please explain calculation** |
| Change in renewable energy consumption | 0 | No change | 0 | PACCAR decreased purchases of renewable energy in 2019 by 2,825 MWh compared with 2018 (85,112MWh – 82,287 MWh = 2,825 MWh) as part of an overall decrease in energy use. The resulting change in emissions would normally be calculated by multiplying the change in renewable energy used by the location specific emission factor, which in this case would result in 1,570 tonnes of CO2 emissions. However, in this case, there is no change in PACCAR’s overall CO2 emissions because the energy was not actually used. Further, PACCAR’s reported overall emissions for both 2018 and 2019 do not subtract out the amount of renewable energy used and are therefore conservative estimates of actual CO2 emissions. |
| Other emissions reduction activities | 2458 | Decreased | 1 | PACCAR achieved a 2,458 tonne reduction in CO2 emissions in 2019 due to energy efficiency projects implemented in 2019. Total Scope 1 and 2 emissions were 292,716 tonnes of CO2 in 2018. This results in a 1% reduction from the previous year ((2,458/292,716)x100=1%). It should be noted that the absolute reduction in Scope 1 and 2 CO2 emissions between 2018 and 2019 was higher at 2.5%. This is calculated by subtracting the absolute emissions in 2019 from 2018 emissions and dividing by 2018 emissions and multiplying by 100% ((292,716-285,498)/292,716)x100=2.5%). |
| Divestment |  | <Not Applicable> |  |  |
| Acquisitions |  | <Not Applicable> |  |  |
| Mergers |  | <Not Applicable> |  |  |
| Change in output | 22233 | Decreased | 8 | PACCAR's global production increased by 5% between 2018 and 2019 to 198,800 new truck deliveries. However, PACCAR's global greenhouse gas emissions decreased by 2.5% on an absolute basis in 2019. This represents an 8% decrease in CO2 emissions in 2019 from business as usual projections of emissions due to energy efficiency measures and behavior modification. The 8% decrease in 2019 greenhouse gas emissions is calculated by first calculating the business as usual emissions for 2019 from the 2018 emissions intensity of 1.5 tonnes CO2 per unit delivered in 2019 (1.5 x 198,800 units = 307,731 tonnes CO2) or 307,731 tonnes CO2 emitted in 2019 for the business as usual scenario. Actual 2019 emissions were much lower at 285,498 tonnes CO2. The reduction in CO2 emissions from business as usual is calculated by subtracting the actual emissions from the business as usual emissions (307,731 - 285,498 = 22,233 tonnes CO2 reduction). The 8% percentage reduction in 2019 CO2 emissions is then calculated by dividing the reduction in 2019 CO2 emissions by 2018 total Scope 1 and 2 CO2e emissions ((22,233/292,716)x100=8%). |
| Change in methodology |  | <Not Applicable> |  |  |
| Change in boundary |  | <Not Applicable> |  |  |
| Change in physical operating conditions |  | <Not Applicable> |  |  |
| Unidentified |  | <Not Applicable> |  |  |
| Other |  | <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?**

Location-based

## **C8. Energy**

## **C8.1**

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

More than 0% but less than or equal to 5%

## **C8.2**

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

|  |  |
| --- | --- |
|  | **Indicate whether your organization 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 | No |
| Consumption of purchased or acquired steam | No |
| Consumption of purchased or acquired cooling | No |
| Generation of electricity, heat, steam, or cooling | No |

## **C8.2a**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Heating value** | **MWh from renewable sources** | **MWh from non-renewable sources** | **Total (renewable and non-renewable) MWh** |
| Consumption of fuel (excluding feedstock) | LHV (lower heating value) | 0 | 544473 | 544473 |
| Consumption of purchased or acquired electricity | <Not Applicable> | 82287 | 325072 | 407359 |
| Consumption of purchased or acquired heat | <Not Applicable> | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Consumption of purchased or acquired steam | <Not Applicable> | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Consumption of purchased or acquired cooling | <Not Applicable> | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Consumption of self-generated non-fuel renewable energy | <Not Applicable> | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Total energy consumption | <Not Applicable> | 82287 | 869545 | 951832 |

## **C8.2b**

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

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

## **C8.2c**

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

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

Acetylene

### **Heating value**

LHV (lower heating value)

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

106

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

### **Emission factor**

244

### **Unit**

kg CO2 per MWh

### **Emissions factor source**

2019 Climate Registry Table 1.1

### **Comment**

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

Butane

### **Heating value**

LHV (lower heating value)

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

9

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

### **Emission factor**

221

### **Unit**

kg CO2 per MWh

### **Emissions factor source**

2019 Climate Registry Table 1.1

### **Comment**

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

Diesel

### **Heating value**

LHV (lower heating value)

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

95768

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

### **Emission factor**

267

### **Unit**

kg CO2 per MWh

### **Emissions factor source**

WRI GHG Protocol

### **Comment**

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

Petrol

### **Heating value**

LHV (lower heating value)

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

2091

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

### **Emission factor**

249

### **Unit**

kg CO2 per MWh

### **Emissions factor source**

WRI GHG Protocol

### **Comment**

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

Methane

### **Heating value**

LHV (lower heating value)

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

2

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

### **Emission factor**

202

### **Unit**

kg CO2 per MWh

### **Emissions factor source**

WRI GHG Protocol

### **Comment**

Used for combustion. Natural Gas emission factor used.

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

Natural Gas

### **Heating value**

LHV (lower heating value)

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

411312

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

### **Emission factor**

202

### **Unit**

kg CO2 per MWh

### **Emissions factor source**

WRI GHG Protocol

### **Comment**

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

Propane Gas

### **Heating value**

LHV (lower heating value)

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

17767

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

### **Emission factor**

227

### **Unit**

kg CO2 per MWh

### **Emissions factor source**

WRI GHG Protocol

### **Comment**

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

Jet Kerosene

### **Heating value**

LHV (lower heating value)

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

17417

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

### **Emission factor**

252

### **Unit**

kg CO2 per MWh

### **Emissions factor source**

WRI GHG Protocol

### **Comment**

## **C8.2e**

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

### **Sourcing method**

Green electricity products (e.g. green tariffs) from an energy supplier, not supported by energy attribute certificates

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

Hydropower

### **Country/region of consumption of low-carbon electricity, heat, steam or cooling**

Europe

### **MWh consumed accounted for at a zero emission factor**

82287

### **Comment**

Most of PACCAR's 82,287 MWh of renewable electricity consumption in 2019 was in the Netherlands. Only 178 MWh of the total 82,287 MWh of renewable electricity consumed by PACCAR in 2019 is from outside of the Netherlands. Due to the lack of CDP acceptable certifications, low-carbon emissions factors are not used by PACCAR in CDP reporting of greenhouse gas emissions. The location specific emission factor for the Netherlands, which is 0.522 tons CO2e per MWh, is used for calculating CO2 emissions for CDP reporting except for the 178 MWh’s of green energy consumed in Germany. The country specific emission factor for Germany is used for the 178 MWh’s of green energy consumed in Germany. Using location specific emission factors for renewable energy used results in conservative estimates of greenhouse gas emissions.

## **C-TO8.5**

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

### **Activity**

Heavy Duty Vehicles (HDV)

### **Metric figure**

1.4

### **Metric numerator**

tCO2e

### **Metric denominator**

Production: Vehicle

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

285498

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

198800

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

-7

### **Please explain**

PACCAR's 2019 global greenhouse gas emissions intensity per unit delivered decreased 7% from 1.5 tonnes CO2 per unit delivered in 2018 to 1.4 tonnes CO2 per unit delivered in 2019. Although PACCAR's global production rate increased by 5% in 2019, global greenhouse gas emissions decreased 2.5% between 2018 and 2019 on an absolute basis demonstrating significant decoupling of greenhouse gas emissions from growth in production due to a focus on energy reduction investments. The reduction in CO2 intensity is calculated by dividing the difference between the 2018 and 2019 greenhouse gas emissions by the units delivered each year, respectively, and then dividing that difference by the emissions intensity per unit delivered in 2018. ((292,716 tonnes/189,100 units) - (285,498 tonnes/198,800 units))/(292,716 tonnes/189,100 units)).

## **C9. Additional metrics**

## **C9.1**

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

## **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**

Heavy Duty Vehicles (HDV)

### **Metric**

Sales

### **Technology**

Vehicle using bio-fuel

### **Metric figure**

46

### **Metric unit**

Other, please specify (% units delivered)

### **Explanation**

PACCAR’s MX 13 and MX 11 engines are certified to use B10/B20/B30 and XTL biofuels in Europe and B20 in the U.S. including renewable fuels. Biofuel capable unit sales represents 46% of PACCAR's total global trucks delivered.

## **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 |  |

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

### **(C-TO9.6a/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**

Heavy Duty Vehicles (HDV)

### **Technology area**

Unable to disaggregate by technology area

### **Stage of development in the reporting year**

<Not Applicable>

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

61-80%

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

### **Comment**

## **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**

[PACCAR 2019 CDP Audit - Verification Statement Letter v1.00.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/4ZdA0oYEJU6ezjFzF9HRYQ/PACCAR2019CDPAuditVerificationStatementLetterv1.00.pdf)

### **Page/ section reference**

Pages 2 and 3

### **Relevant standard**

ISO14064-3

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

75

## **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 location-based

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

Annual process

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

Complete

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

Limited assurance

### **Attach the statement**

[PACCAR 2019 CDP Audit - Verification Statement Letter v1.00.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/4ZdA0oYEJU6ezjFzF9HRYQ/PACCAR2019CDPAuditVerificationStatementLetterv1.00.pdf)

### **Page/ section reference**

Pages 2 and 3

### **Relevant standard**

ISO14064-3

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

95

## **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: Business travel

### **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**

[PACCAR 2019 CDP Audit - Verification Statement Letter v1.00.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/4ZdA0oYEJU6ezjFzF9HRYQ/PACCAR2019CDPAuditVerificationStatementLetterv1.00.pdf)

### **Page/section reference**

Pages 2 and 3

### **Relevant standard**

ISO14064-3

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

0.01

## **C10.2**

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

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

## **C11. Carbon pricing**

## **C11.1**

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

Yes

## **C11.1a**

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

EU ETS

## **C11.1b**

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

### **EU ETS**

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

14

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

0

### **Period start date**

January 1 2019

### **Period end date**

December 31 2019

### **Allowances allocated**

12885

### **Allowances purchased**

0

### **Verified Scope 1 emissions in metric tons CO2e**

17236

### **Verified Scope 2 emissions in metric tons CO2e**

0

### **Details of ownership**

Facilities we own and operate

### **Comment**

## **C11.1d**

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

The strategy is to reduce emissions by reducing consumption of energy, and purchasing credits, if needed, or if the market circumstances are profitable to do so. The storage of unused allowances will be used in the EU-ETS 2013-2020 trading period. Energy conservation is pursued using energy management systems and the systematic replacement of process equipment with higher energy efficient models. For example in 2019, PACCAR's DAF Eindhoven facility used previously banked CO2 emissions credits to cover the 4,351 tonne difference between allowed and actual CO2 emissions. In addition, the DAF Eindhoven actual CO2 emissions were 1,000 tonnes lower in 2019 than in 2018, due primarily to an upgraded central boiler system.

## **C11.2**

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

Yes

## **C11.2a**

### **(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.**

### **Credit origination or credit purchase**

Credit origination

### **Project type**

Transport

### **Project identification**

PACCAR is subject to EPA’s Heavy Duty Vehicle and Engine Greenhouse Gas (GHG) regulatory program, as well as Environment and Climate Change Canada’s (ECCC) regulations for engines and vehicles produced by PACCAR Engine Company, and PACCAR divisions: Kenworth and Peterbilt. The U.S. regulations are found in 40 CFR 1036 for engines and 40 CFR 1037 for vehicles. PACCAR generates credits by exceeding the applicable standards in any given model year. In 2019, PACCAR created the following CO2 credits: Engine credits: US = 1,240,406 tonnes; Canada = 272,402 Tonnes, Vehicle credits: US = 1,129,546 tonnes; Canada = 19,221 tonnes. PACCAR also retired unused credits from 2014 amounting to the following: Retired vehicle credits: US = 61,683 tonnes. Credits were retired because they had reached the end of their useful life and were not used by PACCAR.

### **Verified to which standard**

Other, please specify (40CFR 1036 and 40 CFR 1037)

### **Number of credits (metric tonnes CO2e)**

2661575

### **Number of credits (metric tonnes CO2e): Risk adjusted volume**

2661575

### **Credits cancelled**

No

### **Purpose, e.g. compliance**

Voluntary Offsetting

## **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

### **GHG Scope**

Scope 1

Scope 2

Scope 3

### **Application**

Capital budget allocation process.

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

1

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

One-for-one based on tonnes of CO2 emissions associated with capital investments, including increases and decreases in CO2 emissions.

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

Shadow price

### **Impact & implication**

PACCAR's internal capital budgeting process includes project specific estimates of the resulting changes to CO2 emissions for both facilities and product-use projects as part of the approval process. These changes to CO2 emissions result in a second return on investment using the CO2 emissions changes as the shadow price, which can be for either decreasing or increasing emissions to better inform decision making in the context of CO2 emissions reduction goals. PACCAR's internal approval return on investment (ROI) threshold is higher than many energy efficiency related projects can achieve, allowing the second carbon price return to help otherwise marginal investment, by PACCAR's standards, gain approval. For example in 2019, PACCAR approved an LED lighting replacement project at our PB Denton facility, which reduced greenhouse gas emissions by 945 tonnes per year even though the project offered a low ROI. Embedding a shadow price for carbon within PACCAR’s capital budgeting process provides information and visibility to project specific carbon impacts to the capital budget teams at our divisions. This expands climate change awareness at both the project and facility levels, which is essential for generating facility specific emissions reductions initiatives year after year.

## **C12. Engagement**

## **C12.1**

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

Yes, our suppliers

Yes, our customers

Yes, other partners in the value chain

## **C12.1a**

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

### **Type of engagement**

Innovation & collaboration (changing markets)

### **Details of engagement**

Run a campaign to encourage innovation to reduce climate impacts on products and services

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

8.5

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

85

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

94

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

PACCAR is driven to provide its customers with the highest quality truck with the lowest lifetime operating costs especially related to fuel economy, safety, reduced emissions and next generation transport technology. PACCAR challenges all suppliers to improve vehicle fuel efficiency and reduce greenhouse gas emissions using cutting-edge technology. Active collaboration with the top 100 suppliers, which accounts for 85% of PACCAR's total spend, is strategically focused on those suppliers who can best contribute to vehicle fuel economy improvements and reduced emissions.

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

Success is measured by the improvement in fuel economy and reduction of greenhouse gas emissions from PACCAR’s trucks. For example, successful engagement with suppliers, customer and partners resulted in PACCAR's success in reducing greenhouse gas emissions intensity in trucks sold in North American in 2019 by 2.8% over the 2018 baseline. An example of supplier collaboration and innovation in 2019 is the collaboration between Kenworth and Toyota Motor North America to develop ten zero-emission Kenworth T680s powered by Toyota hydrogen fuel cell electric powertrains. The Kenworth T680 on-highway flagship offers superior fuel efficiency, performance and comfort, and serves as an excellent foundation to develop the hydrogen fuel cell electric powertrain. Kenworth provides the T680 chassis and cab, motors, transmission, and cooling systems, and delivers overall fuel cell electric vehicle (FCEV) integration. Toyota provides fuel cell stacks, hydrogen tanks, load balancing batteries, and other components necessary to deliver the high voltage to the motors, in addition to the controls for that power. Extensive performance testing and calibration work at both the PACCAR Technical Center in Mount Vernon, Washington, and at the Toyota Arizona Proving Grounds will give drivers of this advanced FCEV powertrain optimal performance in the primary targeted port drayage application. The full contingent of ten FCEVs is expected to enter operation in the ports and Los Angeles basin in 2020, and will be placed into service by UPS, Toyota Logistics, TTSI and Southern Counties Express. To meet customer needs in these drayage, car-carrier and local-haul applications, the vehicles will have ranges of over 300 miles under normal operating conditions. The T680s with the Toyota hydrogen fuel cell electric powertrain combine hydrogen gas and air to produce electricity. The electricity powers electric motors to move the trucks, while also charging the lithium-ion batteries to optimize performance as needed. Sophisticated power management systems will apportion the electrical power from the fuel cells to the motors, batteries, and other components, such as electrified power steering and brake air compressors.

### **Comment**

## **C12.1b**

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

### **Type of engagement**

Education/information sharing

### **Details of engagement**

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

### **% of customers by number**

100

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

94

### **Portfolio coverage (total or outstanding)**

<Not Applicable>

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

PACCAR provides information, training and recognition to all customers to optimize fuel economy and reduce greenhouse gas emissions of PACCAR’s nameplate DAF, Peterbilt and Kenworth trucks because the driver’s skills in using PACCAR advanced vehicles can reduce transport related greenhouse gas emissions significantly. PACCAR offers all customers driver training through instructional videos, hands-on classroom Driver Academy and in-vehicle driver information centers to reduce fuel consumption and CO2 emissions, improve vehicle reliability and driver productivity, and enhance the health and safety of the driver and the environment. For example, at the start of the DAF EcoDrive training the driver is challenged to show his or her actual driving skills. During the session, time, fuel consumption and DAF Driver Performance Assistant scores are monitored. In the second stage of training, the driver receives all the theoretical information on how to make optimum use of all the DAF truck systems that enable him or her to drive as economically as possible. The final part of the DAF Driver Training is a coached driving session, during which all theoretical information is put into practice and new scores are monitored to show the improvement, which is a measure of success for each driver. Also, the DAF, Kenworth and Peterbilt Driver Performance Assistant offers interactive in-dash coaching for customers to continue improvement in driver skills on-the-job, and to provide real-time truck and fleet information on truck systems that can improve fuel economy including tire pressure, aerodynamic settings of cab roof spoilers, fuel efficient shifting, braking, and predictive cruise control. In addition, DAF's 2019 Driver Challenge is a truck driving competition, which was held across 30 countries and open to all truck drivers, to determine which driver would be crowned ‘International DAF Driver Champion 2019'. The DAF Driver Challenge provides international recognition to the very best truck drivers of 2019 emphasizing maximizing fuel economy, demonstrating knowledge of applicable regulations, transporting freight safely, on time and during all road and traffic conditions while keeping vehicles in top condition.

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

The skills of drivers of PACCAR's DAF, Kenworth and Peterbilt trucks are key to achieving the highest possible fuel efficiency and reduction of greenhouse gas emissions. The impact of providing driver training to all PACCAR customers in the use of PACCAR’s advance vehicles is improved vehicle reliability, increased driver productivity, enhanced driver safety, better fuel economy, reduced operating expense, and reduced vehicle emissions including greenhouse gas emissions. The measure of success is the fuel efficiency increase and operational safety improvement for our customers. For example, the DAF EcoDrive Training supports the driver in handling the truck in the most efficient way using the latest on-board technologies resulting in 3 to 5% better fuel economy and lower emissions from every properly trained driver. Customer surveys track customer satisfaction including training impacts. One customer recently noted, “The driver assist provides feedback to our drivers wherever they go, so we don’t have to ride along with them to evaluate their driving. It offers them guidance in situations as they happen. We think that’s a much more effective way for drivers to learn how to improve their driving. It can advise them when to shift to get optimum fuel economy. The performance assist coupled with the Kenworth T680’s aerodynamics and fuel efficiency of the PACCAR MX-engine, have all contributed to the T680 delivering an average 1.2 mpg improvement in fuel economy over the other trucks in our fleet. That’s a 21 percent improvement in fuel economy performance.”

## **C12.1d**

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

PACCAR pursues multi-stakeholder opportunities, including not only suppliers and customers, but also other value chain partners such as government agencies and universities, for collaboration to both expedite and enhance advances in road freight including vehicle electrification, improved fuel economy, zero-emissions, autonomous and advanced driver assistance technologies. As an example, in 2019 Kenworth, a division of PACCAR, continued its collaboration with the Department of Energy, Mississippi State University, the National Renewable Energy Laboratory, as well as Eaton, AVL and UPS to develop important advancements in Class 8 truck aerodynamics, engine and powertrain efficiencies as part of the DOE SuperTruck II Project. The PACCAR Technical Center and DAF Trucks, a subsidiary of PACCAR, also participated. The project utilizes Kenworth's T680 highway flagship tractor and the fuel-efficient PACCAR MX engine. The project's target goals include the demonstration of greater than 100 percent improvement in freight efficiency over the 2009 equivalent model and achieving 55 percent engine brake thermal efficiency.

## **C12.3**

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

Direct engagement with policy makers

Trade associations

## **C12.3a**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Focus of legislation** | **Corporate position** | **Details of engagement** | **Proposed legislative solution** |
| Other, please specify (Fuel Efficiency and emissions) | Support | Direct engagement with the Department of Energy, National Highway Traffic Safety Administration, US EPA, Environment Canada, California Air Resources Board and the European Parliament in developing fuel-efficient freight, carbon neutral transport and infrastructure. | Improving fuel economy and the commercialization of alternate fuels helps PACCAR’s customers reduce costs and impacts on the environment. Transport emissions regulations should be harmonized internationally to cost effectively broaden the environmental benefit. Public policy that supports development of alternative powertrains and the associated road freight infrastructure. |

## **C12.3b**

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

Yes

## **C12.3c**

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

### **Trade association**

Engine Manufacturers Association (EMA)

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

Consistent

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

The Engine Manufacturers Association works cooperatively with regulatory agencies, including the US Environmental Protection Agency (EPA), the California Air Resources Board (ARB), the National Highway Transportation Safety Administration (NHTSA), state governments and international regulatory agencies to develop and implement cost-effective and technologically feasible emissions, fuel efficiency and safety regulations that result in fewer emissions, better fuel efficiency, and enhanced safety. EMA’s President recently stated, “our members continue to increase fuel efficiency and lower greenhouse gas emission in line with standards that will continue to challenge us through the next decade. EMA members are ready to build upon these successes to achieve even greater reductions.”

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

PACCAR contributes to EMA’s focus and outreach on globally consistent policy and regulatory development addressing commercial transport fuel efficiency, low carbon fuels and emissions including oxides of nitrogen and greenhouse gas emissions.

### **Trade association**

European Automobile Manufacturer’s Association (ACEA)

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

Consistent

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

ACEA supports the European Commission's proposal for required monitoring and reporting of CO2 emission and fuel consumption of new heavy-duty vehicles. Fuel consumption information is key to enabling vehicle operators to make well-informed purchasing decisions. GHG reductions can be achieved with policies and local action to improve traffic flow, investments in intelligent infrastructure, and better intermodal logistics. In a December 2019 press release, ACEA committed to helping with the transition to carbon-neutral and zero emission freight transport, and called for radical public policy support for the rapid roll out of charging and refueling infrastructure for alternative powertrains.

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

Through DAF, PACCAR contributes to ACEA’s policy and regulatory outreach on the sustainability of commercial transport including greenhouse gas emissions, alternative powertrains and the associated road and logistical infrastructure.

## **C12.3f**

### **(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?**

PACCAR's policy engagement and lobbying activity at the local, state, regional, and national level are centrally managed by region. For example, in the U.S., PACCAR’s public affairs office in Washington, D.C. reports to the corporate General Counsel to insure consistent alignment with overall business strategy including climate related priorities. In the EU, DAF engages in climate policy outreach through the European Automobile Manufacturer’s Association (ACEA) and reports to PACCAR's President. Both PACCAR's President and General Counsel are members of PACCAR's operating committee ensuring consistent climate strategy across business units and geographies.

## **C12.4**

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

### **Publication**

In mainstream reports, in line with the CDSB framework (as amended to incorporate the TCFD recommendations)

### **Status**

Complete

### **Attach the document**

[PACCAR 2019 Annual Report for CDP.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/YqEuECvX20qGUemdWQPP7g/PACCAR2019AnnualReportforCDP.pdf)

### **Page/Section reference**

Pages 4, 7, 9, 11, 13, 22, 23, 25, 28, 29

### **Content elements**

Strategy

Risks & opportunities

Emissions figures

Emission targets

### **Comment**

## **C15. 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.**

## **C15.1**

### **(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.**

|  |  |  |
| --- | --- | --- |
|  | **Job title** | **Corresponding job category** |
| Row 1 | Director Environment | Other, please specify (Director Environment) |