

C0. Introduction

C0.1

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

Tenneco (NYSE: TEN) is one of the world's leading designers, manufacturers and marketers of automotive products for original equipment (OE) and aftermarket customers, with full-year 2020 revenues of \$15.4 billion and approximately 73,000 team members working at more than 270 sites worldwide. Tenneco is driving advancements in global mobility by delivering technology solutions for diversified global markets, including light vehicle, commercial truck, off-highway, industrial, motorsport and the aftermarket. Tenneco consists of four segments or four business groups: Motorparts, Performance Solutions, Clean Air and Powertrain.

Motorparts

o Designs, manufactures, sources, markets and distributes a broad portfolio of leading brand-name products in the global vehicle aftermarket while also servicing the original equipment service (OES) market.

o Motorparts products are marketed and sold under industry-leading brand names including Monroe®, Champion®, Öhlins®, MOOG®, Walker®, Fel-Pro®, Wagner®, Ferodo®, Rancho®, Thrush®, National®, Sealed Power® and others.

Performance Solutions (formerly Ride Performance)

o Designs, manufactures, markets and distributes a variety of ride performance solutions and systems to a global OE and aftermarket customer base.

o Includes noise, vibration and harshness performance materials, advanced suspension technologies, ride control and braking.

Clean Air

o Designs, manufactures and distributes a variety of products and systems designed to reduce pollution and optimize engine performance, acoustic tuning and weight.

o Supports light vehicle, commercial truck and off-highway customers.

Powertrain

o Designs, manufactures and distributes a variety of OE powertrain products for light vehicle, commercial truck, off-highway and industrial applications.

o Supports customers for use in new vehicle production and OES parts to support their service and distribution channels.

In 2020, we developed a framework to align our strategic approach to sustainability and focus our efforts on our key impacts. Based on Tenneco's ESG priorities, we organized the pillars to define our future performance and recognize opportunities for improvement across our business. Our strategy, The Road to Making Tomorrow Better, reflects stakeholder input, our material topics and critical elements of our culture. We continue to operate with a foundation of responsibility and accountability as we implement our strategy to generate positive impacts related to People, Planet and Products.

We cultivate a winning culture based on our core values that guide our thinking, behaviors and success. By committing to these values, we pledge to maintain accountability and preserve our stakeholders' trust as we drive our business forward. Our core values reflect our dedication to lead with Integrity Always, to act as One Team, to produce solutions that Make Tomorrow Better and to perform with a Will to Win. Together, we create a stronger Tenneco through our dedication to upholding these values and achieving operational excellence.

To guide our strategy, we established targets that will drive our performance. These goals incorporate our baselines and offer opportunities to create measurable impacts, which we believe can be a competitive advantage. We will publish goals regarding inclusion and diversity later this year once they are developed by our new IDEA (Inclusion – Diversity – Equity – Action) Board.

We value regular communication with our stakeholders, including team members, customers, investors, communities, suppliers, government and regulatory agencies and trade associations. These dialogues help maintain positive relationships with stakeholders and provide essential input into our sustainability reporting process.

This report includes forward-looking statements which are subject to risks and uncertainties that could cause our results to differ materially. All forward-looking statements should be considered in the context of the risk and other factors detailed in our Securities and Exchange Commission filings.

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 2020	December 31 2020	Yes	2 years

C0.3

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

- Argentina
- Australia
- Belgium
- Brazil
- Canada
- China
- Czechia
- Denmark
- France
- Germany
- Hungary
- India
- Italy
- Japan
- Mexico
- Morocco
- Philippines
- Poland
- Portugal
- Republic of Korea
- Romania
- Russian Federation
- Singapore
- South Africa
- Spain
- Sweden
- Thailand
- Turkey
- United Kingdom of Great Britain and Northern Ireland
- United States of America
- Viet Nam

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

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
Board-level committee	Tenneco's Board of Directors has three standing Board-level committees: Audit, Compensation and Nominating and Governance. The Nominating and Governance Committee is the board committee responsible for climate-related issues. Their responsibilities are explicitly described in their public charter whereby reference to 'sustainability' includes all climate-related issues. The Nominating and Governance Committee, have authority and responsibility for Tenneco's company policies and strategies related to matters of sustainability and corporate responsibility that are of significance to the company and its stakeholders. They also review and make recommendations to the Board of Directors on shareholder proposals submitted for inclusion in the company's proxy materials, which relate to governance, corporate responsibility, sustainability, or political spending issues. Finally, they take an active role in the review and approval of our annual Sustainability Report. The Board and all committees play a critical role in the identification and management of risk. The Board receives presentations throughout the year from senior management, leaders of our business units and functional groups regarding the risks we face. Management annually provides a comprehensive strategic review to the Board, which includes a discussion of the major risks faced by our company and our strategies to manage these risks, including those associated with economic, environmental and social topics. In 2020, the Board and its committees supported management to make several major climate-related decisions: 1) Agreed to establish new climate change targets, which we are now working towards and expect to be published later in 2021 2) After establishing our ESG council in 2019, in 2020 management commissioned a sustainability materiality assessment, which has produced our new sustainability strategy 3) In 2020, members of senior management and our Chairman of the Board expanded our governance outreach to solicit stockholder perspectives and receive valuable, feedback on governance, executive compensation, sustainability and related matters. This outreach was in addition to regular participation in investor, community and industry meetings throughout the year to discuss performance, environmental, social and governance topics, and share its perspective on business / industry developments.

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 risk management policies Overseeing major capital expenditures, acquisitions and divestitures	<Not Applicable>	Our Board recognizes that, although risk management is primarily the responsibility of the company's management team, the Board plays a critical role in risk oversight, including the identification and management of risk. The Board's involvement in risk oversight involves the full Board and all three committees. Management, at least annually provides a comprehensive strategic review to the Board, which includes a discussion of the major risks faced by our company and our strategies to manage these risks, including those associated with economic, environmental and social topics. Quarterly, at all regularly scheduled meetings, our SVP ESG provides an update on ESG matters and reports directly to the Nominating and Governance Committee who then reports to the full Board.

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 (Senior Vice President and Chief Environmental, Social and Governance (ESG) Officer)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other C-Suite Officer, please specify (Executive Vice President, Chief Human Resources)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	As important matters arise
Other, please specify (Executive Leadership Team members.)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	As important matters arise

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).

Our Executive Leadership Team holds ultimate responsibility for climate-related issues within their oversight of ESG (environmental, social and governance) as a whole. The Executive Leadership Team is formed of C-Suite individuals with responsibility for oversight of our different business units (Motorparts, Clean Air, Powertrain and Performance Solutions), and operating/ support systems (HR, EHS & S, Communications, Supply Chain, Information and ESG). The Executive Leadership Team is responsible for the review, evaluation and update to our sustainability goals and key performance indicators within our business units.

Within the Executive Leadership Team there are two specific C-Suite Roles that take additional individual responsibility for driving our climate related response.

1) Senior Vice President and Chief ESG Officer – this individual drives our ESG strategy and enterprise goals, and reports directly to the CEO. The ESG council is led by the ESG Director and formed of functional leaders from Environmental Health and Safety, Legal, Human Resources and Talent Management, Finance, Engineering, Supply Chain and Logistics. The ESG council advises the Executive Leadership Team on progress and determines how to drive long-term shareholder value. The SVP and Chief ESG Officer's role enables a holistic approach to ESG, compliance and risk management and promotes alignment across Tenneco. Assessment, monitoring and alignment across Tenneco of climate-related risks and opportunities is a specific focus for this individual.

2) The Executive Vice President, Chief Human Resource Officer (CHRO) – this individual oversees Tenneco's Environmental, Health, and Safety (EHS) activities and report directly to the Chief Executive Officer. In 2020, the role of VP of Environmental, Health & Safety, and Corporate Security was established as a direct report to the CHRO. This role leads the EHS division with direct oversight and responsibility of our climate-related operational goals, including our greenhouse gas reduction, energy efficiency and renewable energy goals, responsibility for developing strategies and implementing initiatives to ensure successful achievement of these goals. The EHS team is staffed with a Global Sustainability Leader and a Global Sustainability Analyst for leading and coordinating our climate related data collection. Climate-related data and performance reporting is collected at site and regional level (depending on the data type). This is in turn collated, reported and signed off by EHS leads of each of our four business units, who report performance and progress on climate-related issues via our Enterprise level EHS team through to the EVP, CHRO.

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 incentivized	Comment
All employees	Monetary reward	Behavior change related indicator	One of Tenneco's core corporate values is "Make Tomorrow Better" – and one way we do that is through our Global Corporate Social Responsibility and Sustainability programme. During 2020, we have created a strategy and roadmap towards "Making Tomorrow Better" which is divided into three key pillars: People, Planet and Products. By way of monetary incentive, we recognize the contributions initiated and made by our employees around the world through the TEN10 program. This program celebrates those who exemplify leadership through our shared values out in their communities (this may be through participation in local events, fundraisers, or philanthropic contributions). As such, TEN10 awards may be made for community-based activities that are aligned to climate-related and environmental issues. Projects that result in decrease energy or water use, GHG emissions or less waste will also qualify for submission. Each year, we recognize ten individual finalists and one team as exceptional examples of our values in action. Winners received a \$1,000 check and a donation of \$10,000 to a cause of their choice, for a total of \$110,000 in donations. Their stories exemplify Tenneco culture, which is united by a common vision, shared values, and a commitment to always operate with the highest ethics and integrity everywhere we do business.
All employees	Monetary reward	Behavior change related indicator	Employees across the business have environmental and climate related targets integrated into their personal development goals. Successful achievement of these targets and goals contribute to career development and progression, which will result in enhanced financial reward.

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	5	Tenneco's annual operating plan (AOP) includes detailed initiatives on revenue, margin, product development, and capex spending which are aligned with short term regulatory risks and technology needs of the customer.
Medium-term	5	10	The business units' strategic plans identify and plan for opportunities in the 5 to 10 year timeframe using medium terms growth forecast projections for future regulations and technologies.
Long-term	10	50	Corporate strategic plan and portfolio decisions look at 10 + year growth forecast projections for clean air regulations and technologies.

C2.1b

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

Those material risks and opportunities that pose the greatest financial and strategic risk to our business are sub-categorised (business, operational and financial; industry; intellectual property and legal risks and opportunities) and our responses to these are summarized in our annual public 10K reporting, per SEC guidelines. For our risks we rate, review and manage against several dimensions: risk impact, risk likelihood, risk velocity and our management preparedness for that risk should it happen.

In our present internal ERM process, risks we would deem of a critical financial impact are those that that would have an impact greater than \$25m dollars. Impacts that we would deem critical from a strategic perspective are those that would create widespread negative customer impact or critical loss of 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

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

Annually

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Our risk management process identifies risks that are of substantive financial or strategic interest in the following way: Our company-wide Enterprise Risk Management (ERM) process is fully refreshed annually, and includes climate-related risk and opportunities as part of our review and management of forthcoming ESG issues. Our Audit committee reviews and discuss the company' major financial risk exposures and the steps management has taken to monitor and control those exposures; reporting directly to the Board of Directors on the results of those discussions. Typically the Audit committee and Board of Directors review and ensure strategic response to our medium-term and long-term climate related risks and opportunities. Those material risks and opportunities that pose the greatest financial and strategic risk to our business are sub-categorised (business, operational and financial; industry; intellectual property and legal risks and opportunities) and our responses to these are summarized in our annual public 10K reporting, per SEC guidelines. For our risks we rate, review and manage against several dimensions: risk impact, risk likelihood, risk velocity and our management preparedness for that risk should it happen. Risks and opportunities related to our direct operations, upstream and downstream considerations are taken into account. Examples of these are as follows: Direct operations– continuity of energy supply; natural disasters and severe weather causing supply chain and/or disruption to direct operations; change of after-market product mix in the face severe winter weather; staff retention, Upstream– increasing/ volatile fuel and utility prices; stricter market level Government regulation around vehicles emissions and removal of fossil fuel vehicles from sale; climate related tax considerations; cost of current / future legal action around environmental waste / remediation and pollution control Downstream- changing consumer demand for ICE (internal combustion engine vehicles) versus electrification; dependency on large customers that are changing their own product mix and operations to respond to climate-related risks and opportunities i.e. public declarations from OEMs seeking carbon neutrality by 2040 and phase out of fossil fuel vehicles by 2035; the opportunity posed through innovation in relation to future electrification, autonomy and shared mobility in vehicles. Rolling up into our integrated risk management approach, at a business unit and asset level, we manage a greater volume of more localised climate related risks and opportunities. These risks and opportunities are typically those that have a short- and medium-term horizon; and as such are reviewed more than once per year as the impacts are near term and require faster response. Our business unit EHS Leads and Business Unit Chief Engineers track and manage the outcomes of climate related risks and opportunities presented in our operations, upstream and downstream of our business for example: local energy supply issues, local environmental regulation; local product regulation; product development opportunities and direct / indirect change to consumer demand for our different lines, mitigation of climate change impacts in our supply chain. At an asset level, we manage climate-related risks and opportunities through our ISO accredited management systems. As of 2020, 89% of our global manufacturing sites are accredited to ISO 14001 (environmental) and 15% have ISO 50001 (energy). This enables local risks and opportunities to be monitored on a continuous improvement basis, ensuring internal and external audit of system content and controls, and providing a clear communication channel for escalation of risks and opportunities from asset level, through our business unit EHS Leads back to the central Enterprise level (if required). Our asset level response to impending risks and opportunities is key to us meeting our global climate related targets. At the Executive Leadership Team level, through our Senior Vice President and Chief ESG Officer and Customer Relations teams, we interface with external stakeholders to our business, through which we identify emerging climate related risks and opportunities. These are explored for integration into our ERM system where they require management and response. These may be identified through: active engagement with our customers (the OEMs), active engagement with our upstream suppliers through conferences and action groups, response to questions from investors at shareholder meetings, or customer requests through EcoVadis/CDP. Finally, in 2020 we have also commissioned and completed an independently conducted ESG materiality assessment which helped us to prioritize our climate-related risks and opportunities alongside wider social and governance needs. This involved engagement with 40 cross-functional leaders from around our business to ensure the most up-to-date view has been formed. To ensure an holistic market view we included direct competitors, peers, customers and manufacturers from similar markets that we consider to embody best practice. Case study: Physical risk: Through our annual insurance review process we receive asset level recommendations in respect of our risk exposure to physical risks such as flooding, storm damage, wider extreme weather and seismic events depending on property location. The risks are clearly categorised, ranked and loss expectancy / cost to address are calculated. We respond to the recommendations of this assessment as appropriate. Case study: Transition risk: Through our ERM system we manage upstream environmental regulation. As such we are aware that according to the U.S. Environmental Protection Agency we may be a potentially responsible party ("PRP") for the cost of remediating hazardous substances pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). PRP designation typically requires the funding of site investigations and subsequent remedial activities. Many of the sites that are likely to be the costliest to remediate are often current or former commercial waste disposal facilities to which numerous companies sent wastes. Whilst we believe our exposure for liability at these sites is limited, on a global basis, we have also identified certain other present and former properties at which we may be responsible for cleaning up or addressing environmental contamination. As such we are seeking to resolve our responsibilities for those sites for which a claim has been received. As of December 31, 2020, we have an obligation to remediate or contribute towards the remediation of certain sites, including the sites discussed above at which it may be a PRP. Our estimated share of environmental remediation costs for all these sites is recognized in the consolidated balance sheets on a discounted basis. This is identified as \$34m for fiscal year end December 31, 2020.

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	We have partnered with a third party to provide a regulatory registry framework for all countries we operate. This framework assesses legal and other requirements associated with our operations in respect of air emissions, climate change, renewable energy, waste management and emergency management. The assessment tools are updated annually. Products: Our Product Development and Launch system identifies regulatory risks and opportunities and considers these in the strategies and roadmap to develop new products through the Tenneco Product Launch System (TenPLUS). Operations: Current climate-related regulation is always relevant to Tenneco. As a global manufacturer we need to comply with legislation across multiple markets around environmental pollution, emissions controls, protection, biodiversity, emissions and supply chain consideration. This is an integral part of our risk management process. By way of a specific example: Tenneco has operations in 32 different global markets, including Europe. For our largest European manufacturing facilities, where we are near or may exceed the future thresholds for this scheme, we are required to monitor, measure, and retire or trade allocated allowances. As the cap on energy usage / generation capacity is lowered over time (hand in hand with associated emissions), the likelihood of us having to purchase extra carbon allowances increases. As such this climate related legislation is monitored as part of our EHS processes in Europe as it presents financial, operational and reputational risk to our European business.
Emerging regulation	Relevant, always included	Climate related regulation is constantly evolving and being updated. With a global footprint we must stay abreast of our obligations across our direct operations, upstream and down stream supply chain and across both the short, medium and long term horizon. We have engaged with an EHS related network organization that provides on-going forecasting of environmental, health and safety related changes across the regulatory landscape. For example, jurisdictions around the world have announced plans to limit the production of new diesel and gasoline powered vehicles in the future. The EU is being pushed by a number of member states to announce a ban sales of fossil fuel vehicles by 2030; the UK has already stated that this as part of their Green plan. This emerging regulation will impact the vehicles type the OEMs can sell in these jurisdictions in the short-medium turn horizon and as such presents both risk and opportunity to our Clean Air and Powertrain businesses. With this in mind we are regularly reviewing and updating our strategy across all business units to mitigate this risk.
Technology	Relevant, always included	Risk related to not keeping our technology ahead of demand for fuel and emissions economy requirements is constantly evolving. We monitor this risk through our core ERM process, and down through our Business Unit Chief Engineers. Each business unit will review customer feedback, assess market risk and forecasts, and translate customer and market technology requirements into product strategies, road maps and prioritized product plans. Failure to act on these risks may jeopardise contracts in place, or risk our customer going to competitors. For example, ensuring we are on top of technology advancements, enables our customers to meet fuel economy regulations and reach their own emission targets for their sustainability programs. Strategies we have in place to mitigate technology risks include: • Supplying parts for all vehicle types, including hybrids and battery electric vehicles; • Reducing noise and vibrations for quieter engines; • Increasing engine efficiencies for commercial truck and off-highway segments; • Reducing copper usage and limiting friction in brakes; and • Preventing vehicle deterioration and waste.
Legal	Relevant, always included	This risk type is currently most applicable in terms of exposure to lawsuits related to our climate-related disclosures and in relation to environmental compliance within our operations. We consider this risk to be closely linked to reputational risk. As previously referenced, we have partnered with a third party to provide a regulatory registry framework for all countries in which we operate. This framework assesses legal and other requirements associated with air emissions, climate change, renewable energy, waste management and emergency management. The assessment tools are updated annually. We have engaged with an EHS related network organization that provides on-going forecasting of environmental, health and safety related changes across the regulatory landscape. Through this ERM system we manage upstream environmental regulation and the possibility of litigation. By way of example, we are aware that according to the U.S. Environmental Protection Agency we may be a potentially responsible party ("PRP") for the cost of remediating hazardous substances pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). PRP designation typically requires the funding of site investigations and subsequent remedial activities. Many of the sites that are likely to be the costliest to remediate are often current or former commercial waste disposal facilities to which numerous companies sent wastes. We believe our exposure for liability at these sites is limited. On a global basis, we have also identified certain other present and former properties at which we may be responsible for cleaning up or addressing environmental contamination. As such we are seeking to resolve our responsibilities for those sites for which a claim has been received. As of December 31, 2020, we have an obligation to remediate or contribute towards the remediation of certain sites, including the sites discussed above at which it may be a PRP. Our estimated share of environmental remediation costs for all these sites is recognized in the consolidated balance sheets on a discounted basis and the amounts at December 31, 2020 and 2019 were \$34m and \$36m.
Market	Relevant, always included	We assess climate risk across our market on a regular basis as we are impacted through exposure in our direct operations (increasing fuel and raw materials prices), upstream (changes to OEM product mix requirements due to their own exposure to regulatory requirements) and downstream (changes in end-consumer preference such as autonomous vehicles, move to electrification). For example, one of our major customers - General Motors (11% of 2020 net sales) recently joined other vehicle manufacturers, including Ford (10% of 2020 net sales), Nissan and Volvo, in committing to becoming carbon neutral after announcing its plans to reach carbon neutrality by 2040 and to stop selling gasoline powered light vehicles by 2035. To achieve these goals, General Motors is investing substantially in electrification. The increased adoption of electrified powertrains could result in lower demand for some of our products. There has also been an increase in consumer preferences for car and ride sharing, as opposed to automobile ownership, which may result in a long-term reduction in the number of vehicles per capita. The evolution of the industry towards connectivity, autonomy, shared mobility and electrification has also attracted increased competition from entrants outside the traditional light vehicle industry. Failure to innovate and to develop or acquire new and compelling products that capitalize upon new technologies in response to OE and consumer preferences could have a material adverse impact on our results of operations
Reputation	Relevant, always included	Protection of our brand and being recognized as a company with a high culture of integrity is important to us both externally and internally. If we do not manage this risk we may lose market share, fail to maintain the trust of internal and external stakeholders or fail to attract and retain talent in our business. Tenneco business units review customer feedback, assess reputational risk, and translate customer and market requirements into product strategies, road maps and prioritized product plans. Customer and market requirements are subject to and aligned with increasing regulations in fuel economies. For example, our reputation for being at the forefront of the market in relation to energy efficient products, Clean Air technology and the most efficient ICE components is particularly important where this helps our OEM customers to meet their own climate targets. Failure to support these plans could jeopardise future contracts and therefore revenue.
Acute physical	Relevant, always included	In addition to our active emergency preparedness plan which includes plans for all applicable climate related emergencies, we have partnered with a third party to provide real-time emergency event notifications which include natural disasters and acute climate updates. These events are monitored and assessed by our Security team for impact on our operations and shared/communicated appropriately. Given our global property portfolio, we are exposed to extreme weather events when they occur. Our Business Unit EHS Leads are also responsible for keeping track of properties where we are particularly vulnerable to risk of hurricanes, floods and water security could affect business operations, for example in the case of continuity of power supply, or concerning supply chain interruption. For example, within the Tenneco Business System, the Integrated Supply Chain element allows logistics to be optimized within our supply chains, which includes assessing physical risks which could disrupt the supply chain. As a second example, impacts from climate extremes such as heat, droughts, floods, cyclones, fires are also review as part of our annual insurance renewal process .
Chronic physical	Relevant, always included	Given our global property portfolio we are exposed to chronic weather events over prolonged periods of time. Our Business Unit EHS Leads keep track of properties where risk of long term climatic changes such as sustained high temperatures could affect business operations, for example in the case of continuity of power supply, or concerning supply chain interruption. For example, in India our facilities are often exposed to prolonged high temperatures and local infrastructure weaknesses threaten security of power supply. As such in this jurisdiction, we manage our response using onsite generation and support local grids by exporting spare capacity back. This ensures resilience for our business and provides wider support across the local grid connection, thus also benefiting communities around us.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Market	Changing customer behavior
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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

Tenneco is dependent on several major vehicle manufacturers such as General Motors and Ford for future revenue. During the fiscal year ended December 31, 2020 – these two customers accounted for 11% and 10% of net sales respectively. The loss of all or a substantial portion of our revenues from these, or our wider large-volume customers could have a material adverse impact on our business. Circumstances that could result in a loss of revenues from our large-volume customers include, particularly with respect to original equipment (OE) light vehicle revenue: a) the transition away from the production of gasoline powered vehicles (such as the most recent announcements by General Motors and Ford) b) transition to electrified powertrains, whether voluntary or mandated. We know that our key clients have recently committed to becoming carbon neutral by 2040 and to stop selling gasoline powered light vehicles by 2035. The increased adoption of electrified powertrains could result in lower demand for some of our products. As a result Tenneco is developing and capitalizing on opportunities associated with hybrid and more fuel-efficient light vehicles, further diversifying our portfolio into commercial truck, off-highway and industrial production applications, as well as evolving with the electrification of the market.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

4075500

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The financial impact is calculated on the basis of 2020 figures with 39% of value-add revenue related to OE light vehicle ICE vehicles. Hypothetically, if there is a 1% decline of OE light vehicle ICE revenue converted to BEV (Battery Electric Vehicles), it could impact 1% of the enterprise Adjusted EBITDA related to OE light vehicle ICE revenue – or up to \$4,075,500 (39% x \$1,045M x 1%)

Cost of response to risk**Description of response and explanation of cost calculation**

To mitigate loss of such customers, and take into account increasing regulation, Tenneco are responding by targeting a shift in value-add revenue mix; moving from the percentage attributable to original equipment (OE) light vehicle ICE (Internal Combustion Engine) products of 39% in 2020 to less than 20% over the long term horizon . Please see our SEC filings, earnings and investor presentations for more information. At Tenneco, we have four different business groups [or segments]. Although for many years our Powertrain business was primarily concerned with the ICE (Internal Combustion Engine) vehicle market, across all four of our business units we are now developing products that support the next generation of hybrid and battery electric vehicles while also enabling more efficient internal combustion engines with fewer emissions. We drive advancements and contribute to improvements across a wide spectrum of vehicles, including those that incorporate alternative fuels, because our diverse portfolio of products applies to vehicles with multiple fuel types and propulsion systems. These strategies are being deployed to maintain market share and mitigate the risk of losing our large-volume customers. We are well-positioned to align our business with this global change, because most of our products in our Performance Solutions and Motor parts business units are fuel-agnostic and therefore can be used on hybrid and battery electric vehicles. By contributing fuel-agnostic components to these vehicles, we integrate our business with this advancing technology and continue to drive improvements in efficiency across the automotive industry. Developments include: • Supplying parts for all vehicle types, including hybrids and battery electric vehicles; • Increasing engine efficiencies for commercial truck and off-highway segments; • Reducing copper usage and limiting friction in brakes Case study 1: The Tenneco DLC (Diamond Like Coating) range of piston ring coatings, provide the ultimate combination of low friction and exceptional durability in the most critical engine environments. DLC coated piston rings contribute to fuel economy savings up to 1.5%. Case Study 2: Approximately a third of the new business pipeline for Performance Solutions focuses on battery electric vehicles or hybrids. In 2021, we have planned multiple launches of programs for battery electric vehicles, hybrids or e-bike programs as we facilitate advancements in the industry.

Comment

Information relating to the 'cost of response to risk' is not available

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Technology	Transitioning to lower emissions technology
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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

Tenneco monitors technology developments, regulatory developments, customer demands, and new vehicle production. Per our 10K SEC filing, for the foreseeable future, it is expected that the majority of the powertrains for light and commercial vehicles will be gasoline and diesel engines (including hybrids, which combine a battery electric vehicle with a combustion engine). Emissions regulations will however continue to tighten in future, resulting in additional content in our products. If we do not innovate appropriately and quickly enough, the evolution towards connectivity, autonomy, shared mobility and electrification could adversely affect our business. The light vehicle industry is increasingly focused on the development of advanced driver assistance technologies, with the goal of developing and introducing a commercially viable, fully

autonomous vehicle. Continued focus on climate change and environmental sustainability is increasing the expectations for the auto industry to develop more fuel-efficient solutions from consumers and governments worldwide. The evolution of the industry towards connectivity, autonomy, shared mobility and electrification has also attracted increased competition from entrants outside the traditional light vehicle industry. Constant investment in R&D is required to maintain market share.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Note the financial impact to us is offset with content gains on ICE products and growth in commercial truck, off-highway and industrial product applications. Tenneco however recognizes that a failure to innovate and to develop or acquire new and compelling products that capitalize upon new technologies in response to OE and consumer preferences could have a material adverse impact on our results of operations. Clients may choose other suppliers if the company and products have a lower carbon impact or are more environmentally friendly resulting in a reduced demand for our products.

Cost of response to risk

273000000

Description of response and explanation of cost calculation

During 2020 alone our Engineering, research and development costs were \$273m. Whilst not all of our R&D costs are directly attributable to technology innovations responding directly to climate change, this magnitude provide a proxy for the high level of investment in our response to evolving technology. Tenneco monitors technology developments, regulatory developments, customer demands, and new vehicle production. For the foreseeable future, it is expected that the majority of the powertrains for light and commercial vehicles will be gasoline and diesel engines (including hybrids, which combine a battery electric vehicle with a combustion engine). As a result Tenneco is pushing and development and capitalizing on opportunities associated with hybrid and more fuel efficient vehicles. Our technology advancements enable our customers to meet fuel economy regulations and reach their own emission targets for their sustainability programs. We are well-positioned to align our business with this global change, because most of our products in our Performance Solutions and Motorparts business units are fuel-agnostic and therefore can be used on hybrid and battery electric vehicles. By contributing fuel-agnostic components to these vehicles, we integrate our business with this advancing technology and continue to drive improvements in efficiency across the automotive industry. Recent technology innovations include: Case study 1 – Crushshield® System Protection: This self-wrapping sleeve is designed to provide superior cut-through protection for electrical cables in hybrids and electric vehicles. The tough, multilayer construction enables the product to absorb and disperse energy, and the ability to prevent cut-through attracts vehicle manufacturers concerned with isolating hybrid and electric vehicle cables from the vehicles' electricity-conducting chassis in crash situations. There was an accelerating interest from major OEMs in this in 2020. Case study 2 - Powertrain: We design specialized coatings and components that reduce mass and friction and improve thermal and mechanical resistance, which support OEMs in reaching their goals for engine enhancements. For example, our light vehicle diesel steel pistons offer proven carbon emission reduction, and our IROX 2 polymer bearing coatings provide increased reliability to support higher-density, more efficient engines. In 2020, we won a PACE Award for our IROX 2 innovation.

Comment

Financial information related to this risk is not presently available.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Upstream

Risk type & Primary climate-related risk driver

Legal	Exposure to litigation
-------	------------------------

Primary potential financial impact

Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Through our ERM system we manage upstream environmental regulation. As such we are aware that according to the U.S. Environmental Protection Agency we may be a potentially responsible party ("PRP") for the cost of remediating hazardous substances pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). PRP designation typically requires the funding of site investigations and subsequent remedial activities. Many of the sites that are likely to be the costliest to remediate are often current or former commercial waste disposal facilities to which numerous companies sent wastes. Whilst we believe our exposure for liability at these sites is limited, on a global basis, we have also identified certain other present and former properties at which we may be responsible for cleaning up or addressing environmental contamination.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

34000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Our estimated share of environmental remediation costs for all these sites is recognized in the consolidated balance sheets on a discounted basis and the amount for fiscal year end December 31, 2020 is \$34m.

Cost of response to risk

Description of response and explanation of cost calculation

As such we are seeking to resolve our responsibilities for those sites for which a claim has been received. As of December 31, 2020, we have an obligation to remediate or contribute towards the remediation of certain sites, including the sites discussed above at which it may be a PRP. Our estimated share of environmental remediation costs for all these sites is recognized in the consolidated balance sheets on a discounted basis and the amount for fiscal year end December 31, 2020 is \$34m.

Comment

Further financial information related to this risk is not presently available.

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

Shift in consumer preferences

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

The evolution of alternative powertrain technology, including the increased adoption of fully electric and hybrid powertrains, will also create further opportunities for increased ride performance and NVH (noise, vibration and harshness) capabilities, as consumers look for smoother, quieter, and more efficient rides. Engine downsizing and hybridization will lead to a proliferation of NVH requirements per platform as road noise and other NVH properties that were once masked by engine noise become more apparent to consumers. Furthermore, fully electric vehicles ("EVs") will likely have a suite of fundamentally different NVH, braking, and ride performance requirements. Our capabilities in the suspension, braking, and NVH performance materials categories provide the opportunity to develop solutions to maximize driving comfort, ride performance, and motion management for consumers worldwide in the increasing electrification and hybridization of the global vehicle fleet.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Information not available

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

We manufacture OE products for ride performance, emission systems and powertrains for nearly all OEMs worldwide. In addition, we offer world-leading brands for innovative products, including brands that have successfully delivered solutions for more than 100 years. As our business evolves, our Motorparts and Performance Solutions business units, as well as our commercial truck, off-highway and industrial offerings, will drive our growth. Over the mid- to long-term future, we target over 80% of our revenues as unrelated to light vehicle internal combustion engines and we will continue to maximize value for our shareholders as we develop pipelines around battery electric vehicles and hybrids. We are well-positioned to align our business with this global change, because most of our products in our Performance Solutions and Motorparts business units are fuel-agnostic and therefore can be used on hybrid and battery electric vehicles. By contributing fuel-agnostic components to these vehicles, we integrate our business with this advancing technology and continue to drive improvements in efficiency across the automotive industry. For example, product lines in our Performance Solutions business unit are agnostic to powertrain technology. Approximately a third of the new business pipeline for Performance Solutions focuses on battery electric vehicles or hybrids. In 2021, we have planned multiple launches of programs for battery electric vehicles, hybrids or e-bike programs as we facilitate advancements in the industry. Case study: Standing Wave Management This innovative strategy provides acoustic openings in pipes to reduce standing waves and tailpipe boom noise. We recognized the customer needs for both compact design and sound quality, and we also developed this solution to enable customers to meet regulatory targets for criteria pollutants, fuel economy and muffler volume. Developed for each specific application, Standing Wave Management reduces engine order noise levels, acoustic tuning volume and hydraulic flow leakage to the surrounding environment. The reduction in complexity allows a decrease in weight and cost, and the compact design also is advantageous for use in hybrid vehicles.

Comment

Cost of management is directly aligned with our business strategy and investment in research and development.

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 through access to new and emerging markets

Company-specific description

Fuel economy regulations are driving changes in advanced internal engine design resulting in increased exhaust, thermal management, emissions controls and vehicle suspension system content to improve fuel efficiency and lightweight vehicles. This presents an opportunity for technical innovations to make new offerings to specific markets and global regions to address the need for improved fuel efficiency. In addition, more stringent fuel economy regulations are leading to growth in light vehicle production, battery electric vehicles, and hybrids. Specifically, we see growth in China and India where more stringent regulations are leading to higher demand.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Information not currently available

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

Tenneco's technology roadmaps ensures that we have the right technologies at the right times to meet, and exceed, the needs of our customers. For example - our Clean Air emission control engineering centers deliver the latest technologies to customers throughout the world. These linked engineering centers share expertise and capabilities to design and develop solutions for passenger car, light truck, commercial vehicle, locomotive and specialty vehicle applications. Our emission control research and development efforts focus on innovations to support immediate and anticipated Case study 1: Our Clean Air business unit also recently partnered with Eaton to jointly develop our Cold Start Thermal Unit with Eaton's TVS® blower technology. This development will produce an integrated exhaust thermal management system, which will enable commercial truck and light vehicle manufacturers to meet new ultra-low NOx emissions regulations. The system will directly heat the vehicle's aftertreatment system to enable efficient conversion of NOx through the full range of operating conditions. By leveraging this collaboration, our business reduces harmful emissions and illustrates advancements in clean air technology. In addition we are well-positioned to align our business with this global change, because most of our products in our Performance Solutions and Motor parts business units are fuel-agnostic and therefore can be used on hybrid and battery electric vehicles. By contributing fuel-agnostic components to these vehicles, we integrate our business with this advancing technology and continue to drive improvements in efficiency across the automotive industry. Developments include: • Supplying parts for all vehicle types, including hybrids and battery electric vehicles; • Increasing engine efficiencies for commercial truck and off-highway segments; • Reducing copper usage and limiting friction in brakes; and Case study 2 - Powertrain: We design specialized coatings and components that reduce mass and friction and improve thermal and mechanical resistance, which support OEMs in reaching their goals for engine enhancements. For example, our light vehicle diesel steel pistons offer proven carbon emission reduction, and our IROX 2 polymer bearing coatings provide increased reliability to support higher-density, more efficient engines. In 2020, we won a PACE Award for our IROX 2 bearing coating.

Comment

Further financial information related to this opportunity is not presently available.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced indirect (operating) costs

Company-specific description

As a global manufacturer with over 270 sites, the cost of energy use in our operations, and management of environmental risks such as pollution and removal of generated waste is significant. Therefore, deploying energy and environmental management strategies to reduce these costs is a significant opportunity to our business and impacts our bottom line. We look for opportunities to reduce energy and resource usage throughout our operational sites by manage our global manufacturing sites in accordance with the ISO 14001 Environmental Management System standard and ISO 50001 Energy Management System standard. These frameworks provide guidance to improve our management efforts and validate our approach through certifications. We aim to continually increase the number of locations certified to these standards.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Further financial information related to this opportunity is not presently available.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

As of 2020, 89% of our global manufacturing sites are certified to the ISO 14001 Environmental Management System standard, and 15% of our global manufacturing sites are certified to the ISO 50001 Energy Management System standard. Our facilities continue to target specific risk controls and improvements that align with these standards to drive performance. In 2020, we completed multiple projects to target energy efficiency improvements in our facilities. We also adjusted our collective approach to renewable energy by beginning to implement a central tracking system to collect data about our energy sources. Across our business units, we continue to update our processes and analyze the results of our projects. In 2020, various sites converted to LED lights, optimized ventilation systems, further implemented pre-isolating underground heat piping and installed new burners for furnaces. We continue to engage in projects that improve our energy efficiency and reduce our emissions footprint at our sites. In addition, we encourage our plants to participate in the Energy Star Treasure Hunt, which engages team members to seek opportunities to further save energy. Case study 1- During 2020 we have rolled out an LED lighting substitution at our Edenkoben facility in Germany which will cost ~\$171k; saved around \$60k per annum, with a 4-10 year payback horizon and attributable carbon savings of 70 tCO2e per annum. Case study 2- In 2020, we enhanced our dust recycling efforts at certain sites to reduce our waste to landfill. During production, slabs of materials produce dust during the cutting and grinding stage. We have shipped dust from our dust collectors to an external partner in past years, but we were recently able to send material from additional dust collectors to our recycling partner. Now, most of our dust collectors provide dust that is recycled either back into our own processes or sent to our external partner. Supplementing efforts to reduce our overall waste generation, this initiative has significantly reduced the amount of dust that we send to landfill. Case study 3 - to improve energy independence and resilience in India, where continuity of power supply may be threatened by long term transition risks such as continuously elevated temperature that overstress local power infrastructure; we are considering investing in a solar farm. This would afford us the benefits of both lower carbon intensity energy suppliers and improved business continuity.

Comment

Further financial information related to this opportunity is not presently available.

C3. Business Strategy

C3.1

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

Yes

C3.1b

(C3.1b) Does your organization intend to publish a low-carbon transition plan in the next two years?

	Intention to publish a low-carbon transition plan	Intention to include the transition plan as a scheduled resolution item at Annual General Meetings (AGMs)	Comment
Row 1	Yes, in the next two years	No, we do not intend to include it as a scheduled AGM resolution item	Tenneco Inc are committed to sustainability and producing a low carbon transition plan. As of now we do not have visibility as to whether this would be a scheduled AGM resolution item in this same timeframe.

C3.2

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

No, but we anticipate using qualitative and/or quantitative analysis in the next two years

C3.2b

(C3.2b) Why does your organization not use climate-related scenario analysis to inform its strategy?

As of 2020, Tenneco is still reasonably early in its sustainability journey. Given our organisations scale, recent growth through acquisition and significant global scope 1 and 2 footprint from manufacturing, we are currently focused on understanding and managing our direct operational impacts as a priority. In the next two years, however, we aim to expand our assessment, by quantifying our wider supply chain impacts (scope 3), enabling us to understand in greater depth where our most significant climate related impacts are outside of the current boundary we consider. This will not only help us understand the magnitude of our impact, but also help us to identify the levers we can use to reduce this impact. Once we have made this evaluation, we are considering committing to a Science Based Target, and as part this journey we expect to consider use of climate-related scenario analysis.

C3.3

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

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Integration of environmental strategy with our business strategy is inherent to Tenneco’s business elements: Sales and Commercial Operations, Product Development / Launch, Manufacturing Operations, and Integrated Supply Chain Management. Risks and opportunities identified in our four business systems inform overall business strategy. For example, the product management component of our Sales and Commercial operations reviews customer feedback, assesses reputation risk, and translates customer and market requirements into product strategies, road maps and prioritized product plans. Our customers face risks and opportunities driven by legislation, changes in consumer behaviour, and technology advances. More stringent fuel economy regulations and a change in consumer behaviour towards more fuel-efficient vehicles and fuel types presents us with opportunities to investigate, propose and develop new prototype products. Successful prototypes then migrate into Tenneco’s Program Launch system. By way of a strategic product example - the Tenneco DLC (Diamond Like Coating) range of piston ring coatings, including CarboGlide and DuroGlide, provide the ultimate combination of low friction and exceptional durability in the most critical engine environments. DLC coated piston rings contribute to fuel economy savings up to 1.5%. In 2020, we also announced a new and exciting area of development in ‘self-healing’ coatings, which have the ability to self-generate during engine operation.
Supply chain and/or value chain	Yes	To meet the stakeholder expectations and maintain business continuity, we mitigate environmental and social risks in our supply chain and enforce our procurement standards. As part of our commitment to human rights, we perform due diligence and evaluate our suppliers regularly, and we comply with requirements related to conflict minerals. We also continue to enhance visibility along our supply chain, and we identify opportunities to improve our procurement efforts and mitigate risks of disruption. By limiting natural resource use and maintaining our standards, we strive to strengthen our supply chain, because cultivating a dependable and responsible supply chain is important to our ability to provide high-quality products for our customers. We strive to continuously contribute to a more efficient, responsible supply chain. As part of our strategy, we aim to include our own suppliers in our efforts to increase sustainability and deliver value for our customers. By eliminating waste and reducing greenhouse gas emissions in our supply chain, we can increase our efficiency to generate savings along our value chain and improve our business success. To drive our sustainable growth, we continue to implement processes to track the performance of our suppliers while fostering a culture of innovation to support improvements. As we progress, we aim to collaborate with our suppliers to mitigate supply chain risks. Our goal is to have 100% of our top sustainability “high-risk” and/or “high-impact” suppliers complete a self-assessment questionnaire by the end of 2022. With this information, we will enable more responsible growth and targeted improvements for our suppliers. A specific example of climate-related risks influencing our supply chain strategy is in our usage of copper as a raw material in our products. As we strive to use lightweight materials in our manufacturing we are aware of regulatory compliance related to minimizing copper usage. As such, Tenneco is one of the first in the world to introduce a complete line of zero-copper brake pads more than 10 years ahead of mandated legislation that phased out the use of copper due to its adverse environmental impact. We sold more than 6.8M sets of these brake pads in 2020.
Investment in R&D	Yes	As a result of growing customer requirements, changes in consumer behaviour, industry evolution, and environmental regulations, Tenneco’s innovation strategy has focused to increase product range to support internal combustion and hybrid engine needs. Our technical and regulatory expertise provides a strategic advantage in identifying opportunities that allow us to seamlessly translate business growth and new technologies. Greenhouse gas emissions and vehicle propulsion efficiency are key defining opportunities and feature prominently in our future product road maps in support of our automotive industry customers. For example, the product management component of our Sales and Commercial Operations reviews customer feedback, assesses reputational risk, and translates customer and market requirements into product strategies, road maps and prioritized product plans. Our Product Development and Launch system identified regulatory risks and opportunities and considers these in the strategies and road map to develop new products through the Tenneco Product Launch System (TenPLUS). Our Innovation team developed a cross-functional, phase-gate business process to manage investment risk as well as gauge market acceptance and Technical Readiness Level (TRL) of new products under development. Not only does this program focus on identifying regulatory market opportunities, it increases the probability that our research and development investments will result in successful customer adoption of targeted new high margin products to drive top and bottom line growth, evaluate the customer voice and road maps, and anticipate development opportunities for the next five years. At a high level, many of our innovations are driven by fuel economy standards (i.e. to reduce CO2, exhaust recovery, etc.) which will help us be prepared for regulations that will be in place in 2025. To prove our success in R&D we won a PACE Award for some of our work in 2020. We design specialized coatings and components that reduce mass and friction and improve thermal and mechanical resistance, which support OEMs in reaching their goals for engine enhancements. For example, our light vehicle diesel steel pistons offer proven carbon emission reduction, and our IROX 2 polymer bearing coatings (PACE award winner) provide increased reliability to support higher-density, more efficient engines.
Operations	Yes	As one of the world’s leading designers, manufacturers and marketers of automotive products for original equipment and aftermarket customers, what Tenneco makes matters. In 2019, Tenneco adopted a new set of strategic company values that outline what we stand for. We are continuing this roll out to employees throughout 2020. These values are: Integrity Always, One Team, Make Tomorrow Better and Will to Win. In 2020 to underpin our Make Tomorrow Better value, we developed a framework to align our strategic approach to sustainability and focus our efforts on our key impacts. Based on Tenneco’s ESG priorities, we organized the pillars to define our future performance and recognize opportunities for improvement across our business. Our strategy, The Road to Making Tomorrow Better, reflects stakeholder input, our material topics and critical elements of our culture. We continue to operate with a foundation of responsibility and accountability as we implement our strategy to generate positive impacts related to three key pillars: People, Planet and Products. With the Planet pillar we focus on minimising our impact on the planet through operation eco-efficiency and renewable energy sourcing. This involves work throughout our operations to reduce energy use, GHG emissions and waste. A strategic decision we have taken in 2020 to help us achieve our ‘Planet’ aspirations is to set new environmental challenging targets, the specifics of which will be announced shortly in 2021. Operational work to achieve these targets will be rolled out over the coming years through our EHS leads for each of our business units and via our ISO 50001 and ISO 14001 Energy and Environmental Management systems.

C3.4

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

	Financial planning elements that have been influenced	Description of influence
Row 1	Capital expenditures Capital allocation	<p>Capital allocation: Capital allocation to our innovation strategy is increasingly important as technology evolves and customers continue to demand climate focused vehicle improvements. To drive our financial performance, we invest in research and development and strive to differentiate our business. We continue to illustrate the range of our capabilities and supply new technologies to enable the market transition as we incorporate modern advancements that support electrification and alternative fuels. During 2020 alone our Engineering, research and development costs were \$273m. Whilst not all of our R&D costs are directly attributable to technology innovations responding directly to climate change, this magnitude provides a proxy for the high level of investment in our response to evolving technology. By anticipating climate directed market needs, we offer innovative solutions to remain leaders in this transforming industry and drive value for our stakeholders through short term individual product enhancements through to our long term strategic business change (10-50 year horizon) as our business respond to the longer term transition to electrification. Capital Expenditure: Prior to expenditure on capital projects, at an asset level, we use a MOC (Management of Change) checklist process. The MOC checklist is used to evaluate the potential environmental, health and safety, resource usage implications of a capital project. Capital project must pass the MOC process before a Capital Appropriate Request is authorised. The MOC checklist is related to both our climate related risk and opportunities as the process may highlight where particular proposed capital expenditure could increase our climate related impacts (a risk), offering us an opportunity to review our specific purchasing decision to select equipment with comparatively better environmental performance (opportunity). For each project of significant investment, the requestor must highlight whether a project is likely to have an impact in terms of increase or decrease of: utility usage, resource usage, GHG emissions, waste volumes (hazardous, recyclable, general) VOCs, water usage. All of the aspects of EHS (environment, health and safety) will then be considered in the round, prior to approval of the Capital Appropriation Request.</p>

C3.4a

(C3.4a) 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

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (location-based)

Intensity metric

Metric tons CO2e per unit revenue

Base year

2018

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

79.3

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

0

Target year

2021

Targeted reduction from base year (%)

3

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

76.921

% change anticipated in absolute Scope 1+2 emissions

-3

% change anticipated in absolute Scope 3 emissions

0

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

75.01

% of target achieved [auto-calculated]

180.327868852459

Target status in reporting year

Achieved

Is this a science-based target?

No, and we do not anticipate setting one in the next 2 years

Target ambition

<Not Applicable>

Please explain (including target coverage)

1. For the purposes of this short term target our anticipated absolute reduction in scope 1 and 2 emissions is 3% on the basis of no assumed material change in revenue and the assumption that we will meet our target. 2. Note out intensity target is stated here per \$million revenue, not per single unit revenue - therefore the order of magnitude here will appear different to that in question 6.10 where the requirement is to display an intensity per single unit revenue. 3. The baseline data that we are currently using for 2018 covers the whole of Tenneco and Federal Mogul operations – however the level of estimation is higher, and data quality lower in 2018 compared to the more recent disclosures years (2019 and 2020). This is because since the acquisition, more integrated efforts to improve environmental data collection and disclosure have been made. The short-term nature of the prior target (2018-2021) to some extent reflects the disruption to our baseline during this acquisition period; and as such we anticipate publishing new, more stretching targets shortly (in 2021), based on a high quality more recent baseline year

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	2	
To be implemented*	14	1140
Implementation commenced*	8	650
Implemented*	3	106
Not to be implemented	0	0

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 buildings	Lighting
--------------------------------	----------

Estimated annual CO2e savings (metric tonnes CO2e)

70.5

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

56000

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

171000

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

LED lighting substitution at our Edenkoben facility in Germany

C4.3c

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

Method	Comment
Financial optimization calculations	We select emission reduction activities where asset or overhead costs are reduced and the return on investment is favorable.
Please select	

C4.5

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

Yes

C4.5a

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

Level of aggregation

Group of products

Description of product/Group of products

Products designed to increase fuel efficiency and/or reduce emissions during their use phase. This includes (by way of example): 1) Diesel Selective Catalyst Reduction Products: These products improve the fuel efficiency of diesel fuel emissions, resulting in a decrease in greenhouse gas emissions 2) Lightweight Exhaust Systems, Fabricated Manifolds, Mass reduced components and exhaust valves: These products improve fuel economy and thus decreases greenhouse gas emissions associated with fuel consumption 3) Exhaust Waste Heat Recovery Products: New Rankine Cycle, Thermoelectric and Thermoacoustic products are under development for light and heavy duty vehicles powered by gasoline and diesel engines. These products recover exhaust waste heat to improve fuel efficiency 4) Clean External Exhaust Gas Recirculation(EGR™-) efficiency improvement: This product is under commercial development. Current cooled EGR systems have limited fuel efficiency improvements (only 2-5%) due to the occurrence of engine knock from recirculated exhaust emissions. Our products employ a catalyzed filter within the EGR loop which eliminates >99% of emissions, allowing a higher rate of exhaust recirculation. This can increase fuel efficiency by >10% and eliminate fuel enrichment under high engine load conditions.

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

Low-carbon product and avoided emissions

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

Other, please specify (Our Business Unit Chief Engineers ensure adherence to appropriate methodologies to evaluate and label the products that are considered as low carbon, or enable third parties to avoid emissions.)

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

41

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

Our Business Unit Chief Engineers ensure adherence to appropriate methodologies to evaluate and label the products that are considered as low carbon, or enable third parties to avoid emissions. We report these as such in our SASB compliant KPIs in our annual Sustainability Report under reference SASB TR-AP-410a.1" Total revenue from products designed to increase fuel efficiency and/or reduce emissions during their use phase". Please note this reflects Clear Air and Powertrain only.

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 2018

Base year end

December 31 2018

Base year emissions (metric tons CO2e)

283267

Comment

Scope 2 (location-based)

Base year start

January 1 2018

Base year end

December 31 2018

Base year emissions (metric tons CO2e)

1132943

Comment

Scope 2 (market-based)

Base year start

January 1 2018

Base year end

December 31 2018

Base year emissions (metric tons CO2e)

1360895

Comment

Note: Market based emissions for 2018, 2019 and 2020 are conservative and assume residual mix or location-based conversion factors are applied in all instances (residual mix in Europe via AIB REDISS residual mix data, and application of location-based conversion factors everywhere else globally, per the WRI GHG Scope 2 protocol conversion factors hierarchy). The application of Residual mix and location based factors is due to lack of consolidated data across the current portfolio for EAC (Energy Attributed Certificates), green tariff info or other verifiable evidences of low or zero carbon energy, per the WRI GHG Scope 2 guidance on evidence quality.

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)
The Greenhouse Gas Protocol: Scope 2 Guidance
US EPA Center for Corporate Climate Leadership: Direct Emissions from Stationary Combustion Sources
US EPA Center for Corporate Climate Leadership: Direct Emissions from Mobile Combustion Sources
US EPA Mandatory Greenhouse Gas Reporting Rule

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

220826

Start date

January 1 2020

End date

December 31 2020

Comment

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)

275518

Start date

January 1 2019

End date

December 31 2019

Comment

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)

283267

Start date

January 1 2018

End date

December 31 2018

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

932822

Scope 2, market-based (if applicable)

1037635

Start date

January 1 2020

End date

December 31 2020

Comment

Note: Market based emissions for 2018, 2019 and 2020 are conservative, have a high degree of estimation and assume residual mix or location based conversion factors are applied in all instances (residual mix in Europe via AIB REDISS residual mix data, and application of location based conversion factors everywhere else globally, per the WRI GHG Scope 2 protocol conversion factors hierarchy). The application of Residual mix and location based factors is due to lack of consolidated data across the current portfolio for EAC (Energy Attributed Certificates), green tariff info or other verifiable evidences of low or zero carbon energy, per the WRI GHG Scope 2 guidance on evidence quality.

Past year 1

Scope 2, location-based

1072030

Scope 2, market-based (if applicable)

1218046

Start date

January 1 2019

End date

December 31 2019

Comment

Note: Market based emissions for 2018, 2019 and 2020 are conservative, have a high degree of estimation and assume residual mix or location based conversion factors are applied in all instances (residual mix in Europe via AIB REDISS residual mix data, and application of location based conversion factors everywhere else globally, per the WRI GHG Scope 2 protocol conversion factors hierarchy). The application of Residual mix and location based factors is due to lack of consolidated data across the current portfolio for EAC (Energy Attributed Certificates), green tariff info or other verifiable evidences of low or zero carbon energy, per the WRI GHG Scope 2 guidance on evidence quality.

Past year 2

Scope 2, location-based

1132943

Scope 2, market-based (if applicable)

1360895

Start date

January 1 2018

End date

December 31 2018

Comment

Note: Market based emissions for 2018, 2019 and 2020 are conservative, have a high degree of estimation and assume residual mix or location based conversion factors are applied in all instances (residual mix in Europe via AIB REDISS residual mix data, and application of location based conversion factors everywhere else globally, per the WRI GHG Scope 2 protocol conversion factors hierarchy). The application of Residual mix and location based factors is due to lack of consolidated data across the current portfolio for EAC (Energy Attributed Certificates), green tariff info or other verifiable evidences of low or zero carbon energy, per the WRI GHG Scope 2 guidance on evidence quality.

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?

No

C6.5

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

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

2667

Emissions calculation methodology

WRI GHG protocol used in combination with DEFRA

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

100

Please explain

Presently this category only includes 1 emission source – a highly level estimate of the impact of purchase supplied water. The rest of the category emission impact has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

Capital goods

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

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

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

264067

Emissions calculation methodology

WRI GHG protocol used in combination with DEFRA emissions factors and IEA emissions factors to calculate: a) Well to tank impact of fuels b) Transmission and distribution impact of scope 2 electricity.

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

100

Please explain

Quantified estimated impact provided for well to tank and transmission and distribution impact of scope 1 and 2 energy sources.

Upstream transportation and distribution

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

5490

Emissions calculation methodology

WRI GHG protocol used in combination with DEFRA emissions factors to calculate estimate of carbon emissions impact of treated waste water only

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

100

Please explain

Presently this category only includes 1 emission source – a highly level estimate of the impact of treated waste water. The rest of the category emission impact has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

Business travel

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

Employee commuting

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

Upstream leased assets

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

Downstream transportation and distribution

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

Processing of sold products

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

Use of sold products

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

End of life treatment of sold products

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

Downstream leased assets

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

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

There are no franchises across our global operational footprint to consider.

Investments

Evaluation status

Relevant, not yet calculated

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

This category has been found to be relevant to Tenneco, but the value has not yet been quantified. It is a Tenneco objective to better evaluate and quantify this category in the short term.

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

We do not believe there are other relevant upstream emissions to consider.

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

We do not believe there are other relevant downstream emissions to consider.

C6.7

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

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	6.7	

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

0.00007501

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

1153648

Metric denominator

unit total revenue

Metric denominator: Unit total

15379000000

Scope 2 figure used

Location-based

% change from previous year

2.86

Direction of change

Decreased

Reason for change

1. Our facilities are continuously working to reduce energy consumption and emissions through efficiency and conservations projects, as well as technology upgrades and improvements. For the year 2020, the global COVID-19 pandemic led to a decrease in production and many of our facilities being shut down for a period of time. 2. Note our intensity target is stated here per \$ revenue, not per \$million revenue as in question 4.1b - therefore the order of magnitude here will appear different as the requirement is to display an intensity per single unit revenue.

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	220551	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	130	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	145	IPCC Fifth Assessment Report (AR5 – 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Australia	3463
Belgium	3900
Brazil	2549
Canada	2833
China	7566
France	5117
Germany	40379
India	5658
Japan	29
Mexico	18960
Poland	15029
South Africa	244
Spain	1058
Thailand	13
United Kingdom of Great Britain and Northern Ireland	4418
United States of America	89505
Argentina	487
Republic of Korea	335
Czechia	4901
Denmark	0
Italy	3332
Morocco	0
Philippines	0
Portugal	4
Romania	2440
Russian Federation	2823
Singapore	0
Sweden	0
Taiwan, Greater China	0
Turkey	5420
Viet Nam	0
Hungary	363

C7.3

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

By business division

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
Clean Air Division	21043
Motorparts Division	25465
Powertrain Division	119801
Performance Solutions Division	54518

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)
Argentina	1988	1988	5648	0
Australia	5013	5013	6987	0
Belgium	5951	6348	30964	0
Brazil	6719	6719	67458	0
Canada	2655	2655	19017	0
China	136437	136437	231288	0
Czechia	20079	23833	44799	0
France	2997	2981	50534	0
Germany	116447	179033	303960	0
Hungary	1865	2041	7448	0
India	66338	66338	91767	0
Japan	2065	2065	4256	0
Mexico	86841	86841	187683	0
Poland	89850	119094	149054	0
Portugal	415	536	1429	0
Russian Federation	8119	8119	26883	0
South Africa	14775	14775	16343	0
Republic of Korea	9955	9955	19256	0
Spain	7524	8464	29493	0
Thailand	9360	9360	19611	0
United Kingdom of Great Britain and Northern Ireland	10362	14017	44357	0
United States of America	240470	240470	592729	0
Turkey	71800	71800	155478	0
Viet Nam	784	784	2168	0
Morocco	749	749	1086	0
Italy	7464	11991	26124	0
Philippines	143	143	213	0
Romania	5245	4789	18073	0
Singapore	5	5	13	0
Sweden	389	250	10876	0
Taiwan, Greater China	8	8	13	0
Denmark	11	33	78	0

C7.6

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

By business division

C7.6a

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

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Clean Air Division	100828	110494
Motorparts Division	74778	77287
Powertrain Division	558631	635159
Performance Solutions	198586	214696

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	Not able to currently attribute emissions directly to this reason due to lack of traceability of the precise changes at this time.
Other emissions reduction activities	106	Decreased	0.008	Emissions avoided via reduction activities- currently only quantify table separately for one site, therefore this is the only site that has been split out here.
Divestment	466	Decreased	0.035	Emissions avoided as a result of divestment of sites from the portfolio.
Acquisitions	0	No change	0	Not able to currently attribute emissions directly to this reason due to lack of traceability of the precise changes at this time.
Mergers	0	No change	0	Not able to currently attribute emissions directly to this reason due to lack of traceability of the precise changes at this time.
Change in output	193328	Decreased	14.35	Total emissions reduction related to site closures, carbon reduction activities that are not separately quantifiable in the category "Reduction activities" and related to the global COVID-19 pandemic. The latter reason is the primary drive for emissions reduction as there was a slowdown in production to match reduction in general demand for vehicles by the OEMs and end consumers. This is evidenced in a range of our operational health and safety data including the total global number of hours worked (as reported in our Sustainability report), where a 22% reduction in workhours has occurred in 2020 as compared to 2019.
Change in methodology	0	No change	0	Not able to currently attribute emissions directly to this reason due to lack of traceability of the precise changes at this time.
Change in boundary	0	No change	0	Not able to currently attribute emissions directly to this reason due to lack of traceability of the precise changes at this time.
Change in physical operating conditions	0	No change	0	Not able to currently attribute emissions directly to this reason due to lack of traceability of the precise changes at this time.
Unidentified	0	No change	0	Not able to currently attribute emissions directly to this reason due to lack of traceability of the precise changes at this time.
Other	0	No change	0	Not able to currently attribute emissions directly to this reason due to lack of traceability of the precise changes at this time.

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)	HHV (higher heating value)	0	1196859	1196859
Consumption of purchased or acquired electricity	<Not Applicable>	0	2165085	2165085
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>	0	3361945	3361945

C8.2b

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

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	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)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1114681

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<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

53.0611

Unit

kg CO2e per million Btu

Emissions factor source

US EPA Center for Corporate Climate Leadership: Direct Emissions from Stationary Combustion Sources

Comment

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

48104

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<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

61.7136

Unit

kg CO2e per million Btu

Emissions factor source

US EPA Center for Corporate Climate Leadership: Direct Emissions from Stationary Combustion Sources

Comment

Fuels (excluding feedstocks)

Fuel Oil Number 4

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

15384

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<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

75.0436

Unit

kg CO2e per million Btu

Emissions factor source

US EPA Center for Corporate Climate Leadership: Direct Emissions from Stationary Combustion Sources

Comment

Fuels (excluding feedstocks)

Fuel Oil Number 6

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

5250

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<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

75.1036

Unit

kg CO2e per million Btu

Emissions factor source

US EPA Center for Corporate Climate Leadership: Direct Emissions from Stationary Combustion Sources

Comment

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

4519

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<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

70.2236

Unit

kg CO2e per million Btu

Emissions factor source

US EPA Center for Corporate Climate Leadership: Direct Emissions from Mobile Combustion Sources

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

8890

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<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

73.9636

Unit

kg CO2e per million Btu

Emissions factor source

US EPA Center for Corporate Climate Leadership: Direct Emissions from Stationary Combustion Sources

Comment

Fuels (excluding feedstocks)

Kerosene

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

10

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<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

75.2036

Unit

kg CO2e per million Btu

Emissions factor source

US EPA Center for Corporate Climate Leadership: Direct Emissions from Stationary Combustion Sources

Comment

Fuels (excluding feedstocks)

Wood

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

21

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-generation of steam

<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

93.8108

Unit

kg CO2e per million Btu

Emissions factor source

US EPA Center for Corporate Climate Leadership: Direct Emissions from Stationary Combustion Sources

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

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

Low-carbon technology type

<Not Applicable>

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

<Not Applicable>

MWh consumed accounted for at a zero emission factor

<Not Applicable>

Comment

C9. Additional metrics

C9.1

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

C10. Verification

C10.1

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

	Verification/assurance status
Scope 1	No third-party verification or assurance
Scope 2 (location-based or market-based)	No third-party verification or assurance
Scope 3	No third-party verification or assurance

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, but we are actively considering verifying within the next two years

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)?

No, but we anticipate being regulated in the next three years

C11.1d

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

We have an operational estate for which we will likely need to formally purchase EU emissions allowances in the next three years (currently the key estates eligible for the cap and trade system have operated within their emissions targets and EU Commission free allowances; as such not yet needing to purchase our own allowances). We are aware, however, given we monitor energy usage and generation capacity across our estate closely, that we will likely need to make EU ETS allowances purchases for sites in the near future if we are not able to reduce emissions sufficiently, in line with the reducing emissions cap.

C11.2

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

No

C11.3

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

No, and we do not currently anticipate doing so in the next two years

C12. Engagement

C12.1

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

Yes, our suppliers
Yes, our customers

C12.1a

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

Type of engagement

Compliance & onboarding

Details of engagement

Climate change is integrated into supplier evaluation processes

% of suppliers by number

15

% total procurement spend (direct and indirect)

77

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

0

Rationale for the coverage of your engagement

During 2019 and 2020 since we began to conduct our newest environmental supplier screening processes; we have screen 100% of new direct suppliers for environmental criteria as they have joined our supplier lists.

Impact of engagement, including measures of success

Per the GRI 3081-1 indicator in our sustainability reporting – we screen all direct suppliers using specific environmental criteria. Through our Code of Conduct and the requirements of our Supplier Manual, all suppliers are encouraged to align with the Environmental and Sustainability codes located in the AIAG (Automotive Industry Action Group) Corporate Responsibility requirements. In alignment with our Code of Conduct, we expect our suppliers and business partners to follow our standards for social responsibility and respect human rights, as well as ethical behaviour by minimizing their footprints. We also commit to monitoring compliance with our Supplier Manual and Basic Working Conditions Policy, because we strive to enforce our standards in our supply chain and continuously improve supplier performance even after the initial procurement screening.

Comment

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

% total procurement spend (direct and indirect)

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

Rationale for the coverage of your engagement

To engage with 100% of our top sustainability "High risk" and "High impact suppliers" in future

Impact of engagement, including measures of success

We strive to continuously contribute to a more efficient, responsible supply chain. As part of our strategy, we aim to include our own suppliers in our efforts to increase sustainability and deliver value for our customers. By eliminating waste and reducing greenhouse gas emissions in our supply chain, we can increase our efficiency to generate savings along our value chain and improve our business success. To drive our sustainable growth, we continue to implement processes to track the performance of our suppliers while fostering a culture of innovation to support improvements. As we progress, we aim to collaborate with our suppliers to mitigate supply chain risks. Our goal is to have 100% of our top sustainability "high-risk" and/or "high-impact" suppliers complete a self-assessment questionnaire by the end of 2022. With this information, we will enable more responsible growth and targeted improvements for our suppliers. As part of our supplier training programme also encourage all our suppliers to take the AIAG Supply Chain Sustainability Knowledge Assessment and the AIAG Supply Chain Sustainability e-Learning.

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

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

% of customers by number

100

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

0

Portfolio coverage (total or outstanding)

<Not Applicable>

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

Our customers must align with current and emerging technologies for fuel efficiency standards. As a part of our marketing strategy, we share information and educate our customers on the technical innovation features of our products that improve fuel efficiencies. Additionally, for large customers we have engaged and participated in their partnership, training and collaboration programmes on environmental sustainability issues.

Impact of engagement, including measures of success

Impact of our engagement is measured by our revenue and sales. Our track record of growth which outpaces the industry standard demonstrates the success of our communication and engagement with customers on topics related to the innovative nature of our energy efficient components. Examples of our engagements with large clients include: 1) We participate in Ford's Partnership for a Cleaner Environment program annually 2) Host customer technology days and step-level meeting with customers annually 3) Participate in customer Sustainability initiatives, e.g., BMW Sustainability Training for Suppliers, Scania Sustainability Supplier Day annually 4) Participate in Automotive REACH Task Force annually As a result of our efforts across our environmental, social and governance work, we have been accoladed as one of America's Most Responsible Companies 2021 for which we are in the top 300 out of the assessed 2000 largest public companies in the U.S.

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?

Trade associations

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

Manufacturers of Emissions Controls Association (MECA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Supports the development of emissions controls and efficiency technologies for mobile sources.

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

Tenneco is unable to comment further due to confidentiality under MECA bylaws.

Trade association

AIAG - Automotive Industry Action Group

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

AIAG is where auto industry members collaborate to develop common global standards for Quality, Supply Chain, and Corporate Responsibility issues.

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

Tenneco is unable to comment further due to confidentiality under AIAG bylaws.

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?

The ESG Council and appointment of the SVP role on the Executive Leadership Team maintain corporate focus on overall climate change strategy. The Director of the ESG Council maintains close working relationships with all areas of operations. The VP of EHS & S provides another role to ensure all direct and indirect activities that influence operations policy are consistent with the Enterprise climate change strategy.

C12.4

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

Publication

In voluntary sustainability report

Status

Underway – previous year attached

Attach the document

2019_CSR_Report_Final_9.24.20.pdf

Page/Section reference

Sections – 'Our Governance' / 'Our Planet' / 'Our Partners'

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

Comment

Publication

In mainstream reports

Status

Complete

Attach the document

december-31-2020-form-10-k-with-hyperlinks.pdf

Page/Section reference

Sections: 'Safe Harbor', 'Business' 'Risk factors' and 'Management's Discussion and Analysis of Financial Condition and Results of Operations'

Content elements

Risks & opportunities

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	Senior Vice President and Chief Environmental, Social and Governance (ESG) Officer – Reports directly to the CEO	Other C-Suite Officer

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	15379000000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	US	8803491054

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

Requesting member

General Motors Company

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

28166

Uncertainty (±%)

100

Major sources of emissions

Natural gas used to drive production and other equipment, including furnaces, ovens, boilers, and thermal oxidizers.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

General Motors Company

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

89551

Uncertainty (±%)

100

Major sources of emissions

Electricity used to drive production equipment. Production equipment includes boilers, chillers, thermal oxidizers, furnaces/ovens, air compressors, pumps, and motors.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Ford Motor Company

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

21711

Uncertainty (±%)

100

Major sources of emissions

Natural gas used to drive production and other equipment, including furnaces, ovens, boilers, and thermal oxidizers.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Ford Motor Company

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

69029

Uncertainty (±%)

100

Major sources of emissions

Electricity used to drive production equipment. Production equipment includes boilers, chillers, thermal oxidizers, furnaces/ovens, air compressors, pumps, and motors.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Daimler AG

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

17897

Uncertainty (±%)

100

Major sources of emissions

Natural gas used to drive production and other equipment, including furnaces, ovens, boilers, and thermal oxidizers.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Daimler AG

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

56902

Uncertainty (±%)

100

Major sources of emissions

Electricity used to drive production equipment. Production equipment includes boilers, chillers, thermal oxidizers, furnaces/ovens, air compressors, pumps, and motors.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

BMW AG

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

9389

Uncertainty (±%)

100

Major sources of emissions

Natural gas used to drive production and other equipment, including furnaces, ovens, boilers, and thermal oxidizers.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested,

however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

BMW AG

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

29850

Uncertainty (±%)

100

Major sources of emissions

Electricity used to drive production equipment. Production equipment includes boilers, chillers, thermal oxidizers, furnaces/ovens, air compressors, pumps, and motors.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Advance Auto Parts Inc

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

7042

Uncertainty (±%)

100

Major sources of emissions

Natural gas used to drive production and other equipment, including furnaces, ovens, boilers, and thermal oxidizers.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Advance Auto Parts Inc

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

22388

Uncertainty (±%)

100

Major sources of emissions

Electricity used to drive production equipment. Production equipment includes boilers, chillers, thermal oxidizers, furnaces/ovens, air compressors, pumps, and motors.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Toyota Motor Corporation

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

5281

Uncertainty (±%)

100

Major sources of emissions

Natural gas used to drive production and other equipment, including furnaces, ovens, boilers, and thermal oxidizers.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Toyota Motor Corporation

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

16791

Uncertainty (±%)

100

Major sources of emissions

Electricity used to drive production equipment. Production equipment includes boilers, chillers, thermal oxidizers, furnaces/ovens, air compressors, pumps, and motors.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Renault Group

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

2543

Uncertainty (±%)

100

Major sources of emissions

Natural gas used to drive production and other equipment, including furnaces, ovens, boilers, and thermal oxidizers.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Renault Group

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

8084

Uncertainty (±%)

100

Major sources of emissions

Electricity used to drive production equipment. Production equipment includes boilers, chillers, thermal oxidizers, furnaces/ovens, air compressors, pumps, and motors.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member

Nissan Motor Co., Ltd.

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

2542

Uncertainty (±%)

100

Major sources of emissions

Natural gas used to drive production and other equipment, including furnaces, ovens, boilers, and thermal oxidizers.

Verified

No

Allocation method

Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

Requesting member
Nissan Motor Co., Ltd.

Scope of emissions
Scope 2

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
8084

Uncertainty (±%)
100

Major sources of emissions
Electricity used to drive production equipment. Production equipment includes boilers, chillers, thermal oxidizers, furnaces/ovens, air compressors, pumps, and motors.

Verified
No

Allocation method
Other, please specify (Allocation based on percentage of 2020 Value Added Revenue)

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) provides the overarching methodology for Tenneco's GHG inventory. The operational control approach is used to define the Scope 1 and Scope 2 emissions included in our inventory. The GHG sources listed above are from Scope 1 and 2 reporting for vehicles and facilities. Scope 2 emissions reported are location-based. Allocations were generated to quantify customer level emissions as requested, however variability in this approach exists as current metric tracking capabilities include total company wide emissions instead of by customer.

SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	The operations of our businesses and support lines are highly integrated, utilizing a central shared services infrastructure for many functions. As a result, the only feasible means for us to allocate emissions to our customers is to use corporate level data, rather than business line or facility level data.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

We are currently in the process of integrating a new environmental software platform in which we believe will be able to allocate the emissions to our customers. This is however a complex process that require us to track production percentages for customer and therefore will not be available in the short term.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

Yes

SC2.2a

(SC2.2a) Specify the requesting member(s) that have driven organizational-level emissions reduction initiatives, and provide information on the initiatives.

Requesting member

Please select

Initiative ID

Please select

Group type of project

Please select

Type of project

Please select

Description of the reduction initiative

Example of our engagements include: 1) We participate in Ford's Partnership for a Cleaner Environment program annually 2) Host customer technology days and step-level meeting with customers annually 3) Participate in customer Sustainability initiatives, e.g., BMW Sustainability Training for Suppliers, Scania Sustainability Supplier Day annually 4) Participate in Automotive REACH Task Force annually

Emissions reduction for the reporting year in metric tons of CO2e

Did you identify this opportunity as part of the CDP supply chain Action Exchange?

Please select

Would you be happy for CDP supply chain members to highlight this work in their external communication?

Please select

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain questions?
I am submitting my response	Investors Customers	Public	Yes, I will submit the Supply Chain questions now

Please confirm below

I have read and accept the applicable Terms