Michelin - Climate Change 2020

C0. Introduction

C0.1

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

Since 1889, Michelin has constantly innovated to facilitate the mobility of people and goods. Today, the Group is setting the standard across every tire and travel-related services market, while leading a global strategy to drive responsible, sustainable and profitable growth. In short, Michelin is making mobility safer, cleaner, more connected and more accessible. Michelin enjoys exceptional geographic coverage and is stepping up its deployment in emerging markets. Currently operating in 26 countries at 117 production facilities and 9 research centers, and 7,600 dealerships and service centers in 30 countries. Michelin employs a total of 127,187 people worldwide. Net sales in 2019 were €24 billion. Michelin holds foremost positions in every segment of the tire market. Associated brands and services also include dealerships and service centers (Euromaster, TBC, TyrePlus), online retailing (Allopneus, Blackcircles), wholesalers (Euromaster and TBC AG), truck driver assistance services (Michelin Euro Assist), fleet tire advice, maintenance and management services (Michelin fleet solutions in Europe and Michelin Business Solutions in North America), Michelin Travel Partner (maps and guides, ViaMichelin mobility assistance services) and Michelin Lifestyle products. In 2018 The Group expands its range of mining solutions and steps up growth in high-tech materials by acquiring Fermor PLC, a specialty manufacturer of conveyor belts and reinforced polymer products. Michelin strengthens its Specialty Businesses with the acquisition of Camso, a global leader in off-the-road mobility (farming, materials handling and construction industries). In 2019 Michelin acquires the leading Indonesian tire manufacturer Multistrada strengthening its presence in the Indonesian market. The Group also acquires Masternaut, stepping up the deployment of its telematics solutions across Europe. Faurecia and Michelin signed a joint venture that leads to the creation of SYMBIO, A FAURECIA MICHELIN HYDROGEN COMPANY, that will develop, produce and market hydrogen fuel cell systems for light vehicles, commercial vehicles, trucks and other applications.

Inspired by its founders, Michelin is dedicated to enhancing mobility through innovation and quality, by basing its development on the core values of Respect for Customers, Respect for People, Respect for Shareholders, Respect for the Environment and Respect for Facts. Our sustainable development approach, embodied in the 2002 Michelin Performance and Responsibility Charter, structures this corporate culture and coordinates our commitment to the principles of sustainable, balanced, responsible growth.

C0.2

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

<table>
<thead>
<tr>
<th>Reporting year</th>
<th>Start date</th>
<th>End date</th>
<th>Indicate if you are providing emissions data for past reporting years</th>
<th>Select the number of past reporting years you will be providing emissions data for</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 1 2019</td>
<td>December 31 2019</td>
<td>No</td>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
</tbody>
</table>

C0.3

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

- Brazil
- Canada
- China
- France
- Germany
- Hungary
- India
- Italy
- Japan
- Mexico
- Poland
- Romania
- Russian Federation
- Serbia
- Spain
- Thailand
- United Kingdom of Great Britain and Northern Ireland
- United States of America

C0.4

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

EUR

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.

Financial 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.

<table>
<thead>
<tr>
<th>Position of individual(s)</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board-level committee</td>
<td>The Group Executive Committee (GEC) and the extended GEC known as the Group Management Committee (GMC) are the two, management board-level committees responsible for climate-related issues. The GEC includes the two general managers (the CEO and the Partner and Chief Financial Officer) and eight executive vice presidents (EVP Research &amp; Development, EVP Engagement and Brands, EVP Manufacturing, EVP Automotive, Motosport, Experiences, and Americas Regions, EVP Specialties and Africa/India/Middle East, China, East Asia &amp; Australia Regions, EVP Chief HR Officer, EVP Services &amp; Solutions, High Tech Materials, and EVP Road Transportation and European Regions). The GMC is comprised of the full GEC and the heads of the following entities: Strategy, Purchasing, Corporate Business Services, Finance, Legal Affairs, Quality, Audit, Internal Control and Risk Management, Supply Chain, Information Systems, and the China and North America Regions. The GEC focuses on strategic issues and decisions, such as corporate transformations, the business model, acquisitions, performance, brand strategy, sustainable growth and risk management. As such it oversees climate-related risks and opportunities through the annual strategic planning process for business units and operations. The GMC cross-functionally manages transformation, competitiveness, integration of acquisitions and the internal control, quality and risk management processes. It forms a panel of business units and regions to ensure that its decisions are widely embraced across the organization. As such it oversees climate-related risks through a dedicated process of risk management. It also tracks climate-related progress in operations and in external engagement on sustainable mobility at dedicated meetings led by the chief sustainability officer, held twice a year. These meetings ensure that all climate-change related issues overseen by two GEC sub groups – Environment Governance body and the Sustainable Mobility Committee – are reviewed at the highest level of the company. The GEC, and its extension as the GMC, is therefore responsible for overseeing assessment and management of risks and opportunities related to climate change for Michelin and its subsidiaries.</td>
</tr>
</tbody>
</table>

C1.1b
(C.1.2a) Provide further details on the board’s oversight of climate-related issues.

<table>
<thead>
<tr>
<th>Frequency with which climate-related issues are a scheduled agenda item</th>
<th>Governance mechanisms into which climate-related issues are integrated</th>
<th>Scope of board-level oversight</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled – some meetings</td>
<td>Reviewing and guiding strategy</td>
<td>Reviewing and guiding strategy: The Group Management Committee (GMC), which brings together the Group Executive Committee and the heads of Strategy, Purchasing, Corporate Business Services, Finance, Legal Affairs, Quality, Audit, Internal Control and Risk Management, Supply Chain, Information Systems, and the China and North America Regions, reviews all strategic actions related to climate change. To do this, it conducts a biannual review, organized by the corporate sustainability officer, of decisions made and issues handled by the Environment Governance body. This review enables the GMC to verify that steady progress is being made towards short-, medium- and long-term CO2 reduction targets and validate the strategic objectives for major climate-related issues and risks and their internal control. Monitoring and overseeing progress against goals and targets for addressing climate-related issues: Twice yearly the GMC regularly reviews the indicators monitored by the Environment Governance body, which include 2 KPIs on reducing Scope 1 &amp; 2 and Scope 3 CO2 emissions, respectively, and reduction of resource consumption in both manufacturing and in the design. As such, it decides on whether adjustments to targets or resources are required.</td>
<td></td>
</tr>
</tbody>
</table>

| Scheduled – some meetings | Reviewing and guiding business plans | Reviewing and guiding business plans: The Group Executive Committee (GEC) conducts an annual review of how the business units’ and corporate support functions’ strategic plans are integrating sustainability actions, including opportunities related to climate change, in their product and service offers and operating plans, respectively. This review, prepared jointly by the sustainability and corporate strategy departments, is based on the 4 pillars of the World Bank initiative “Sustainable Mobility for All” (SuM4All): green mobility (cutting CO2 emissions and improving energy efficiency of transport systems), as well as efficiency, safety and universal access. The review focuses on the level of expectations of customers across market segments regarding each SuM4All pillar. The review also analyzes the positioning of Michelin’s offers considering these expectations and highlights changes that are needed to develop opportunities and manage risks related to “green mobility”. It allows for the GEC to provide the necessary guidance and directives on further developing opportunities and managing risks related to climate change. |

| Other, please specify (Annually) | Setting performance objectives | Setting performance objectives: Once a year the GMC reviews the indicators monitored by the Environment Governance body. As of 2018, these indicators include climate-change related objectives for emissions mitigation in manufacturing and product use as well as reducing resource consumption in both manufacturing and in product (tire) design. Overseeing major capital expenditures, acquisitions and divestitures: All major decisions on Capex and mergers/acquisitions/divestitures are overseen by the GEC in dedicated meetings either at the conclusion of the annual strategic planning process, which covers all divisions and activities, or at dedicated ad hoc meetings. The decisions are supported by information on 1) new business models and ventures in line with the Group growth strategy (energy-efficient & long-lasting tires, mobility services and solutions, mobility experiences, advanced materials) provided by business units and/or the activities carried out under the Corporate Innovation Board, and 2) CO2 mitigation opportunities for own operations, provided by the Environmental Governance body. Reviewing and guiding risk management policies: The corporate risk management framework and the annual risk map are reviewed by the GMC. Climate-related risks policies are not reviewed in and of themselves but rather as factors that could impact 7 different risk families in the risk map. |

(C.1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

<table>
<thead>
<tr>
<th>Name of the position(s) or committee(s)</th>
<th>Reporting line</th>
<th>Responsibility</th>
<th>Coverage of responsibility</th>
<th>Frequency of reporting to the board on climate-related issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Executive Officer (CEO)</td>
<td>&lt;Not Applicable&gt;</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>&lt;Not Applicable&gt;</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Other C-Suite Officer, please specify (Executive vice president of manufacturing operations)</td>
<td>&lt;Not Applicable&gt;</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>&lt;Not Applicable&gt;</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Other C-Suite Officer, please specify (Executive vice president of Research &amp; Development)</td>
<td>&lt;Not Applicable&gt;</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>&lt;Not Applicable&gt;</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Other C-Suite Officer, please specify (Executive vice president of Engagement and Brands)</td>
<td>&lt;Not Applicable&gt;</td>
<td>Both assessing and managing climate-related risks and opportunities</td>
<td>&lt;Not Applicable&gt;</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Chief Risks Officer (CRO)</td>
<td>&lt;Not Applicable&gt;</td>
<td>Other, please specify (Assessing and managing climate-related risks)</td>
<td>&lt;Not Applicable&gt;</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Other C-Suite Officer, please specify (Chief Strategy Officer )</td>
<td>&lt;Not Applicable&gt;</td>
<td>Other, please specify (Assessing and managing climate-related opportunities)</td>
<td>&lt;Not Applicable&gt;</td>
<td>Quarterly</td>
</tr>
</tbody>
</table>

C.1.2a
(C2.1) Describe where in the organizational structure these positions and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The positions of executive VP of manufacturing and executive VP of research and development, both members of the Group Executive Committee (GEC, or management board), serve as co-chairs of the Environment Governance body, which operates as a sub-group of the GEC, and as such they are empowered to make decisions for the GEC as a whole. Meeting twice a year at a minimum, the Environment Governance body oversees all climate-related issues impacting operations. They are assisted by the members of the Environment Governance body: chief procurement officer, chief risk officer, corporate EHS manager, chief sustainability officer, 2 vice-presidents of research and development, vice president of the advanced materials division, and norm and regulations manager. The 2 executive vice president chairs, supported by the transverse expertise of the members, jointly monitor climate-related issues with a focus on assessing their potential impacts to internal operations – manufacturing, marketing & sales of products and services, logistics and purchasing – and strategy for research and development. They are supported by several standing work groups that analyze and make recommendations on strategic issues related to energy use, carbon pricing, mitigation, adaptation, and current and future objectives, among others. Lastly, the Environment Governance body is particularly suited to bottom-up identification of emerging risk factors and analyzing their impacts over the short-, medium- and long-term. All major decisions on climate-related risks, opportunities and investments impacting operations that are not made by the GEC are made at this governance level. This approach ensures that major decisions are made at the highest level of the company with the relevant divisions and activities of the Group represented.

The positions of CEO and executive VP of engagement and brands, both members of the GEC, serve as co-chairs of the Sustainable Mobility Committee, which operates as a sub-group of the GEC, and as such they are empowered to make decisions for the GEC as a whole. Meeting twice a year, the Sustainable Mobility Committee oversees the strategy for external engagement on sustainable mobility, in general, and decarbonizing transport, in particular. The latter is the most material climate change issue for Michelin. They are assisted by the chief sustainability officer and vice president of strategic anticipation and ecosystemic innovation. This committee jointly monitors climate-related issues with a focus on identifying and developing external partnerships and relations covering a diverse set of mobility ecosystems that are working on 2 fronts: 1) accelerating the systemic transformation of mobility into a “net zero emissions” system before 2050; and 2) actively putting in place new approaches to low-carbon and lower impact mobility. They are supported by internal experts representing Michelin in public-private sustainable mobility initiatives (Transport Decarbonization Alliance, Action towards Climate friendly Transport, SuM4All, International Transport Forum, WBCSD/Transforming Mobility) and internal experts involved in Michelin-developed ecosystems for sustainable mobility (Movin’on Sustainable Mobility Summit, Movin’on LABS). In addition, the CEO is actively involved in several of these initiatives, and the executive VP of engagement and brands monitors climate-related issues by directly supervising the sustainability, public affairs, norms and regulations departments who closely follow external developments. While the Sustainable Mobility Committee is more focused on identifying, developing and monitoring opportunities, it does allow for external risk factors to be identified. In conclusion, all major decisions on climate-related risks, opportunities and investments impacting external engagement on decarbonizing the transport sector and sustainable mobility ecosystems that are not made by the GMC are made within this high-level committee. This approach ensures that major decisions are made at the highest level of the company with the relevant divisions and activities of the Group consulted.

To ensure that decisions by the Environment Governance body and the Sustainable Mobility Committee are widely embraced across the organization, a biannual review is presented to the Group Management Committee (extended GEC) by the chief sustainability officer.

The chief risk officer reports to the GMC on climate-related risks.

The chief strategy officer runs the annual strategic planning process overseen by the GEC that focuses primarily on climate-related opportunities of business units’ products and services offers.

C1.3

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

<table>
<thead>
<tr>
<th>Provide incentives for the management of climate-related issues</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row 1</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Entitled to incentive</th>
<th>Type of incentive</th>
<th>Activity monitored</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Executive Officer (CEO)</td>
<td>Monetary reward</td>
<td>Emissions reduction target</td>
<td>A portion (15%) of the CEO’s long-term incentive bonus is indexed on Michelin’s Environmental Footprint (MEF) composite indicator. Energy consumption and CO2 emissions targets are part of this indicator. The 3-year average of this composite indicator must be below a defined threshold for the monetary reward to be triggered.</td>
</tr>
<tr>
<td>Other, please specify (R&amp;D employees and managers)</td>
<td>Monetary reward</td>
<td>Efficiency of projects</td>
<td>Attainment of key milestones for tire development projects involving improvement of tire energy efficiency. An individual performance bonus takes into account progress made through tire development projects: measured by passing key project milestones which assesses a new tire's energy efficiency and carbon footprint in addition to safety and long lasting performance. Tire fuel efficiency as measured by rolling resistance is one of several tire performance indicators that drive product design and is measured by the Michelin Total Performance (MTP) KPI.</td>
</tr>
<tr>
<td>Management group</td>
<td>Monetary reward</td>
<td>Emissions reduction targets</td>
<td>A group of managers covering environment, energy use and energy purchasing are evaluated at year-end on their performance in steveering the implementation of energy and CO2 reduction targets and projects.</td>
</tr>
</tbody>
</table>

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

How does your organization define short-, medium- and long-term time horizons?

| From To Comment |
|------------------|------------------|
| Short-term 0-5 This time horizon is aligned with corporate-level and business units' management of operational risks. It applies to 1) operational decisions about energy purchasing and usage in manufacturing (e.g., contracts for purchasing renewable electricity); 2) management of CO2 quotas under emissions trading systems; 3) strategic planning and partnerships for new mobility offers (e.g., hydrogen fuel cell vehicles and related infrastructure); 4) development of supplier partnerships for reducing carbon footprints (e.g., logistics services, engagement through CDP Supply Chain); 5) market and external environment/stakeholder analysis (e.g., corporate climate strategies, NGO expectations, positions and expectations of influencers); 6) tactical implementation of norms and regulations strategy (see below); 7) management of operational risks related to extreme weather events; 8) management of media coverage of corporate responsibility regarding climate change; 9) engaging public and private actors in sustainable mobility through the Movin'on Sustainable Mobility Summit and Movin'on LABS and the Transport Decarbonization Alliance; 10) managing SBTi-approved targets for raw materials suppliers. |
| Medium-term 6-15 This time horizon is aligned with corporate-level and business units' management of strategic risks and the strategic planning process. It applies to 1) industrial footprint restructuring and decisions about energy usage and energy-efficient technologies in manufacturing; 2) strategic planning for CO2 quotas in emissions trading systems; 3) research and development cycle for new tire projects addressing energy efficiency/materials/mass in concert with the other key tire performances; 4) strategic anticipation analysis of mobility trends; 5) strategic plans related to norms and regulations related to vehicle/air energy efficiency, CO2 emissions, long-lasting performance; 6) qualitative climate change scenarios analysis by business units and operational departments; 7) managing SBTi-approved targets for manufacturing and upstream and downstream supply chain. |
| Long-term 16 This time horizon applies to 1) developing a corporate SBT roadmap under a 2°C and below 2°C scenarios for long-term reductions to CO2 emissions from manufacturing and product use; 2) implementing the Paris Process for Mobility and Climate global macro roadmap for zero net emissions of the transport sector by 2050 under the UNFCC process. |

C2.1b

How does your organization define substantive financial or strategic impact on your business?

For Michelin, a risk corresponds to the possibility of an event occurring whose consequences could affect its objectives, particularly as concerns its financial position, reputation or impact on people or the environment. A substantive financial or strategic impact on business is defined by the Group Management Committee (GMC) as a risk that meets one or both of the following criteria: adverse effect on annual revenue (>150 M €) or annual operating income (>50 M €). For opportunities, no such hard-and-fast threshold exists. The portfolio of opportunities are acted on in the strategic planning process. Anticipated positive impacts for major initiatives are announced annually in Michelin's strategic plan as communicated through its annual financial and sustainability report.

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
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
Responsibility: All major risks and opportunities related to operations are reviewed by the Environment Governance body, and those related to products and services are handled within the appropriate business unit(s). Opportunities are overseen in the annual strategic planning process by the Group Executive Committee (GEC). Risk management framework: Michelin has conducted a thorough review of the risks that could have a material adverse effect on its operations, financial position, reputation or impact on people or the environment. Currently, the risk map comprises 14 main families which are the basis for assessing existing risks, identifying emerging risks and steering necessary actions to reduce risks. Climate change risks are articulated through 7 risk families: 1) manufacturing continuity and 2) supply disruption (acute and chronic physical impacts of climate change); 3) health & safety of people (acute impacts of climate change); 4) finance & accounting (uncertainty in market signals for renewable energy); 5) environment (current and emerging regulations); 6) strategy deployment (new technologies and substitutions for CO2 mitigation in both operations and market offer); 7) brand & image (increased stakeholder concern, stigmatization of sector). Overseen by the corporate risk management department in terms of methodology and internal control, each operational entity establishes and updates its risk portfolio and action plans. The results are reviewed and approved by designated risk governance committees. Risks with a substantive financial or strategic net impact (gross impact reduced by the risk mitigation measures deployed by the Group including preventive, protection, crisis management, risk transfer and risk governance measures) are regularly reviewed by the GMC. In 2019, all climate-change related risks evaluated under the 7 risk families indicated above were determined to represent impacts below the thresholds for substantive financial or strategic impact. Nevertheless, 5 of these climate-related risks are recognized as having the potential in the future to have substantive financial or strategic impacts and are thus reported in C2.3a. The climate-related risk with the highest estimated impact is linked to increased severity and frequency of extreme weather events. Acute physical impacts are cited in Michelin’s annual report as one of several external factors that collectively make “Business non continuity” and “Supply rupture” two of the 10 major risk factors for the Group but with financial impacts limited to a period of days to weeks. The highest-risk events for Michelin’s manufacturing operations are operations: tornadoes in North America and seasonal flooding in Asia. How risks are reduced to ensure manufacturing and business continuity: 1) prevention, including staff training, technical inspections & maintenance, strengthening protection measures, and strategically selecting plant locations; 2) protection, by keeping buffer inventory of replacement parts for critical equipment, multi-sourcing finished-product inputs and component suppliers; 3) management, notably by deploying a Business Continuity Management process for all production activities. How risks are reduced to ensure continuity of purchased goods and services: 1) training employees on improving risk planning, 2) conducting audits of critical suppliers’ business continuity plans, 3) signing multi-year contracts with the main suppliers, 4) looking for new suppliers, 5) maintaining strategic buffer inventory for critical products and 6) seeking substitute products when certain commodities become scarce. Capitalizing on opportunities: Michelin favors a flexible approach in which business units are empowered to use the available resources to identify, assess and act on opportunities. The most promising ones are incorporated into their 5-year strategic plans which are reviewed and approved on an annual basis by the GMC. The umbrella organization for identifying opportunities and working with partners and stakeholders to develop products and services towards a carbon neutrality is Movin’on: the annual sustainable mobility summit; and Movin’on LABS communities of interest. Both are means for conducting strategic anticipation and provide access to a multitude of sustainable mobility ecosystems of both private and public actors enabling business model development around low-carbon products and services. The other main resources are: 1) Corporate Innovation Board (CIB) – defines the innovation strategy from a cross-functional perspective to focus research priorities, obtain rapid customer/Market feedback, and accelerate innovation/incubation stages. Michelin’s entrance into the hydrogen fuel cell market has been steered by the CIB; 2) sustainability team – provides business lines with training, cross-coordination of opportunities, insights on competitor/customer/peer climate change strategy, 3) life cycle assessment unit – enables business units to evaluate environmental impacts including CO2 footprint to inform product development; 4) strategic anticipation team – provides climate scenario analysis workshops and forward-looking business trends analysis covering climate change issues; 5) strategy department – structures the annual strategic planning process in line with Michelin’s “All Sustainable” approach of safer, universally accessible, more efficient and greener mobility (cf. SuM4All, World Bank initiative); 6) public affairs – anticipates regulatory changes to optimize benefits and reduce risks related to CO2 regulations and low-carbon products; 7) norms & regulations – develops and implements strategies to set common industry/sector rules to promote low-carbon products and services; 8) sustainability manager at business unit level – provides customer insights and supports development of new models of low-carbon products and services. The main opportunities recognized as having substantive financial or strategic impacts are thus reported in C2.4a. Emerging risks and opportunities whose impacts would be well below the thresholds for substantive impact, that occur sporadically or are very slowly emerging are nevertheless identified and assessed. The areas involved are primarily current and emerging regulation, market pressures for low-carbon products & services and negative media coverage or stakeholder feedback. These risks are handled by the environment/public affairs/norms & regulations, business units/sustainability/strategy and brands & communications departments, respectively. Underlying trends are regularly reviewed by the Carbon Strategy Committee, a standing work group of experts covering all operations and by the network of business units’ sustainability managers. They are also assessed each year in a forward-looking (medium-term time horizon) analysis by the strategic anticipation team.
<table>
<thead>
<tr>
<th>Current regulation</th>
<th>Relevant, always included</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory risks are assessed jointly by specialists in the environment, public affairs and norms &amp; regulations departments and reviewed regularly by the Carbon Strategy Committee which operates under the Environment Governance body. Current regulations are deemed a relevant risk because they can have impacts across Michelin’s activities and in multiple geographic zones, particularly manufacturing, with financial impacts that are currently material and potentially substantive, as defined under C2.1b. An example of a specific risk taken into account: the financial impact of emissions trading systems regulations in Europe and Shanghai. The level of risk is assessed, and risk reduction is managed by the CO2 Allowances Work Group, established in 2005 and bringing together specialists at both corporate and applicable country levels in greenhouse gases (GHG), energy buying, energy efficiency, finance and accounting. The standing work group monitors CO2 allowances applied under the EU and Chinese regulations cited above and their current and forecasted costs and makes recommendations to the corporate head of finance on optimal management of allowances. All decisions on current regulatory risks evaluated above the thresholds for substantive Group-level risks are made or overseen by the Environment Governance body which has responsibility for all climate-related issues below the Group Management Committee (board) which could impact operations.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Emerging regulation | Relevant, always included | Emerging regulations as a corporate risk are assessed jointly by specialists in the environment, public affairs and norms & regulations departments and reviewed regularly by the Carbon Strategy Committee which operates under the Environment Governance body. Emerging regulations are a relevant risk because they can have impacts across Michelin’s activities and particularly on manufacturing and product design, with financial impacts that are potentially material and or substantive, as defined under C2.1b. Manufacturing could be impacted by newly created CO2 quota or tax systems at country or regional level. An example of a specific risk taken into account: China is rolling out additional ETS systems beyond that in Shanghai, and Michelin operations in that country could be impacted. The level of risk is assessed and risk reduction is managed by the CO2 Allowances Work Group, a standing work group bringing together specialists at both corporate and applicable country levels in greenhouse gases (GHG), energy buying, energy efficiency, finance and accounting with support from public policy experts to anticipate requirements and integrate them into operational products. Product design could be impacted by vehicle tailpipe CO2 emissions standards, tire performance thresholds and/or tire labeling/gripping systems at country level. In the US, the government may weaken tailpipe standards. Under UN vehicle regulations, signatory countries are putting in place tire performance regulations: for example, Japan is expected to do so by 2024. Michelin’s activities in these two markets could be impacted. The risks and opportunities of such emerging regulations are evaluated and identified jointly between the norms and regulations and public affairs departments, in coordination with the potentially impacted business units. Action plans to address potential compliance issues are built by the business units responsible for the type of tires in question. All decisions on emerging regulatory risks evaluated above the thresholds for substantive Group-level risks are made or overseen by the Environment Governance body which has responsibility for all climate-related issues below the Group Management Committee (board) which could impact operations. |

| Technology | Relevant, always included | Technology is deemed a relevant risk for 2 reasons: because of rapid changes to the mobility landscape and increasing pressures to improve the sustainability of products. 1) Mobility & technology: R&D and strategic anticipation teams identify technology trends and disruptive innovation in mobility and assist the business units to evaluate how that would create risks or opportunities. These trends and new ideas are also studied, developed and tested by the business units internally and externally through diverse ecosystems including those created through the MoviOn Sustainable Mobility Summit and MoviOn LABs, a collaborative mobility platform. An example of a specific risk considered: whether to enter into vehicle electrification market. Michelin has been developing hydrogen fuel cell technologies, partnerships and business models for over 15 years, with risk and opportunity assessments conducted at each stage, thus shaping a 2019 decision with Faurecia to create a joint venture for Symbio to become a world leader in hydrogen fuel cell systems. All decisions on technology risks related to market offers that are evaluated above the thresholds for substantive Group-level risks are made by the business units whose respective risk management plans and 5-year strategic plans are overseen and approved by the Group Management Committee (board) through the annual strategic planning process. 2) Sustainability & technology: R&D technology watch is in place for the design that includes new means to increase energy efficiency and reduce tire mass, while incorporating more materials from renewable sources. Michelin's CO2 footprint; this is why Michelin requests third-party verification of its Scope 1, 2 and 3 emissions prior to publication in the annual report and on the corporate website. All decisions on current regulatory risks evaluated above the thresholds for substantive Group-level risks are made by the business units whose respective risk management plans and 5-year strategic plans are overseen and approved by the Group Management Committee (board) through the annual strategic planning process. |

| Legal | Not relevant, explanation provided | As regulations are promulgated on CO2 tailpipe emissions standards, compliance is relevant for vehicle manufacturers, but not for tire manufacturer like Michelin. Because tire rolling resistance contributes significantly to vehicle energy efficiency and therefore to reducing CO2 emissions generated by the vehicle, Michelin does strongly advocate for the use of real rolling resistance values, and not just theoretical values, in the determination of vehicle CO2 emissions. However, this issue is a technical one, and does not represent a material legal risk for Michelin. CO2 regulations on industrial emissions via quotas or taxes can have a financial impact but have not in actual practice represented any kind of legal risk for Michelin and are therefore not material. |

| Market | Relevant, always included | The relevance of market conditions as a corporate risk is considered to be assessed by business units with support from several departments: corporate sustainability, strategic anticipation, norms & regulations, public affairs, purchasing. Jointly they also assess the level of risks, with the business units deciding on how to manage them. Market risks are relevant because an increasing number of customers are including climate-related criteria in tenders and supplier awards, as well as requesting environmental audits of Michelin sites and those of Michelin’s suppliers that include energy efficiency and CO2 emissions. An example of a specific risk considered in assessments: following two customer requests for Michelin supplier audits in China in 2018, the purchasing department is anticipating future supplier audits to manage the risk of environmental non-compliance and the potential market disruptions (shortage of raw materials or finished product). All decisions on market risks that are evaluated above the thresholds for substantive Group-level risks are made by the business units whose respective risk management plans and 5-year strategic plans are overseen and approved by the Group Management Committee (board) through the annual strategic planning process. |

| Reputation | Relevant, always included | Regulatory risks related to climate change are relevant because of increasing scrutiny by the public authorities, citizenry, NGOs etc. Media attention is assessed by the corporate brands and external engagement department, which also assesses and manages risks through a) a media watch to monitor issues related to climate change and b) transparency in all Michelin communications on the topic. An example of specific risk considered in the assessment: with eroding public trust of the private sector in general, the need for transparency is evident when making claims of climate-related performance (e.g., reporting CO2 reductions), following up on announced objectives and ambitions, and engaging with suppliers to reduce the Scope 3 footprint: this is why Michelin requests third-party verification of its Scope 1, 2 and 3 emissions prior to publication in the annual report and on the corporate website. All decisions on reputational risks related to climate change evaluated above the thresholds for substantive Group-level risks are made or overseen by the Environment Governance body which has responsibility for all climate-related issues below the Group Management Committee (board) which could impact operations. |

| Acute physical | Relevant, sometimes included | Extreme weather events are a relevant risk due to their increasing frequency and force. While the number of Michelin sites impacted by such events over the last 10 years remains quite low, impacts to sites in the upstream and downstream value chain are being identified more and more often. For example, a number of supplier sites were shut down following Hurricane Harvey in Texas in 2017. An example of a specific risk taken into consideration: supplier sites located in areas prone to acute water shortages have been identified. Because of the unpredictability of acute physical impacts, some but not all possible scenarios have been taken into account in the risk assessment process. As the sensitivity of sites and operations is better known, extreme weather event scenarios will be further refined. Decisions on acute physical risks evaluated above the thresholds for substantive Group-level risks are made or overseen by the Environment Governance body which has responsibility for all climate-related issues below the Group Management Committee (board) which could impact operations. |

| Chronic physical | Relevant, sometimes included | Concerning both direct operations and supply chain activities, Michelin has begun to map the potential long-term physical impacts of climate change through the use of qualitative climate change scenarios coupled with scientific information gathered and summarized in a specific study in 2019. Unlike acute physical impacts, chronic physical impacts from climate change are not relevant to Michelin activities in the short- and medium-term. The reason is twofold: 1) impacts have not been observed, and 2) information about future impacts is not specific enough to inform the company about potential risks. Example: as global temperatures rise the geographic distribution of crops and vegetation will shift. This could have an impact on production of natural rubber, a key raw material for making tires. Areas of optimum versus sustainable rubber production will surely evolve. Current predictions, however, involve long-term hypotheses associated with levels of uncertainty that are too high to support current decision-making on rubber procurement. In the meantime, Michelin’s response to this uncertainty about the future is 1) diversification with suppliers from different countries in the tropical zone; 2) ensuring the resilience of its own plantations in Indonesia through a holistic approach to sustainable natural rubber production; 3) promoting sustainable practices in the natural rubber sector as a founding member of the Global Platform for Sustainable Natural Rubber. |

C2.2a (C2.2a) What kind of climate-related risks are considered in your organization's climate-related risk assessments? Yes

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.

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Risk 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is :</td>
<td>-</td>
</tr>
</tbody>
</table>
Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

<table>
<thead>
<tr>
<th>Technology</th>
<th>Transitioning to lower emissions technology</th>
</tr>
</thead>
</table>

Primary potential financial impact
Increased capital expenditures

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Michelin has committed to reducing its manufacturing carbon footprint by 38% over the medium-term (SBTi-approved target for 2010-2030), and is developing a more ambitious roadmap of -50% by 2030 (2010 baseline year) which will be the cornerstone of reaching Michelin's goal of net zero CO2 emissions by 2050. One major means to achieve this goal is improving the energy efficiency of industrial operations. With 70 plants across 4 geographic zones, the financial implications are major. Thus, the choice and cost of new methods, equipment and technologies constitutes the risk driver. Manufacturing energy efficiency can be optimized across all Michelin's plants with new types of equipment and processes, combined with steadfast application of best management methods. Examples of process improvements: reducing steam leaks in the tire curing process, controlling leaks of compressed air, capturing heat in cooling towers, increasing the efficiency of electric motors, increasing the efficiency of the rubber mixing process, converting curing presses from steam to electric. Example of best management methods: optimizing machine start-up and shut-down time to curtail energy needs.

Time horizon
Long-term

Likelihood
Virtually certain

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
23000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The figure represents the estimated average annual capital investments in energy efficiency required to achieve a 50% reduction of CO2 emissions (tonnes) from 2010-2030. In 2019, the energy efficiency improvement program was supported by €17.81 million in capital expenditure.

Cost of response to risk
1000000

Description of response and explanation of cost calculation
To manage this technology risk response over the medium-term, the main opportunities (energy audits, the identification and application of best practices, technology changes, equipment upgrades, etc.) and their deployment across Michelin's manufacturing facilities is coordinated at the corporate level by a core team -- the Energy Expert Team comprised of specialists across EHS, industrial operations, engineering and purchasing departments -- and implemented by a network of on-site energy experts. The overall approach is structured around a framework of energy audits, based on ISO 50001, and lean manufacturing methods. A detailed roadmap of CO2 reductions that can be achieved through energy efficiency has been developed and is reviewed at least once a year by the Environment Governance body, operating under the Group Management Committee (GMC). The CO2 reduction roadmap consists of feasible technologies, their costs and implementation time frames and has been widely shared across the company. In all, 19 distinct energy efficiency initiatives have been launched worldwide covering behavioural changes (no cost), management of industrial processes (low cost), and capital investment in equipment and infrastructure (medium to high costs). Projects implemented at one site can often be replicated at others. For example, in 2017 a heat recovery pump was installed in a cooling tower at a French plant. This technical solution is now being studied for application at other sites around the world. The heat recovery pump installed at the Gravanches site in France in 2019 enabled the site to become the Group’s first zero CO2 emissions plant. Plant-level operating and capital costs are forecasted by Energy Expert Team and communicated to industrial directors in each Region. The latter incorporate the specific actions and their costs into the 5-year strategic plans that are updated and managed through the annual strategic planning process. Final 5-year strategic plans and associated major capital investments are approved by the GEC. Progress against the 2030 CO2 reduction target and the pathway to carbon neutrality in 2050 is monitored by the Group Management Committee (GMC) with support from the Environment Governance body. The cost represents the number of full-time equivalent staffing required on an annual basis.

Comment

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

<table>
<thead>
<tr>
<th>Technology</th>
<th>Transitioning to lower emissions technology</th>
</tr>
</thead>
</table>

Primary potential financial impact
Increased capital expenditures

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>
Company-specific description
Michelin has committed to reducing its manufacturing carbon footprint by 38% over the medium-term (SBTi-approved target for 2010-2030) and is developing a more ambitious roadmap of -50% by 2030 (2010 baseline year), which will be the cornerstone of reaching Michelin's goal of net zero CO2 emissions by 2050. One major means to achieve this goal is to implement the coal exit strategy. Today, four of the Group's manufacturing facilities are equipped with coal-fired boilers -- 3 in Europe and 1 in North America -- while another, in China, purchases steam from a coal-fired plant. The costs of replacing current coal-burning equipment with low- or zero-carbon technology represent a significant proportion of the overall manufacturing investments portfolio and thus constitute the risk driver. Furthermore, renewable alternatives to thermal energy are lagging behind those for electric energy. The highly disparate availability and costs of renewable thermal energy contribute to the uncertainties of pursuing the installation of new on-site energy technologies, thus contributing to the risk driver.

Time horizon
Long-term

Likelihood
Virtually certain

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
6000000

Potential financial impact figure – maximum (currency)
15000000

Explanation of financial impact figure
The figures represent the range of estimated average annual capital investment required under 2 main scenarios for setting up alternative sources of thermal power and the necessary onsite technology for the 4 manufacturing sites in question. The final cost will depend on the options chosen following the conclusion of site-specific feasibility studies. The cost bracket corresponds to 0.3% to 0.9% of current levels Michelin's total annual capital expenditure of slightly under €2 billion/year.

Cost of response to risk
3800000

Description of response and explanation of cost calculation
To manage this technology risk response over the medium-term, a strategy for completely phasing out coal-fired boiler use by 2030 has been mapped out at the corporate level by a core team -- the Energy Expert Team comprised of specialists across EHS, industrial operations, engineering and purchasing departments. In 2018, the Environment Governance body, operating under the Group Executive Committee (GEC), approved the strategy. Studies to assess the feasibility of replacing coal with natural gas, biomass or other primary energy source are already underway at four of the five plants. The site-specific projects are being done in phases: the North American site from 2020 to 2022, 1 European site from 2022 to 2025, a second European site from 2023 to 2026. The third European site, in Olsztyn, Poland, is currently taking the first step towards phasing out coal by installing a new gas boiler, which is expected to supply nearly 20% of its heating needs as from 2020. Regarding the site in China, the Energy Expert Team has thus far detected no alternative options to purchasing steam from a coal-fired plant; the evolving energy landscape in China is closely monitored for potential renewable or low-carbon energy solutions. Plant-level operating and capital costs under different technology and energy supply scenarios are forecasted by the Energy Expert Team and communicated to the site project teams. The latter incorporate final coal replacement project costs into the sites' 5-year strategic plans that are updated and managed through the annual strategic planning process. Final 5-year strategic plans and associated major capital investments are approved by the GEC. Progress against the 2030 CO2 reduction target and the pathway to carbon neutrality in 2050 is monitored by the Group Management Committee (GMC) with support from the Environment Governance body. The cost represents the number of full-time equivalent staffing required and partnerships/contracts with external organizations to carry out the coal phase-out projects from beginning to end.

Comment

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Risk 3</th>
</tr>
</thead>
</table>

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

<table>
<thead>
<tr>
<th>Market</th>
<th>Uncertainty in market signals</th>
</tr>
</thead>
</table>

Primary potential financial impact
Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Michelin has committed to reducing its manufacturing carbon footprint by 38% over the medium-term (SBTi-approved target for 2010-2030), and is developing a more ambitious roadmap of -50% by 2030 (2010 baseline year) which will be the cornerstone of reaching Michelin's goal of net zero CO2 emissions by 2050. One major means to achieve this goal is through purchasing renewable energy, primarily electricity but also thermal energy where available. Michelin's approach to renewable energy purchases, regardless of the geographic zone, is to meet 3 feasibility criteria: business continuity, capital and operating costs, and CO2 reductions. A given renewable energy source may not meet all three criteria at a sufficiently robust and sustainable level. Furthermore, the production process requires significant use of thermal energy.

Unlike electricity, thermal energy cannot be easily generated by renewable energy sources, which increases the risk of unavailability or prohibitive costs.

Time horizon
Long-term

Likelihood
Virtually certain

Magnitude of impact
Low

Are you able to provide a potential financial impact figure?
Yes, an estimated range

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
6000000

Potential financial impact figure – maximum (currency)
8000000

Explanation of financial impact figure
Renewable energy prices can fluctuate, depending on the choice between procurement through renewable energy certificates or through dedicated on- or off-site installations and the type of contractual arrangements. The minimum and maximum figures provided represent the current estimated annual costs of procuring renewable electricity through energy attribute certificates (EACs) and/or corporate power purchase agreements (PPAs). Certain on-site PPAs can involve capital expenditure, but the levels are highly variable and are being refined through requests for information and feasibility studies regarding manufacturing operations in Europe, North/Central/South America, South/Southeast Asia and China.

Cost of response to risk
55000

Description of response and explanation of cost calculation
To manage this market risk response over the medium-term, the main opportunities (for renewable electricity, purchase of EACs and/or establishing corporate PPAs; for renewable thermal energy, purchasing biomass-generated steam) and their deployment across Michelin's manufacturing facilities is coordinated at the corporate level by a core team -- the Energy Expert Team comprised of specialists across EHS, industrial operations, engineering and purchasing departments -- and implemented by a network of regional purchasing officers in concert with site-level energy technicians. A roadmap of CO2 reductions that can be achieved through renewable energy use has been developed and is reviewed at least once a year by the Environment Governance body, operating under the Group Executive Committee (GEC). To further develop the CO2 reduction roadmap, the Energy Expert Team is tasked with 1) researching all possible opportunities for renewable energy sourcing worldwide, 2) evaluating the risks and opportunities of specific purchasing projects, and 3) applying the 3 feasibility criteria (cost, stability and security of supplies over time, and CO2 reductions). Examples of renewable energy purchasing decisions: in Thailand, the Nonkgae facility is the Group's first production plant outside Europe to use electricity from renewable sources, as part of a power purchase agreement covering 1.5% of its needs; three biomass contracts are in place, and several other offers are being considered, in the context of a more robust European market and rising availability in Thailand. Plant-level operating and capital costs are forecasted by Energy Expert Team and communicated to industrial directors in each Region. The latter incorporate the specific actions and their costs into the 5-year strategic plans that are updated and managed through the annual strategic planning process. Final 5-year strategic plans and associated major capital investments are approved by the GEC. Progress against the 2030 CO2 reduction target and the pathway to carbon neutrality in 2050 is monitored by the Group Management Committee (GMC) with support from the Environment Governance body. The cost represents the number of full-time equivalent staffing required on an annual basis for the Energy Expert Team and regional purchasing officers.

Comment

Identifier
Risk 4

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver
Current regulation Carbon pricing mechanisms

Primary potential financial impact
Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Michelin manufacturing operations are subject to carbon taxes in France and CO2 allowance systems in two jurisdictions -- 19 sites in the European Union and 1 site in Shanghai. The European Emissions Trading System (ETS) will close out Phase III in 2020. Michelin is actively preparing the start of Phase IV in 2021 by taking into account all remarks made by third party verification organizations on maintaining robust CO2 measurements, monitoring and accounting, thereby ensuring optimal allocation of allowances. Since the European ETS costs alone are projected to exceed annual operating expenses & capital investments for sustainable use of energy by up to 50%, this risk is relevant.

Time horizon
Medium-term

Likelihood
Virtually certain

Magnitude of impact

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

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
11000000

Potential financial impact figure – maximum (currency)
26000000

Explanation of financial impact figure
The figures represent the estimated annual costs of CO2 allowances from 2020 (minimum impact figure) to 2030 (maximum impact figure). The estimates are based on: 1) projected reductions in CO2 emissions within the scope of concerned plants, taking into account the planned and anticipated exit of several manufacturing plants from the European ETS as well as a major energy operational modification at the site in Poland; 2) the sharp reduction of CO2 allowances attributed at no cost, applying the new rules of the EU ETS Phase IV, particularly regarding reduction of exposed sectors; 3) the forecasted annual costs of CO2 allowances in the EU ETS market. The increased costs are projected to be the sharpest in the first few years - in 2023 the cost is estimated at 17 M€ – and then gradually increasing each year to 2030.

**Cost of response to risk**
50000

**Description of response and explanation of cost calculation**
Management of this risk is ensured by the CO2 Allowances Work Group, created in 2005 to track legislation governing carbon markets and taxes in all of the Michelin plants’ host countries. Comprising specialists at both corporate and applicable country levels in greenhouse gases (GHG), energy buying, energy efficiency, finance and accounting, its role is to define principles and guidelines of CO2 allowances management, ensure their proper application, regularly consolidate and review CO2 allowances and emissions, conduct the necessary forecasting studies on allowances and costs, make recommendations to the corporate head of finance on major decisions to buy, sell or hold allowances and to execute the decisions. This work is done currently, and for both the short- and medium-term time horizons, and is supported by the norms and regulations and public affairs departments to anticipate upcoming legislation around the world. Any issues not resolved by the corporate finance department would be taken first to the Environment Governance body and, if necessary, to the Group Management Committee. The cost represents the number of full-time equivalent staffing required on an average annual basis.

**Cost of response to risk**
50000

**Comment**

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Risk 5</th>
</tr>
</thead>
</table>

**Where in the value chain does the risk driver occur?**
Direct operations

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

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

**Primary potential financial impact**
Decreased revenues due to reduced production capacity

**Climate risk type mapped to traditional financial services industry risk classification**
<Not Applicable>

**Company-specific description**
Taking into account Michelin’s diverse activities around the world, the activities that could be materially impacted by a severe weather event is manufacturing and logistics operations, including warehousing and upstream and downstream transportation. Several Michelin facilities have been impacted in the past 10 years in different geographic regions: Thailand and India (flooding), Brazil (electrical supply shortages caused by prolonged drought) and North America (tornado). A number of Michelin supplier sites on the US Gulf Coast have also been impacted, for example during the North American hurricane season in 2017. Some transport costs have increased as a consequence of reduced capacity for barge transport of industrial goods on the Rhine River, which is has been at historically low levels in the last 3 years due to drought. As severe weather events are highly variable and unpredictable, the risk is considered as emergent and thus subject to increased monitoring and anticipation.

**Time horizon**
Short-term

**Likelihood**
About as likely as not

**Magnitude of impact**
Medium

**Are you able to provide a potential financial impact figure?**
Yes, an estimated range

**Potential financial impact figure (currency)**
<Not Applicable>

**Potential financial impact figure – minimum (currency)**
0

**Potential financial impact figure – maximum (currency)**
150000000

**Explanation of financial impact figure**
Extreme weather events can potentially disrupt operations, directly by shutting down or damaging manufacturing or warehouses facilities and/or indirectly by impacting activities in the supply chain. Business disruption is assessed as a risk in and of itself. Many scenarios are evaluated, including those involving severe weather events as a cause. Given all the scenarios evaluated and the mitigation measures in place, the potential financial impact has been estimated within a bracket that would not in a given year reduce annual revenue by more than the higher end figure reported.

**Cost of response to risk**
400000

**Description of response and explanation of cost calculation**
Michelin’s production plants are located in 25 countries across 5 continents. This geographic distribution means that different tire lines are produced in locations that are subject to different weather phenomena occurring at different times during a given year. Tire manufacturing and distribution take place as close as possible to markets, but with back-up supplies in the same region (e.g., China, North America, Northern Europe, Southern Europe) or, if necessary, that can be transported from other geographic zones, thus limiting risk of shortage or unavailability of finished products. In line with the recommendations issued by the corporate risk department, risks associated with climate change have been reviewed and business continuity plans in the event of extreme weather events have been assessed. Extreme weather event patterns, while evolving, concern only a few facilities, without material financial repercussions for the Group. Each facility has implemented prevention plans to ensure business continuity and employee safety. An example is the Chennai production site in India. Following the 2015 monsoon and flooding event, existing emergency management protocols were reinforced, and personnel policies were modified to increase the number of employees hired from neighboring locations. Extreme weather events have the potential to disrupt activities in the supply chain, the risks of which are addressed in the scenarios of disruption to direct operations, not as separate scenarios. To manage this risk, the corporate purchasing department maintains business continuity plans which 1) call for maintaining a diversity of suppliers, in number and geographic location, for each type
of raw material required, and 2) a regular review of vulnerability to energy supply disruptions. An example of how this approach has been successful is illustrated by the consequences of Hurrican Harvey in 2017: while some supplier sites located on the Texas Gulf Coast were forced to close due to hurricane damage, Michelin was able to work with existing suppliers located in other regions to provide the necessary raw materials with no disruption to deliveries. The cost represents the number of full-time equivalent staffing required on an annual basis to manage site-specific business continuity plans.

Comment

C2.4

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

Yes

C2.4a

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

**Identifier**

Opp1

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

Downstream

**Opportunity type**

Products and services

**Primary climate-related opportunity driver**

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

**Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

**Company-specific description**

In every market, climate issues and societal expectations (e.g., COP21) are forcing people to seek alternatives for their personal mobility. Consumer aspirations are converging on the importance of vehicles that are safe, with a low total cost of ownership and a small environmental footprint. Thus, fuel-efficient, durable and safe tires are important. With its technical leadership in total performance of tires, Michelin stands to benefit from its business to consumers, both directly and via original equipment manufacturers. Meeting the challenges of sustainable mobility require continuous improvement in the energy efficiency of all vehicles, whatever the power train. Rolling resistance accounts for 20% of fuel use in a passenger car and 30% in a truck. For electric vehicles, the impact of tires can exceed 30% of total energy consumption. Michelin’s research leadership in reducing rolling resistance and tire mass without sacrificing safety offers many opportunities for growth and differentiation. Michelin’s goal of reducing the average RR of the tyres by 12% between 2010-2020 (20% by 2030) is on its way to be achieved.

**Time horizon**

Short-term

**Likelihood**

More likely than not

**Magnitude of impact**

Medium

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

Yes, a single figure estimate

**Potential financial impact figure (currency)**

1020000000

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

<Not Applicable>

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

<Not Applicable>

**Explanation of financial impact figure**

The global tire market was estimated at US$ 170 billion in 2018, with light-vehicle tires accounting for 60% for a total market segment worth US$102 billion. Michelin’s market share was 14% in 2018; an increase in market share of just 1% could represent an increase in earnings of US$1.020 billion. This is without considering increased demand for tires. Beyond 2020, Michelin anticipates an annual segment growth of 2%. Over the long term, Michelin expects demand for tires to grow by 1-2% a year in mature markets and by 5-10% a year in the new markets. Note: these financial estimates have been officially published in US$ in the 2019 annual report. Converting them here to euros would not provide a meaningful value given the exchange rate fluctuations.

**Cost to realize opportunity**

687000000

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

Sustainable mobility requires vehicles to move towards cleaner propulsion. OEMs have to consistently improve the CO2 emissions of their new cars. Michelin has been a leader providing them low rolling resistance (RR) tires. Michelin aims to continue improving the energy efficiency of its offers. The goal of reducing the average RR of the tyres by 12% between 2010-2020 (20% by 2030) is on its way to be achieved. This is achieved while keeping the best possible balance of performance on wear and grip to provide the best cost of ownership improving the longevity. R&D teams are currently working on specific projects targeting RR improvement up to 30% in the coming 10 years. Michelin has adapted its tire offers for the electric vehicle market with MICHELIN ENERGY™ EV (Electric Vehicle) tire being the first step in a joint R&D program with Renault ZOE (improvement the vehicle's general autonomy while providing excellent grip, longevity, silence and comfort). New Tire lines adapted to EVs and improving tyre/vehicle Life Cycle Assessment are being defined in the 2021 and above Product Plan. Michelin has also initiated EV collaboration programs with car makers (TESLA, PSA, RNM, GM, PORSCHE, VOLVO, XIAOPENG, …). Moreover, Michelin’s HLC (High Load Capacity) tyres contribute to increasing OEMs’ efficiency by enabling vehicles to carry heavy batteries for their new developed EVs. Furthermore, convinced that hydrogen is an optimized solution to reduce environmental footprint, Michelin develops partnerships with major players of this market. The cost to realize opportunity in 2019 corresponds to R&D expenses that stood at €687 million.
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
Michelin stands ready to meet changing customer demand for different tire performances able to respond to changing and new weather conditions (e.g., with winter tires and all-season tires). Climate change might alter consumer demand for tires: in the US, Michelin is already responding to customers’ demand for all-season tires to avoid having to switch from winter tires to summer tires and vice versa. The introduction of Michelin’s CrossClimate range in Europe in 2015, that combines excellent performance in winter with excellent performance in summer, has been a first major extension of this approach, followed by the launch of Cross Climate SUV range in 2017, and Agilis Cross Climate for Vans in 2019. Since 2015, All Season market has grown in Europe by 26% per year (vs market average growth around 1%, excluding All Season). In this new market, Michelin has taken a leader role and will continue in the future, in particular by aiming at homologating with European OEMs this all-season range.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
1020000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The global tire market was estimated at US$ 170 billion in 2018, with light-vehicle tires accounting for 60% for a total market segment worth US$102 billion. Michelin’s market share was 14% in 2018; an increase in market share of just 1% could represent an increase in earnings of US$ 1.020 billion. This is without considering increased demand for tires. Beyond 2020, Michelin anticipates an annual segment growth of 2%. Over the long term, Michelin expects demand for tires to grow by 1-2% a year in mature markets and by 5-10% a year in the new markets. Note: these financial estimates have been officially published in US$ in the 2019 annual report. Converting them here to euros would not provide a meaningful value given the exchange rate fluctuations.

Cost to realize opportunity
687000000

Strategy to realize opportunity and explanation of cost calculation
Michelin invests in research and innovation to retain the technological leadership required to meet changing customer demands. The innovation strategy is driven by the Corporate Innovation Board which supervises a process involving: 1/ R&D teams and their adoption of new technologies, collaboration with external research centers and cooperation with the marketing teams specialized by business lines; 2/marketing teams in regions to adapt products or service concepts to customers’ needs & get them quickly to market, while meeting the highest quality. Michelin launched 4 new products over the last 4 years: 1/the all-season Premier A/S tire for the North American market; 2/the CrossClimate tire, the first summer tire in the world with a winter certification, providing enhanced mobility for motorists in daily changing conditions. A CrossClimate+ with longer lasting performances was launched in 2016. 3/the Cross Climate SUV and 4/ the Agilis Cross Climate for Vans. All these products are designed to perform optimally in extreme temperatures from -30°C to +35°C and rely on Michelin EverGrip technologies, a combination of innovations in material and sculpture. This opportunity has been confirmed by the market response and an industry award. The cost to realize opportunity in 2019 corresponds to R&D expenses that stood at €687 million.

Comment

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
Other, please specify (Better competitive position to reflect shifting consumer preferences, resulting in increased revenues)

Company-specific description
Becoming the leader in sustainable mobility is the ambition and purpose of the Michelin group, an ambition reaffirmed by its Long Lasting Performance approach which Michelin put at the heart of its activities in order to better serve consumers. In 2019, Michelin has summarized this value proposal through the moto “Michelin Tyres,
Performance Made to Last. Our promise is to design tyres with the aim to make them able to drive a long way while keeping a high level of performance from the first to the last kilometer. In 2019, EU institutions have recognized this approach by adding the principle of worn tire testing to the EU regulations in a move applauded by Michelin. The fact that wet braking performance, which is key to safety, decreases as tires are used highlights the importance of evaluating worn tires. Contrary to popular belief, tread depth doesn’t guarantee safe tires. The real difference lies in how well tires are designed. Michelin’s Long Lasting Performance is good for the environment and consumers’ budgets. Why? Because tires that perform well till last kilometer mean tires changed less often. Based on an EY study made in May 2017, early replacement leads to the consumption of up to 126 million extra tires in Europe every year – a figure which represents 6.6 million tons of additional C02 emissions per year and a useless spending of 6.9 billions euros for consumers.

**Time horizon**
Short-term

**Likelihood**
Very likely

**Magnitude of impact**
Medium

**Are you able to provide a potential financial impact figure?**
Yes, a single figure estimate

**Potential financial impact figure (currency)**
1020000000

**Potential financial impact figure – minimum (currency)**
<Not Applicable>

**Potential financial impact figure – maximum (currency)**
<Not Applicable>

**Explanation of financial impact figure**
The global tire market was estimated at US$ 170 billion in 2018, with light-vehicle tires accounting for 60% for a total market segment worth US$102 billion. Michelin’s market share was 14% in 2018; an increase in market share of just 1% could represent an increase in earnings of US$ 1.02 billion. This is without considering increased demand for tires. Beyond 2020, Michelin anticipates an annual segment growth of 2%. Over the long term, Michelin expects demand for tires to grow by 1-2% a year in mature markets and by 5-10% a year in the new markets. Note: these financial estimates have been officially published in US$ in the 2019 annual report. Converting them here to euros would not provide a meaningful value given the exchange rate fluctuations.

**Cost to realize opportunity**
687000000

**Strategy to realize opportunity and explanation of cost calculation**
Michelin invests in research and innovation to retain the technological leadership required to meet changing customer demands. The innovation strategy is driven by the Corporate Innovation Board which supervises a process involving: 1/R&D teams and their adoption of new technologies, collaboration with external research centers and cooperation with the marketing teams specialized by business lines; 2/marketing teams in regions to adapt products or service concepts to customers’ needs & get them quickly to market, while meeting the highest quality. Future-products cahier-des-charges integrate a Long lasting Performance objective with a performance in line with the critical output expected by a specific tyre line. This opportunity has been confirmed by the market response and an industry award, notably the Innovation Award delivered in 2019 by the German Design Council. The cost to realize opportunity in 2019 corresponds to R&D expenses that stood at €687 million.

**Comment**

**Identifier**
Opp4

**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**
Business to Business – Road transportation accounts for over 70% of total transport-related emissions worldwide. Consequently, the road transportation industry as a whole has to respond to the challenge of maintaining mobility while decreasing GHG emissions. The influence of tires (i.e., rolling resistance) can account for over 30% of total energy consumption of a truck. Michelin’s research leadership in reducing rolling resistance and tire mass without sacrificing safety is captured by the Group’s “materials-efficiency index”, which ensures that tire performance is steadily increased while using fewer materials. Optimizing tire rolling resistance is a key lever for original equipment manufacturers (OEMs) and truck fleets to reduce their environmental footprints; it is also an extremely attractive means to improve overall truck energy efficiency in terms of cost, time to market, and technical accessibility. The Michelin group develops a wide range of services to help fleets and OEMs to optimize their operations, in tire and asset management (e.g., number of trailers).

**Time horizon**
Short-term

**Likelihood**
Very 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)**
510000000

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

Explanation of financial impact figure
The global tire market was estimated at US$170 billion in 2018, with light-vehicle tires accounting for 30% for a total market segment worth US$102 billion. Michelin’s market share was 14% in 2018; an increase in market share of just 1% could represent an increase in earnings of US$510 million. This is without considering increased demand for tires. Beyond 2020, Michelin anticipates an annual segment growth of 1.5%. Over the long term, Michelin expects demand for tires to grow by 1-2% a year in mature markets and by 5-10% a year in the new markets. Note: these financial estimates have been officially published in US$ in the 2019 annual report. Converting them here to euros would not provide a meaningful value given the exchange rate fluctuations.

Cost to realize opportunity
687000000

Strategy to realize opportunity and explanation of cost calculation
Innovations known as MICHELIN Durable Technologies deliver a significant improvement in fuel efficiency. Lower rolling resistance enables 24% less CO2 emissions. Retreading and regrooving increases the lifespan of a tire by 2.5 times. A non-retreadable tire vs. a retreaded one, allows 70% material savings, 19% water saving and 21% less air pollution than producing a new tire. MICHELIN X® LINE™ ENERGY™ tires for long haul were the first set of big rig tires rated A in energy efficiency under EU tire-labeling rules. Michelin launched the XMulti Energy range in Europe to offer a solution of CO2 reduction in haulage operations. This range supports OEMs challenge with the new VECTO regulation. In USA, the Michelin X Line Energy D+ tire has been developed for Daimler’s Cascadia Class B heavy-duty truck and participate to the 5% CO2 reduction of the vehicle. Michelin is launching the new generation of X One tyres in North America (X Line Grip D, X line Energy T2) to continue fuel saving and CO2 reduction for fleets in operation. To extend the footprint and accessibility of more environmentally friendly Michelin introduce the ultimate Fuel-efficient ranges in emerging markets such as Brazil, India (X Multi Energy) or China (X Line Energy 2) from 2021. Michelin has a strong innovation ambition on next zero emission vehicle and autonomous including connected tyre system technology. This ambition translates in programs including partnership with OEMs in several regions. Services for fleet operators: MyBestRoute, MyRoadChallenge, MyInspection and MyTraining. These products aim to reduce costs, improve efficiency and reduce CO2 emissions. A Michelin value toolkit was developed offering integrated tire management, with the supply of the best low-rolling resistance tires (EFFITIRES™). EFFITRAILER™ optimizing the semi-trailer management (reducing the number of empty run km and truck downtime). The cost to realize opportunity in 2019 corresponds to R&D expenses that stood at €687 million.

Comment
The source for the retreading information can be found in the EY report “The socio-economic impact of truck tire retreading in Europe,” October 2016.

Identifier
Opp5

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development of new products or services through R&D and innovation

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Michelin is now at a turning point in hydrogen mobility deployment. The EU and many countries have set out ambitious plans for deployment. Vehicle manufacturers are integrating hydrogen into their strategy. Michelin is convinced of the importance of hydrogen technology in tomorrow’s world of zero emissions mobility and the need to create a strong European hydrogen industrial sector. Michelin widely advocates zero net emissions in the transport sector in 2050 as a founding member of the Transport Decarbonization Alliance and on the steering committee of Sustainable Mobility for All. The increased deployment of hydrogen fuel cells will contribute to the reduction of CO2 emissions and improvement of air quality through the use of this renewable energy source. Michelin’s involvement in hydrogen goes back 15 years, starting with R&D. In 2019 Michelin demonstrated its faith in the potential of this emerging market by acquiring Symbio and joining with Faurecia to create a joint venture combining most of their hydrogen fuel cell dedicated activities, with the aim of becoming a world leader in hydrogen mobility. Known as “SYMBIO, A Faurecia Michelin Hydrogen Company”, and built around a unique ecosystem, the new unit will develop, produce and market hydrogen fuel cell systems for cars, utility vehicles, trucks and other electromobility applications.

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
150000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
By 2030, the hydrogen fuel cell market will represent two million vehicles, half of which will be produced by carmakers. Symbio is dedicated to becoming the leader in the accessible market (corresponding to one million vehicles), with a share of 25% and around €1.5 billion in revenue.

Cost to realize opportunity
140000000

Strategy to realize opportunity and explanation of cost calculation
To realize this opportunity Michelin is creating unprecedented, far-reaching public-private partnerships. One example is the Zero Emission Valley Project in the Auvergne Rhône-Alpes region, which is spearheading the massive, simultaneous deployment of 20 hydrogen vehicles owned by Michelin affiliate Hympulsion and 1,200 green hydrogen refueling stations. This flagship European project has received broad financial support from both the European Union, via the Connecting Europe Facilities fund, and France’s ADEME agency. Michelin is an engaged, unifying stakeholder in the hydrogen fuel chain. As part of the Fuel Cell and Hydrogen Joint Undertaking, a public-private partnership with the European Commission (FCHJU), Michelin chairs Hydrogen Europe, an umbrella organization for European manufacturers, researchers and national associations, and is a member of the French Association for Hydrogen and Fuel Cells (AFHYPAC) and AVERE, an association that supports the deployment of electric mobility systems. The development of hydrogen mobility capabilities perfectly illustrates the Michelin Group’s growth ambitions, particularly in the area of high-tech materials. The strategy also reflects a broader vision of mobility that is more sustainable and widely accessible to all. Moving away from fossil fuels in road transport requires also creating the infrastructure for widespread, efficient and safe use of zero-emission vehicles equipped with hydrogen fuel cells. Collaboration is essential in all business phases and infrastructure planning. Michelin continues to play a strong role in having all stakeholders converge towards market solutions in concert with public policies to address climate change challenges. The cost to realize this opportunity is €140 million. It corresponds to the initial investment from Michelin and Faurecia in the venture to speed up the development of next-generation fuel cells, start-up mass production and grow the business in Europe, China and the United States.

**Comment**

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Opp6</th>
</tr>
</thead>
</table>

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

**Primary climate-related opportunity driver**
Resilience

**Primary potential financial impact**
Other, please specify (Increased reliability of supply chain and ability to operate under various conditions)

**Company-specific description**
Natural rubber’s physical properties make it irreplaceable for the production tires, which is why 75% of the global output goes to the tire industry. Michelin is among the world’s leading buyers of natural rubber. Roughly 40% of the rubber used in tire manufacturing is natural and 60% is synthetic. The production of natural rubber is geographically concentrated, with around 90% of the global output coming from Asia. As a global commodity, natural rubber is subject to extreme pricing variations. Due to growing global demand, the rubber industry may be associated with the deforestation of primary tropical forests, an important climate change driver. Conscious of its footprint and its responsibility to address it, Michelin has committed to source exclusively from plantations that respect “zero deforestation” principles as per its Sustainable Natural Rubber Policy published in 2016, including from the sustainable rubber plantations currently being set up in Indonesia under the joint venture between Michelin the Barito Pacific Group. The purchase of sustainable natural rubber is an opportunity to strengthen CSR practices within the industry and to mitigate impacts on natural environments. Michelin is one of the founding members of the GPSNR (Global Platform for Sustainable Natural Rubber) launched in 2018, to lead improvements in the environmental and socio-economic performance of the natural rubber suppliers.

**Time horizon**
Short-term

**Likelihood**
About as likely as not

**Magnitude of impact**
Low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

**Potential financial impact figure (currency)**
72000000

**Potential financial impact figure - minimum (currency)**
<Not Applicable>

**Potential financial impact figure - maximum (currency)**
<Not Applicable>

**Explanation of financial impact figure**
In the supply chain, the joint-venture project in Indonesia ultimately aims to create 16,000 direct or indirect long-term stable local jobs (see management method). All the actions taken to make Michelin's natural rubber supply sustainable add to the Group's brand value that was estimated at US$7.2 billion in 2019. If these actions add 1% to this value, this could represent a potential financial impact of US$72 million.

**Cost to realize opportunity**
55000000

**Strategy to realize opportunity and explanation of cost calculation**
Michelin published its first Sustainable Natural Rubber Policy in 2016, based on the respect for people, protection of the environment, the prudent use of natural resources, improvement of farming practices and transparent governance. The sector is dominated by smallholders with plantations of less than 5 hectares, making the value chain complex. Michelin assesses the CSR performance of its direct natural rubber suppliers via the EcoVadis rating platform. Michelin also works with suppliers and NGOs to map out its complex value chain using CSR questionnaires adapted to farmers, intermediaries and factories. The Group aims to achieve this mapping for at least 80% of purchased volumes by 2021. In 2015 Michelin entered into a joint-venture with the Barito Pacific Group to produce sustainable natural rubber in Indonesia. This cooperation involves 3 concessions totaling 88,000 ha in the provinces of Sumatra and Borneo, which have been devastated by deforestation. 34,000 ha will be planted with rubber trees (end 2019, 20950 ha have been planted). The remainder will be planted with subsistence crops or will be reserved as HEV forest and the richest hot spots will be protected. This JV will enable Michelin to source up to ~5% of its natural rubber needs. The cost to realize opportunity corresponds to Michelin’s 47% stake in the JV with Barito Pacific Group that was valued at $US 55 million.

**Comment**

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Opp7</th>
</tr>
</thead>
</table>

Where in the value chain does the opportunity occur?  
Downstream

Opportunity type  
Products and services

Primary climate-related opportunity driver  
Development and/or expansion of low emission goods and services

Primary potential financial impact  
Increased revenues resulting from increased demand for products and services

Company-specific description  
Regulations and taxes associated with vehicle emissions provide an opportunity for Michelin to contribute towards emissions reductions through increased demand for low rolling resistance tires. Michelin is a global leader in tire performance related to GHG emissions and fuel efficiency, and regulations will demonstrate the advantages of Michelin products. Through research and development investment, Michelin’s strategic objective is to remain the technological leader in the market. The Group’s green tire ranges help improve the fuel efficiency of vehicles; for example, the Energy Saver tire allows a significant drop of CO2 emissions per km, helping car manufacturers meet the increasingly stringent EU targets for car CO2 emissions. Thus, car manufacturers are voluntarily purchasing Michelin’s products to help their vehicles meet new fuel efficiency regulations.

Time horizon  
Short-term

Likelihood  
High

Are you able to provide a potential financial impact figure?  
Yes, a single figure estimate

Potential financial impact figure (currency)  
742000000

Potential financial impact figure – minimum (currency)  
<Not Applicable>

Potential financial impact figure – maximum (currency)  
<Not Applicable>

Explanation of financial impact figure  
Regulations and taxes associated with vehicle emissions are expected to strengthen demand for low rolling resistance tires for passenger cars and trucks. In Europe, the potential value of this market for Michelin as of 2022 is estimated at €1,600M per year. Other markets are foreseen in North America and Asia.

Cost to realize opportunity  
742000000

Strategy to realize opportunity and explanation of cost calculation  
Michelin has launched both passenger car and truck tire research and development projects aimed at improving the rolling resistance and reducing the tire mass and associated CO2 emissions. As part of the Plateforme des AutomotiveAutomobile Sector (PFA), Michelin, Solvay, the research lab LRCCP, the French Development Agency (ADEME), and other partners launched 2 research projects: 1) BASYS project, launched in 2014, focused on ‘low hysteresis’ LDV materials aims to reduce CO2 emissions by 4 g/km in the passenger car B-segment (subcompacts, super minis, and city cars). The target is to achieve a passenger car fuel efficiency of 2L/100km. 2) PEGASE project. This 3-year research initiative aims to reduce the rolling resistance (-1kgf) and mass (-10kg) of long-haul truck tires while improving the useful lifetime by 10 to 20%. Michelin has also provided technical support in the development of VECTO, a calculation tool introduced by the European Commission for Heavy Duty Vehicle CO2 emissions and fuel consumption. This tool allows the evaluation of a vehicle’s fuel efficiency in the use phase by taking into account the impact of tires and a range of other components. Phase 2, for Bus & coaches has been started and extends the regulation to passenger transport. A third phase will cover in the near future truck bodies and trailers. These vehicles will be taken into account in the VECTO simulations with their mass, their aerodynamic performance and the rolling resistance performance of their tires. The cost to realize opportunity corresponds to R&D expenses in 2019 and Michelin’s contributions to the BASYS and PEGASE initiatives, €21.1M and €32M respectively, over 3-year periods.

Comment  

2019 regulatory agenda as a rulemaking priority. While the US Federal government has not issued a Spring 2020 regulatory agenda (because of the CV19 pandemic), the regulating Agency (NHTSA) has indicated that they consider tire rulemaking on modernizing consumer rolling resistance and wet grip standards a priority to progress on in 2020. China considers introduction of regulatory limits for tyre performances as well as a grading and labelling system by 2021 on a voluntary basis and by 2024 on a mandatory basis. Other countries like India, Vietnam and Thailand are likely to follow in the near future.

Time horizon
Short-term

Likelihood
Virtually certain

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
4932000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Product labelling standards are expected to strengthen demand for low rolling resistance tires, with sales of these tires expected to increase from 200 million units in 2010 to 500 million in 2020 on the original equipment market. This represents a potential market value as of 2020 of US$4.932 million per year. Tire labelling and minimum requirements in Europe, in particular, have shifted the entire market to higher performing tires and accelerate the withdrawal of lower-performing tires.

Cost to realize opportunity
687000000

Strategy to realize opportunity and explanation of cost calculation
Michelin is a global leader in tire performance related to GHG emissions and fuel efficiency. Regulations will demonstrate the advantages of Michelin products. Through R&D investment, Michelin’s strategic target is to remain the technological leader in the market. The Group commissions annual studies by independent bodies to compare its products with the average competing range. Norms and regulations department executes a worldwide strategy to advocate the promulgation of country-level regulations setting minimum performance standards and labelling regulations for tire rolling resistance. Michelin works directly with policy makers and through trade associations on consumer awareness, rule making and technical aspects: in the US, within the US Tire Manufacturers Association; in Brazil, as a member of Associação Nacional da Indústria de Pneumaticos. The cost to realize opportunity in 2019 corresponds to R&D expenses that stood at €687 million.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization’s strategy and/or financial planning?
Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?
Yes, qualitative and quantitative

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

<table>
<thead>
<tr>
<th>Climate-related scenarios and models applied</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCP 2.6</td>
<td>To set a science-based target for reducing Scope 1 &amp; 2 emissions (covering &gt;95% of emissions through the GHG Protocol). Michelin applied the IPCC AR5 RCP 2.6 climate scenario. Under this scenario, the minimum reduction required is 49% absolute emissions reduction from 2010 to 2050, or a linear 1.23% reduction per year on average (-49%/40 years = -1.23%/yr). The target that was approved by SBTi is as follows: 38% absolute emissions reduction from 2010 to 2030, equivalent to a 1.9% reduction per year on average (-38%/20 = -1.9%). This target is a result of linear and non-linear modelling based on technological and cost feasibility studies covering a broad range of options for improving energy efficiency in manufacturing and increasing use of renewable energy. The scenario-based modelling has directly influenced Michelin’s energy transition strategy: the Environment Governance body has approved the technology/cost roadmap to achieve the 2030 science-based target, including the level of capex required over the next 10 years.</td>
</tr>
<tr>
<td>Other, please specify (RCP 1.9)</td>
<td>Since 2019, the main climate scenario under study by Michelin for setting long-term CO2 reduction targets for Scope 1 &amp; 2 (covering &gt;95% of emissions through the GHG Protocol) is RCP1.9, a pathway that limits global warming to below 1.5°C and which corresponds to a goal of net zero emissions by 2050. Increasingly detailed technological and cost feasibility studies are in progress, covering a broad range of options for improving energy efficiency and increasing use of renewable energy. The modelling involves both a linear and non-linear perspective, the former allowing implementation of known technologies to be planned over time, and the latter for anticipating technological/shifts in socio-economic conditions, particularly in the area of renewable energy availability. The results of this scenario-based modelling inform the outlook for capex requirements for the 2030-2050 period.</td>
</tr>
<tr>
<td>IEA BD2050</td>
<td>Separately, to set a science-based CO2 reduction target for Scope 3 “Use of sold products”, Michelin is using the International Energy Agency (IEA) Mobility Model “below 2°C scenario” (BD2050). As a member of IEA’s Mobility Model partnership, Michelin has provided technical information to IEA on the link’s contribution to vehicle energy efficiency for the model to be refined. In parallel, Michelin is working with WVF, France, through an overall partnership, to finalize a modelling tool allowing Michelin to express improvements in tire energy performance efficiency in terms of metrics tons of CO2 based on the BD2050, 2DS &amp; 4DS scenarios found in the Mobility Model. There are no results because the tool has not yet been completed.</td>
</tr>
<tr>
<td>Other, please specify (Qualitative mobility scenarios)</td>
<td>In 2018 Michelin’s strategic department developed 3 qualitative scenarios that incorporate varying degrees of global temperature increases, economic and socio-political conditions and major societal trends projected to 2035. Each scenario has a narrative that includes both desirable and undesirable elements. The scenarios are supported by visual maps that summarize the key trends of physical impacts of climate change, acute and chronic, that are relevant to Michelin’s activities. The scenarios are used to help business and operational units’ strategic thinking around complex and paradox, to develop a shared understanding of the main terms and concepts in the scenarios, and to facilitate the integration of climate change and energy transition impacts into strategic plans. The scenarios were cited as a best practice in a 2019 study conducted by TheShift Project on behalf of all members of the French business association AFEP: <a href="https://theshiftproject.org/en/article/energy-climate-scenarios-evaluation-guidance-report/">https://theshiftproject.org/en/article/energy-climate-scenarios-evaluation-guidance-report/</a></td>
</tr>
</tbody>
</table>

(C3.1d) Describe where and how climate-related risks and opportunities have influenced your strategy.

<table>
<thead>
<tr>
<th>Have climate-related risks and opportunities influenced your strategy in this area?</th>
<th>Description of influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products and services</td>
<td>Yes</td>
</tr>
<tr>
<td>Supply chain and/or value chain</td>
<td>Yes</td>
</tr>
<tr>
<td>Investment in R&amp;D</td>
<td>Yes</td>
</tr>
<tr>
<td>Operations</td>
<td>Yes</td>
</tr>
</tbody>
</table>
C3.1e Describe where and how climate-related risks and opportunities have influenced your financial planning.

<table>
<thead>
<tr>
<th>Financial planning elements that have been influenced</th>
<th>Description of influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues: Direct costs</td>
<td>Revenues: Opportunities for low carbon products and services have influenced revenues in a positive direction, and Michelin is conducting its financial planning under the hypothesis that revenues will increase in the short-term. Case study: As the market leader in connected tires and a major partner in digital fleet management, Michelin offers its corporate customers services and solutions reduce their carbon footprints, in addition to other key benefits (enhancing safety performance, simplifying maintenance, increasing asset uptime, reducing operating costs). Michelin has set a goal that through its services and solutions business unit it will double revenue over the short-term from 2015 to 2020, both through the expansion of existing offerings and through new ones structured around fleet management solutions. Climate-related opportunities will lead to increasing needs for fleets for such services and thus increasing Michelin future revenues. Sales of tire-related services and solutions totaled €1,169 million in 2019, versus €1,112 million in 2017. As of 2019 more than one million vehicles are under contract. Direct &amp; indirect costs: Energy use for production is a direct cost, as it enters into the calculation of manufacturing costs and is not considered as an overhead cost, and it also generated indirect costs from CO2 regulations. Financial planning is influenced by several risks and opportunities: 1) Procurement of renewable energy is driven both by a risk – market uncertainty around cost and availability of energy – and by the opportunity to reach CO2 reduction targets under SBTI and corporate stewardship goals. Operating costs to cover future renewable energy procurement for just under 40 European manufacturing sites (current additional costs per site compared to non-renewable energy procurement vary between 0 and 10%). 2) CO2 allowance and carbon tax regulations as a financial risk are a factor driving progress in energy efficiency. The future purchase of CO2 allowances under the European ETS (actual costs of €5.884 in 2019 and increasing to an estimated €296 in 2030) for 19 production sites and potential additional costs expected in the medium-term under the China ETS system being developed will need to be anticipated in medium-term financial planning by business units and the manufacturing facilities they manage. Each year the 5-year strategic plan at business unit level is reviewed and readapted to include such expenses, which up until now have been low and are absorbed in routine direct costs. Forecasted increases in CO2 allowances are determined by the CO2 Allowances Work Group, a cross-functional committee tasked with optimizing compliance costs. The work group communicates its finding directly to the manufacturing sites that would be impacted so that future costs can be integrated into the 5-year strategic plan. Capital expenditures: To anticipate risks related to regulatory costs of CO2 emissions and the emergence of a global carbon market over the medium-term, Michelin established in 2016 an internal carbon price of €50 per metric ton of CO2 into its method of calculating return on investment for energy-related projects requiring major capital expenditure. For projects designed to increase the energy efficiency of existing installations (machinery, lighting, etc.), which require more modest outlays, the same carbon price is integrated into a project financial calculation tool. Each project leader is expected to submit two scenarios, one conventional and the other based on carbon costing €50 a tonne. Each project sponsor can compare the payback calculated with a carbon market price (now zero in every host region except Europe and Shanghai) and the payback calculated with the projected carbon price over the lifetime of the equipment being purchased today. Capital allocation: At the corporate level for manufacturing operations, an annual target is set for investments in energy efficiency projects, which varies between €15 and €25 million. Each year the 5-year strategic plan at business unit level is reviewed and readapted to include an investment budget corresponding to the energy efficiency projects that have been prioritized according to three criteria: 1) technical feasibility, 2) cost and return on investment, and 3) contribution to meeting Michelin’s 2030 CO2 reduction target for Scopes 1 &amp; 2 of -38% in absolute value (2010 baseline), approved by SBTI. Acquisitions and divestments: Recent acquisitions have considered both risks and opportunities driven by evolving market needs to reduce materials extraction - and the associated carbon footprint – and to reduce the carbon footprint of products and services particularly in the use phase, thus helping customers with CO2 mitigation. In the last 3 years they have focused on innovative materials and services: e.g., Lehigh Technologies offers high performance materials that are produced from end-of-life tires and that can be used in industrial and consumer applications; Sascar, NexTriap, PTO and Télémétex along with Masternaut in 2019 provide digital technologies that enable more efficient movement of goods and people; and establishing a joint venture in 2019 with Faurecia in 2019 to create Symbio, a leader in hydrogen-powered mobility. Because Michelin’s strategy is to develop new sustainable products and services to complement its historic offers of tires for all types of vehicles and maps and guides, the amount dedicated to acquisitions has increased 205-fold over the last two years. Access to capital: The risk of negative stakeholder feedback regarding corporate CSR stewardship in general and climate change strategy is always present and could potentially come from investors. Michelin regularly meets with current and potential investors and includes an overview of its sustainability strategy issues in its presentations. Over the last several years, the exchanges have remained general regarding Michelin’s CSR performance, including that related to climate change strategy, and involve Michelin providing further information in response to questions. Given Michelin’s strong performance as evaluated by extra-financial rating organizations, several of which use information reported to the CDP, access to financial capital remains open, if not more accessible, over the short-term. Assets: Michelin has 4 production sites that use steam produced from coal-fired boilers: 3 in Europe and 1 in North America. Michelin considers these boilers as potential economically stranded assets under a 2°C or below-2°C climate change scenario. As part of its 2030 ambition to reduce Scope 1 and 2 emissions by 38% in absolute value, the Group is pursuing its coal exit strategy for manufacturing over a 12-year period (2018 to 2030). It is estimated that the level of capital investment required would be from 0.3% to 0.9% of current levels of slightly under €2 billion/year.</td>
</tr>
</tbody>
</table>

C3.1f

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

C4. Targets and performance

C4.1

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

Both absolute and intensity targets

C4.1a

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

Target reference number
Abs 1

Year target was set
2016

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

Base year
2010

Covered emissions in base year (metric tons CO2e)

CDP
Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2020

Targeted reduction from base year (%)
15

Covered emissions in target year (metric tons CO2e) [auto-calculated]
3456950

Covered emissions in reporting year (metric tons CO2e)
2919165

% of target achieved [auto-calculated]
188.154249651668

Target status in reporting year
Achieved

Is this a science-based target?
No, but we are reporting another target that is science-based

Please explain (including target coverage)
The trend is line with a 2-degree trajectory. Yet, our Science Based Targets, submitted to SBTi, are towards 2030 and 2050, not 2020. 1/ Explanation regarding 2020 objective set in 2016: Michelin’s objective by 2020 is to lower CO2 emissions per metric ton of finished product by 32 percent compared with 2010. If production growth is 25 percent over the same period, then CO2 emissions will be reduced by 15 percent over the period. The actual % complete is 175%. The target is -15%, and the 2019 result is -28.2%, which is partly explained by the fact that we anticipated our renewable electricity purchases necessary to reach the 2020 target, and partly because production growth has been lower than expected. Now, the Group has new, more ambitious targets towards 2030 (see abs 2): 2/ On-going recalculation of base year emissions for SBT submission: As described in our 2015 registration document (p 178), the same emission factor was used until 2014 for all of the sites purchasing steam, regardless of the primary energy or technology used by the vendor. As of 2015, in order to more accurately depict foreseeable developments in energy sourcing, we decided to use three emissions factors, one for each primary energy used (coal, fuel oil and gas), including reasonable energy efficiency and loss assumptions. Now, in the framework of preparing our submission to Science Based Targets Initiative, we recalculated our 2010 (base year) emissions with the new emission factors (EF) applied to steam purchases: with the new EFs, our 2010 emissions would have been 3,850,000 tonnes instead of 4,067,000. For simplicity reasons in our internal communication and target setting, our short term, non-submitted to SBTi 2020 target set is still based on our historical 2010 emission value (4,067,000 tonnes) However, the recalculated 2010 base-year emissions (3,877,000 tonnes) was the base for our SBTi submission (2030 and 2050 targets).

Target reference number
Abs 2

Year target was set
2019

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

Base year
2010

Covered emissions in base year (metric tons CO2e)
3877273

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
96

Target year
2030

Targeted reduction from base year (%)
38

Covered emissions in target year (metric tons CO2e) [auto-calculated]
2403909.26

Covered emissions in reporting year (metric tons CO2e)
2919165

% of target achieved [auto-calculated]
65.028612690034

Target status in reporting year
Revised

Is this a science-based target?
Yes, this target has been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)
Yes, this target has been approved as science-based by the Science-Based Targets initiative

Note: Michelin has prepared science-based targets on scopes 1,2 and 3 and submitted them to SBTi in October 2019. The targets were validated in May 2020 (Michelin submitted for all 3 scopes since scope 3 emissions are greater than 40% of the total). On scopes 1 and 2, Michelin committed to reduce absolute scope 1 and 2 GHG emissions by 38% by 2030 from a 2010 base year. To date Michelin is on track to meet these scopes 1 and 2 ambition by 2030. Beyond this, Michelin has set a new long-term ambition to reach Zero Net Emissions on scopes 1 and 2 by 2050. New intermediary targets, in line with the new 2050 target, are being prepared to guide this process. Recalculation of base year emissions for SBT submission: As described in our 2015 registration document (p 178), the same emission factor was used until 2014 for all of the sites purchasing steam, regardless of the primary energy or technology used by the vendor. As of 2015, in order to more accurately depict foreseeable developments in energy sourcing, we decided to use three emissions factors, one for each primary energy used (coal, fuel oil and gas), including reasonable energy efficiency and loss assumptions. Now, in the framework of preparing our submission to Science Based Targets Initiative, we recalculated our 2010 (base year) emissions with the new emission factors (EF) applied to steam purchases: with the new EFs, our 2010 emissions would have been 3,850,000 tonnes instead of 4,067,000. For simplicity reasons in our internal communication and target setting, our short term, non-submitted to SBTi 2020 target set is still based on our historical 2010 emission value (4,067,000 tonnes) However, the recalculated 2010 base-year emissions (3,877,000 tonnes) was the base for our SBTi submission (2030 and 2050 targets).
developments in energy sourcing, we decided to use three emissions factors, one for each primary energy used (coal, fuel oil and gas), including reasonable energy efficiency and loss assumptions. Now, in the framework of preparing our submission to Science Based Targets Initiative, we recalculated our 2010 (base year) emissions with the new emission factors (EF) applied to steam purchases: with the new EFs, our 2010 emissions would have been 3,850,000 tonnes instead of 4,067,000. For simplicity reasons in our internal communication and target setting, our short term, non-submitted to SBTi 2020 target set is still based on our historical 2010 emission value (4,067,000 tonnes) However, the recalculated 2010 base-year emissions (3,850,000 tonnes) was the base for our SBTi submission (2030 and 2050 targets). We also incorporated the emissions of two, newly acquired sites.

<table>
<thead>
<tr>
<th>Target reference number</th>
<th>Abs 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year target was set</td>
<td>2015</td>
</tr>
<tr>
<td>Target coverage</td>
<td>Company-wide</td>
</tr>
<tr>
<td>Scope(s) (or Scope 3 category)</td>
<td>Scope 1+2 (market-based)</td>
</tr>
<tr>
<td>Base year</td>
<td>2010</td>
</tr>
<tr>
<td>Covered emissions in base year (metric tons CO2e)</td>
<td>3877273</td>
</tr>
<tr>
<td>Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)</td>
<td>96</td>
</tr>
<tr>
<td>Targeted reduction from base year (%)</td>
<td>100</td>
</tr>
<tr>
<td>Covered emissions in target year (metric tons CO2e) [auto-calculated]</td>
<td>0</td>
</tr>
<tr>
<td>Covered emissions in reporting year (metric tons CO2e)</td>
<td>2919165</td>
</tr>
<tr>
<td>% of target achieved [auto-calculated]</td>
<td>24.7108728222129</td>
</tr>
<tr>
<td>Target status in reporting year</td>
<td>Revised</td>
</tr>
<tr>
<td>Is this a science-based target?</td>
<td>Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative</td>
</tr>
<tr>
<td>Please explain (including target coverage)</td>
<td>In 2015, during COP 21, Michelin committed to reduce its Scope 1 &amp; 2 emissions by 50 % between 2010 and 2050, in line with a 2°C scenario. Since then, the Group made the decision to accelerate its action against climate change, and set a new target of reaching Net Zero emissions by 2050 (scope 1 &amp; 2). This target has not yet been submitted to the Science-Based Targets initiative, but it is in line with emissions pathways consistent with 1.5 °C Global warming in IPCC Special Report “Global warming of 1.5°C”. Updated intermediary targets are being prepared to guide this process. Recalculation of base year emissions for SBT submission: As described in our 2015 registration document (p 178), the same emission factor was used until 2014 for all of the sites purchasing steam, regardless of the primary energy or technology used by the vendor. As of 2015, in order to more accurately depict foreseeable developments in energy sourcing, we decided to use three emissions factors, one for each primary energy used (coal, fuel oil and gas), including reasonable energy efficiency and loss assumptions. Now, in the framework of preparing our submission to Science Based Targets Initiative, we recalculated our 2010 (base year) emissions with the new emission factors (EF) applied to steam purchases: with the new EFs, our 2010 emissions would have been 3,850,000 tonnes instead of 4,067,000. For simplicity reasons in our internal communication and target setting, our short term, non-submitted to SBTi 2020 target set is still based on our historical 2010 emission value (4,067,000 tonnes) However, the recalculated 2010 base-year emissions (3,850,000 tonnes) was the base for our SBTi submission (2030 and 2050 targets). We also incorporated the emissions of two, newly acquired sites.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target reference number</th>
<th>Abs 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year target was set</td>
<td>2019</td>
</tr>
<tr>
<td>Target coverage</td>
<td>Company-wide</td>
</tr>
<tr>
<td>Scope(s) (or Scope 3 category)</td>
<td>Other, please specify (This target covers the following Scope 3 categories: Fuel and energy-related activities, Upstream transportation and distribution, Downstream transportation and distribution, End-of-life treatment of sold products.)</td>
</tr>
<tr>
<td>Base year</td>
<td>2018</td>
</tr>
<tr>
<td>Covered emissions in base year (metric tons CO2e)</td>
<td>5166278</td>
</tr>
<tr>
<td>Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)</td>
<td>90</td>
</tr>
<tr>
<td>Target year</td>
<td>2030</td>
</tr>
<tr>
<td>Targeted reduction from base year (%)</td>
<td>24.7108728222129</td>
</tr>
</tbody>
</table>
Covered emissions in target year (metric tons CO2e) [auto-calculated]
4391336.3

Covered emissions in reporting year (metric tons CO2e)
0

% of target achieved [auto-calculated]
666.666666666667

Target status in reporting year
New

Is this a science-based target?
Yes, this target has been approved as science-based by the Science-Based Targets initiative

Please explain (including target coverage)
This target covers the following Scope 3 categories, as approved by SBTi in May 2020: fuel and energy-related activities, upstream transportation and distribution, downstream transportation and distribution, end-of-life treatment of sold products. Covered emissions in reporting year (metric tons CO2e) = 0 as the first reporting year will be 2020.

<table>
<thead>
<tr>
<th>Year target was set</th>
<th>Target coverage</th>
<th>Scope(s) (or Scope 3 category)</th>
<th>Intensity metric</th>
<th>Base year</th>
<th>Intensity figure in base year (metric tons CO2e per unit of activity)</th>
<th>% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure</th>
<th>Target year</th>
<th>Targeted reduction from base year (%)</th>
<th>Intensity figure in target year (metric tons CO2e per unit of activity)</th>
<th>% change anticipated in absolute Scope 1+2 emissions</th>
<th>% change anticipated in absolute Scope 3 emissions</th>
<th>Intensity figure in reporting year (metric tons CO2e per unit of activity)</th>
<th>% of target achieved [auto-calculated]</th>
<th>Target status in reporting year</th>
<th>Is this a science-based target?</th>
<th>Please explain (including target coverage)</th>
</tr>
</thead>
</table>
| 2018                | Company-wide    | Scope 1+2 (market-based)      | Metric tons CO2e per metric ton of product | 2018      | 0.875                                          | 100                                                                            | 2019       | 5.2                                 | 0.895                           | -5.4                            | 0                               | 0.863                          | 26.3736265736254 | Expired                      | No, but we are reporting another target that is science-based | 2019 target published in the 2018 Registration Document (annual report). This target is a year-on-year target. The target set was a a decrease from 0.88 to 0.83 tonnes of CO2 per tonne of finished product, representing a decrease by 5.2% percent in the emission ratio from previous year level. We achieved a ratio of 0.86 tonnes of CO2 per tonne of finished product, i.e. a reduction of only 1.3 percent. But the growth in volume was also less than forecast, and the decrease in absolute values was -2.8 %.

Target reference number
Int 2

Year target was set
2016
Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

Intensity metric
Metric tons CO2e per metric ton of product

Base year
2010

Intensity figure in base year (metric tons CO2e per unit of activity)
1.28

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure
100

Target year
2020

Targeted reduction from base year (%)
32

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]
0.8704

% change anticipated in absolute Scope 1+2 emissions
-15

% change anticipated in absolute Scope 3 emissions
0

Intensity figure in reporting year (metric tons CO2e per unit of activity)
0.863

% of target achieved [auto-calculated]
101.806640625

Target status in reporting year
Underway

Is this a science-based target?
No, but we are reporting another target that is science-based

Please explain [including target coverage]
This target is not published. It is an internal target consistent with the Michelin Environmental Footprint target of -50% between 2010 and 2020, published in the 2015 Registration Document (annual report). The 102% completion stated here relates to Michelin's reported reduction in CO2 emissions intensity from 1.28 to 0.86 metric tons per metric ton of tire produced between 2010 and 2019, compared with the target of 0.87 metric tons per metric ton of tire produced (32% reduction) by 2020. Michelin's objective was to lower the CO2 emissions per metric ton of finished product by 32 percent in 2020 compared with 2010. With an expected growth in tire production of 25 percent over the same period, then CO2 emissions would have been reduced by 15 percent over the period. Since the growth will not be at the expected level, the reduction in absolute values will be higher than expected, but it cannot be estimated now because of the 2020 uncertainty in the performance ratio and production level due to Covid19 crisis. The decrease in absolute value is already over 25 percent.

Target reference number
Int 3

Year target was set
2013

Target coverage
Product level

Scope(s) (or Scope 3 category)
Scope 3: Use of sold products

Intensity metric
Grams CO2e per kilometer

Base year
2010

Intensity figure in base year (metric tons CO2e per unit of activity)
50

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure
86

Target year
2020

Targeted reduction from base year (%)
8

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]
46

% change anticipated in absolute Scope 1+2 emissions
0

% change anticipated in absolute Scope 3 emissions
Intensity figure in reporting year (metric tons CO2e per unit of activity)
45.74

% of target achieved [auto-calculated]
106.5

Target status in reporting year
Achieved

Is this a science-based target?
No, but we are reporting another target that is science-based

Please explain (including target coverage)
The key to reducing vehicular CO2 emissions is to improve the energy efficiency of tires. 1 out of 5 fuel tanks for a passenger car and 1 out of 3 for a truck are required to overcome the phenomenon referred to as “rolling resistance”. This target covers Michelin’s product plan for passenger/light vehicle and truck tires. In 2010, vehicles equipped with Michelin tires generate on average 50g CO2/km, to compensate for rolling resistance of their tires. Michelin is committed to reducing rolling resistance of its tires by 8.5% on average by 2020 compared to 2010. So, in 2020, vehicles equipped with Michelin tires will generate 8 Mt of CO2 less than compared to 2010, which corresponds to a reduction of 8% of the gCO2 emitted per km on average. Note about SBT: while there is a method for the transport sector has a whole, it cannot be applied to auto parts suppliers without taking into account the different actors in the auto sector. A work group was run by WWF from 2017 to 2018 to develop more refined decarbonization pathways for the road transport sector. Michelin was a participating member of this work group and continues to work with WWF and the International Energy Agency to finalize an appropriate tool for auto equipment manufacturers like Michelin to set SBT targets. In 2019, Michelin has exceeded its target in rolling resistance reduction: that is to say a reduction of around 7.3 MtCO2, compared to 2010.

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
Target(s) to increase low-carbon energy consumption or production
Other climate-related target(s)

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

<table>
<thead>
<tr>
<th><strong>Target reference number</strong></th>
<th>Low 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year target was set</strong></td>
<td>2016</td>
</tr>
<tr>
<td><strong>Target coverage</strong></td>
<td>Company-wide</td>
</tr>
<tr>
<td><strong>Target type: absolute or intensity</strong></td>
<td>Absolute</td>
</tr>
<tr>
<td><strong>Target type: energy carrier</strong></td>
<td>Electricity</td>
</tr>
<tr>
<td><strong>Target type: activity</strong></td>
<td>Consumption</td>
</tr>
<tr>
<td><strong>Target type: energy source</strong></td>
<td>Renewable energy source(s) only</td>
</tr>
<tr>
<td><strong>Metric (target numerator if reporting an intensity target)</strong></td>
<td>Percentage</td>
</tr>
<tr>
<td><strong>Target denominator (intensity targets only)</strong></td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td><strong>Base year</strong></td>
<td>2010</td>
</tr>
<tr>
<td><strong>Figure or percentage in base year</strong></td>
<td>0.2</td>
</tr>
<tr>
<td><strong>Target year</strong></td>
<td>2020</td>
</tr>
<tr>
<td><strong>Figure or percentage in target year</strong></td>
<td>34</td>
</tr>
<tr>
<td><strong>Figure or percentage in reporting year</strong></td>
<td>31</td>
</tr>
<tr>
<td><strong>% of target achieved [auto-calculated]</strong></td>
<td>91.1242603550296</td>
</tr>
<tr>
<td><strong>Target status in reporting year</strong></td>
<td>Underway</td>
</tr>
<tr>
<td><strong>Is this target part of an emissions target?</strong></td>
<td>Yes, “Int 2”</td>
</tr>
<tr>
<td><strong>Is this target part of an overarching initiative?</strong></td>
<td>No, it's not part of an overarching initiative</td>
</tr>
<tr>
<td><strong>Please explain (including target coverage)</strong></td>
<td>This target has not been set as a target in itself, but as a means to reach the 2020 CO2 target of -32 % per ton of finished product by 2020 (vs 2010). In 2019, our intensity target 2 (Int 2) was already reached. The target is not part of RE100, but the criteria of our purchasing agreements to buy Guaranties of Origin and, increasingly, electricity from renewable sources with bundled EAC where they exist, are in line with RE 100 criteria. The target is part of our 2030 SBTi target (Abs2) and of our 2050 target to reach zero net CO2 emission vs 2010 (Abs 3).</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th><strong>Target reference number</strong></th>
<th>Oth 1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year target was set</strong></td>
<td>2010</td>
</tr>
<tr>
<td><strong>Target coverage</strong></td>
<td>Company-wide</td>
</tr>
<tr>
<td><strong>Target type: absolute or intensity</strong></td>
<td>Intensity</td>
</tr>
<tr>
<td><strong>Target type: category &amp; Metric (target numerator if reporting an intensity target)</strong></td>
<td>Energy consumption or efficiency</td>
</tr>
<tr>
<td><strong>Target denominator (intensity targets only)</strong></td>
<td>metric ton of product</td>
</tr>
<tr>
<td><strong>Base year</strong></td>
<td></td>
</tr>
</tbody>
</table>
In 2019, the Group’s energy consumption stood at 11.92 GJ per tonne of finished product, down by 1.1% year-on-year and by 17.2% since 2010. After a difficult 2018, which saw only a 0.4% improvement, the 2019 performance was better but still fell short of expectations. Late 2019, before the Covid crisis, the year-end 2020 target was revised and set at a 22% decline from 2010, compared to the initial target of 25%. A new 2030 energy efficiency target is going to be set by the end of 2020.

Target reference number
Oth 2

Year target was set
2013

Target coverage
Company-wide

Target type: absolute or intensity
Intensity

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

<table>
<thead>
<tr>
<th>Engagement with suppliers</th>
<th>Other, please specify (Percentage of suppliers obtaining &quot;confirmed&quot; status through EcoVadis (&gt;45 score))</th>
</tr>
</thead>
</table>

Target denominator (intensity targets only)
Other, please specify (Total scored suppliers through EcoVadis)

Base year
2012

Figure or percentage in base year
0

Target year
2020

Figure or percentage in target year
70

Figure or percentage in reporting year
84

% of target achieved [auto-calculated]
120

Target status in reporting year
Achieved

Is this target part of an emissions target?
Not part of emissions target

Is this target part of an overarching initiative?
No, it's not part of an overarching initiative

Please explain (including target coverage)
Since 2012, Michelin has evaluated the CSR performance of its key suppliers through EcoVadis. The Group assures a regular follow up of suppliers with which it works with through evaluations of their performance including CSR performance. The Group's 2020 ambition in terms of sustainable development is to evaluate its main suppliers and accompany them so that at least 70% of them achieve the confirmed status of the Group's standards.
Year target was set
2016

Target coverage
Site/facility

Target type: absolute or intensity
Absolute

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

<table>
<thead>
<tr>
<th>Metric</th>
<th>hectares reforested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land use change</td>
<td></td>
</tr>
</tbody>
</table>

Target denominator (intensity targets only)
<Not Applicable>

Base year
2016

Figure or percentage in base year
0

Target year
2023

Figure or percentage in target year
34000

Figure or percentage in reporting year
18500

% of target achieved [auto-calculated]
54.4117647058824

Target status in reporting year
Underway

Is this target part of an emissions target?
Not part of emissions target

Is this target part of an overarching initiative?
Remove deforestation

Please explain (including target coverage)
This target corresponds to the reforestation of a part of 3 concessions totaling 88,000 ha in the provinces of Jambi (Sumatra) and North East Kalimantan (Borneo) which have been devastated by uncontrolled deforestation. 34 000 will be planted with rubber trees.

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.

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
<th>Number of initiatives</th>
<th>Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under investigation</td>
<td>22</td>
<td>47700</td>
</tr>
<tr>
<td>To be implemented*</td>
<td>7</td>
<td>25000</td>
</tr>
<tr>
<td>Implementation commenced*</td>
<td>4</td>
<td>1900</td>
</tr>
<tr>
<td>Implemented*</td>
<td>250</td>
<td>33849</td>
</tr>
<tr>
<td>Not to be implemented</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

C4.3b

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

Initiative category & Initiative type

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
<th>Estimated annual CO2e savings (metric tonnes CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy efficiency in buildings</td>
<td>6749</td>
</tr>
<tr>
<td>Heating, Ventilation and Air Conditioning (HVAC)</td>
<td></td>
</tr>
<tr>
<td>Initiative category &amp; Initiative type</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--</td>
</tr>
<tr>
<td>Energy efficiency in buildings</td>
<td>Lighting</td>
</tr>
</tbody>
</table>

**Estimated annual CO2e savings (metric tonnes CO2e)**
4134

<table>
<thead>
<tr>
<th>Scope(s)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 2 (market-based)</td>
<td></td>
</tr>
</tbody>
</table>

**Voluntary/Mandatory**
Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**
656000

**Investment required (unit currency – as specified in C0.4)**
2025000

**Payback period**
1-3 years

**Estimated lifetime of the initiative**
11-15 years

**Comment**

---

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy efficiency in production processes</td>
<td>Waste heat recovery</td>
</tr>
</tbody>
</table>

**Estimated annual CO2e savings (metric tonnes CO2e)**
5026

<table>
<thead>
<tr>
<th>Scope(s)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 1</td>
<td></td>
</tr>
</tbody>
</table>

**Voluntary/Mandatory**
Voluntary

**Annual monetary savings (unit currency – as specified in C0.4)**
965000

**Investment required (unit currency – as specified in C0.4)**
5303000

**Payback period**
4-10 years

**Estimated lifetime of the initiative**
11-15 years

**Comment**

---

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy efficiency in production processes</td>
<td>Cooling technology</td>
</tr>
</tbody>
</table>

**Estimated annual CO2e savings (metric tonnes CO2e)**
1033

<table>
<thead>
<tr>
<th>Scope(s)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope 2 (market-based)</td>
<td></td>
</tr>
<tr>
<td>Initiative category &amp; Initiative type</td>
<td>Compressed air</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Estimated annual CO₂e savings</td>
<td>1661</td>
</tr>
<tr>
<td>(metric tonnes CO₂e)</td>
<td></td>
</tr>
<tr>
<td>Scope(s)</td>
<td>Scope 2 (market-based)</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings</td>
<td>241000</td>
</tr>
<tr>
<td>(unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Investment required</td>
<td>1325000</td>
</tr>
<tr>
<td>(unit currency – as specified in C0.4)</td>
<td></td>
</tr>
<tr>
<td>Payback period</td>
<td>4-10 years</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>6-10 years</td>
</tr>
<tr>
<td>Comment</td>
<td></td>
</tr>
<tr>
<td>Initiative category &amp; Initiative type</td>
<td>Energy efficiency in production processes</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>996</td>
</tr>
<tr>
<td>Scope(s)</td>
<td>Scope 1 Scope 2 (market-based)</td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td>97000</td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td>299000</td>
</tr>
<tr>
<td>Payback period</td>
<td>1-3 years</td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>11-15 years</td>
</tr>
<tr>
<td>Comment</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
<th>Energy efficiency in production processes</th>
<th>Motors and drives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>751</td>
<td></td>
</tr>
<tr>
<td>Scope(s)</td>
<td>Scope 2 (market-based)</td>
<td></td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
<td></td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td>175000</td>
<td></td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td>963000</td>
<td></td>
</tr>
<tr>
<td>Payback period</td>
<td>4-10 years</td>
<td></td>
</tr>
<tr>
<td>Estimated lifetime of the initiative</td>
<td>11-15 years</td>
<td></td>
</tr>
<tr>
<td>Comment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
<th>Other, please specify</th>
<th>Other, please specify (Utilities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated annual CO2e savings (metric tonnes CO2e)</td>
<td>3389</td>
<td></td>
</tr>
<tr>
<td>Scope(s)</td>
<td>Scope 1</td>
<td></td>
</tr>
<tr>
<td>Voluntary/Mandatory</td>
<td>Voluntary</td>
<td></td>
</tr>
<tr>
<td>Annual monetary savings (unit currency – as specified in C0.4)</td>
<td>301000</td>
<td></td>
</tr>
<tr>
<td>Investment required (unit currency – as specified in C0.4)</td>
<td>28x17 CDP</td>
<td></td>
</tr>
</tbody>
</table>

Page 31 of 88
Payback period
1-3 years

Estimated lifetime of the initiative
>30 years

Comment

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company policy or behavioral change</td>
</tr>
</tbody>
</table>

Estimated annual CO2e savings (metric tonnes CO2e)
1626

Scope(s)
Scope 1
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
158000

Investment required (unit currency – as specified in C0.4)
488000

Payback period
1-3 years

Estimated lifetime of the initiative
Ongoing

Comment

<table>
<thead>
<tr>
<th>Initiative category &amp; Initiative type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-carbon energy consumption</td>
</tr>
</tbody>
</table>

Estimated annual CO2e savings (metric tonnes CO2e)
600

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
8000

Investment required (unit currency – as specified in C0.4)
0

Payback period
No payback

Estimated lifetime of the initiative
Ongoing

Comment

Third party investment

C4.3c

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

<table>
<thead>
<tr>
<th>Method</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedicated budget for energy efficiency</td>
<td>In 2019, the energy efficiency improvement program was supported by €17.81 million in capital expenditure. It is still being deployed in 2020.</td>
</tr>
<tr>
<td>Internal price on carbon</td>
<td>In 2015, the Group made the decision to introduce an internal CO2 price in its return on investment (ROI) analysis tools as a decision-making element. As of 2016, the price has been set at €50 per tonne of CO2.</td>
</tr>
<tr>
<td>Other (Engagement with energy project managers)</td>
<td>Method: Engagement with energy project managers. On each energy-saving project, the impact of CO2 reductions on the Michelin Environmental Footprint (MEF) is highlighted.</td>
</tr>
<tr>
<td>Other (Energy portfolio oversight)</td>
<td>Method: Energy portfolio oversight. The corporate Energy and CO2 Expert Team, covering all industrial operations in its scope, oversees all projects involving energy transformation or major energy efficiency gains.</td>
</tr>
</tbody>
</table>
(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) 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.

<table>
<thead>
<tr>
<th>Level of aggregation</th>
<th>Group of products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description of product/Group of products</td>
<td></td>
</tr>
<tr>
<td>Low rolling resistance truck, passenger car and light truck tires.</td>
<td></td>
</tr>
<tr>
<td>Are these low-carbon product(s) or do they enable avoided emissions?</td>
<td></td>
</tr>
<tr>
<td>Avoided emissions</td>
<td></td>
</tr>
<tr>
<td>Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions</td>
<td></td>
</tr>
<tr>
<td>Other, please specify (EU Tyre Labelling Regulation (EC/1222/2009))</td>
<td></td>
</tr>
<tr>
<td>% revenue from low carbon product(s) in the reporting year</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td></td>
</tr>
<tr>
<td>% of total portfolio value</td>
<td></td>
</tr>
<tr>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Asset classes/ product types</td>
<td></td>
</tr>
<tr>
<td>&lt;Not Applicable&gt;</td>
<td></td>
</tr>
<tr>
<td>Comment</td>
<td></td>
</tr>
<tr>
<td>Tires, mainly because of their rolling resistance, account for 20 % to 30 % of the fuel consumption of vehicles. A low rolling resistance of tires may therefore contribute significantly to the energy efficiency of road transport and thus to the reduction of CO2 emissions. Michelin considers as “Low-carbon products” the on-road tires from all Group’s brands that have been categorized under rolling resistance classes A, B or C according to the European labelling legislation, as they contribute to the carbon emissions reduction of the vehicles. The % revenue represents the ratio between the value of 2019 worldwide sales of truck, passenger car and light truck tires segments, categorized as A, B, or C in rolling resistance according to the EU tire labelling regulation over the total value of 2019 sales of “Automotive and related distribution” and “Road transportation and related distribution” segments.</td>
<td></td>
</tr>
</tbody>
</table>
(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start  
January 1 2010

Base year end  
December 31 2010

Base year emissions (metric tons CO2e)  
1832384

Comment

Scope 2 (location-based)

Base year start  
January 1 2010

Base year end  
December 31 2010

Base year emissions (metric tons CO2e)  
2237051

Comment

Scope 2 (market-based)

Base year start  
January 1 2010

Base year end  
December 31 2010

Base year emissions (metric tons CO2e)  
2234380

Comment

Recalculation of base year emissions carried out for SBT submission: As described in our 2015 registration document (p 178), the same emission factor was used until 2014 for all of the sites purchasing steam, regardless of the primary energy or technology used by the vendor. As of 2015, in order to more accurately depict foreseeable developments in energy sourcing, we decided to use three emissions factors, one for each primary energy used (coal, fuel oil and gas), including reasonable energy efficiency and loss assumptions. Now, preparing our submission to Science Based Targets Initiative and, in this framework, we recalculated our 2010 (base year) emissions with the new emission factors (EF) applied to steam purchases: with the new EFs, our 2010 emissions would have been 3 850 000 tonnes instead of 4 067 000. For simplicity reasons in our internal communication and target setting, our 2020 target set is still based on our historical 2010 emission value (4 067 000 tonnes). However, the recalculated 2010 base-year emissions (3 850 000 tonnes) is the base for our SBTi submission (2030 targets) on the 2010 industrial footprint perimeter. The recalculated 3 850 000 tonnes consists of 1,833,070 tonnes in scope 1 (unchanged) and 2 015 503 tonnes in market-based scope 2.

C5.2

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


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)  
1429707

Start date  
<Not Applicable>

End date  
<Not Applicable>

Comment

C6.2
(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

**Row 1**

**Scope 2, location-based**
We are reporting a Scope 2, location-based figure

**Scope 2, market-based**
We are reporting a Scope 2, market-based figure

**Comment**
Until 2015, we reported that our scope 2 emission figure was location-based, which we now understand was mistaken: in 2016, we thoroughly studied the Guide "Accounting of scope 2 emissions, Technical notes for reporting to CDP Climate Change and Supply Chain in 2016" and consulted with a CDP recommended service provider. As a result, we now understand that our scope emissions have always been calculated in line with the market-based approach.

---

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

**Reporting year**

**Scope 2, location-based**
1820871

**Scope 2, market-based (if applicable)**
1489458

**Start date**
<Not Applicable>

**End date**
<Not Applicable>

**Comment**

---

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

Yes

---

(C6.4a)

---
(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

**Source**
Tire distribution centers, retail and wholesale

**Relevance of Scope 1 emissions from this source**
Emissions are not relevant

**Relevance of location-based Scope 2 emissions from this source**
Emissions are not relevant

**Relevance of market-based Scope 2 emissions from this source (if applicable)**
Emissions are not relevant

**Explain why this source is excluded**
Operations excluded: Retail distribution (3%) are excluded because they are not material against our primary operations. In the framework of our proposed science-based targets, validated by the SBTi in April 2020, we updated our estimate of all potential exclusions: together they represent 4.25%, or less than 5% which is the maximum allowed according to the Greenhouse Gas Protocol.

**Source**
HFC gases

**Relevance of Scope 1 emissions from this source**
Emissions are not relevant

**Relevance of location-based Scope 2 emissions from this source**
Emissions are not relevant

**Relevance of market-based Scope 2 emissions from this source (if applicable)**
Emissions are not relevant

**Explain why this source is excluded**
HFC are excluded because the quantities emitted are not material compared with primary operations. In the framework of our proposed science-based targets, validated by the SBTi in April 2020, we updated our estimate of all potential exclusions: together they represent 4.25%, or less than 5% which is the maximum allowed according to the Greenhouse Gas Protocol.

**Source**
Michelin-controlled warehouses

**Relevance of Scope 1 emissions from this source**
Emissions are not relevant

**Relevance of location-based Scope 2 emissions from this source**
Emissions are not relevant

**Relevance of market-based Scope 2 emissions from this source (if applicable)**
Emissions are not relevant

**Explain why this source is excluded**
Facilities excluded: Wholesale distribution Michelin-owned warehouses are excluded because they are not material against our primary operations and industrial sites (0.61%). In the framework of our proposed science-based targets, validated by the SBTi in April 2020, we updated our estimate of all potential exclusions: together they represent 4.25%, or less than 5% which is the maximum allowed according to the Greenhouse Gas Protocol.

**Source**
Michelin Air Service (France-based corporate airlines)

**Relevance of Scope 1 emissions from this source**
Emissions are not relevant

**Relevance of location-based Scope 2 emissions from this source**
Emissions are not relevant

**Relevance of market-based Scope 2 emissions from this source (if applicable)**
Emissions are not relevant

**Explain why this source is excluded**
Operations: Michelin Air Service (0.22%) are excluded because they are not material against our primary operations. In the framework of our proposed science-based targets, validated by the SBTi in April 2020, we updated our estimate of all potential exclusions: together they represent 4.25%, or less than 5% which is the maximum allowed according to the Greenhouse Gas Protocol.

---

(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
8462776

Emissions calculation methodology
i. Data used: Two types of data have been used for the calculation of category 1: - Raw materials, packaging and finished good purchases. An extraction of the the total global raw materials, packaging and finished goods purchases, broken down into 69 purchasing families, valid for 2019. They represent a total of 1,432 lines of information. For each line, the weight in tons is provided. - Services and other purchases. An extraction of the total purchases of other goods and services, broken down into 255 purchasing families, valid for 2019. Purchases are expressed in monetary terms (in €). For each category, a GHG emission factor (secondary data) from a representative product/service is selected. Emission factors (EFs) have been obtained from 2 sources: 1) ecoinvent and drawing on the environmentally-extended Input-Output Model Open IO v.1.4; 2) Michelin’s life cycle assessment expertise team, following studies to develop more specific EFs rather than rely on more generic EFs in publicly available databases. ii. Methodology: - Raw materials, packaging and finished goods purchases. The mass purchased is multiplied by the selected EF to obtain a screening assessment of the GHG emissions associated with each family. The database used is ecoinvent v.3. Global Warming Potential used comes from IPCC 2013 GWP 100-year values. This allows for the identification of purchasing categories likely to be the main contributors to the impact. Some EFs are based on specific EFs for Michelin raw materials. For example, EF for carbon black was calculated based on Michelin’s supplier data. Some significant changes to EF were made to 2019 data compared to 2016 data, the most significant one being for the category “natural rubber”. The EF no longer includes upstream deforestation, according to the GHG protocol guidance: “Land use changes must be addressed in the context of 1) product life cycle accounting, 2) agricultural activities when these are directly controlled by the company, or 3) GHG mitigation projects”, none of which correspond to Michelin’s corporate GHG inventory. For other refinements to EFs, please refer to the third party assurance letter. iii. Quality: The quality of the primary data used is considered high. However, due to the simplification involved in the modelling, especially for the services, the quality of the emissions data is considered as medium. In particular, several flows cannot be properly characterized with existing economic sector of the database, requiring proxies for the assessment.*

Percentage of emissions calculated using data obtained from suppliers or value chain partners
21

Please explain

Capital goods

Evaluation status
Relevant, calculated

Metric tonnes CO2e
317316

Emissions calculation methodology
i. Data used: The primary data used cover the purchases from fixed assets and supplies for 2019 in monetary terms, broken down into 255 categories, and various services. For most of the capital goods, a GHG emission factor was selected from the input-output database referenced below. Some categories in the data supplies were excluded because they are redundant with other Scope 3 categories. ii. Methodology: Each sub-category or flow within the categories is associated with an economic sector from the environmentally-extended Input-Output Model Open IO v.1.4. The model, originally developed in 2002, was adjusted for inflation, evolution of the purchasing power parity and of energy efficiency of the global economy for 2019. The amount spent in each sub-category is then multiplied by the sector unit GHG emission factor, except for the negative amounts which, were considered as zero, and for some sub-categories already accounted in other categories. iii. Quality: The quality of the primary data used is high. However, due to the simplification involved in the modelling, especially for the services, the quality of the emissions data is considered as medium. In particular, several flows cannot be properly characterized with existing economic sector of the database, requiring proxies for the assessment.*

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

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

Evaluation status
Relevant, calculated

Metric tonnes CO2e
787084

Emissions calculation methodology
i. Data used: The primary data used are the types and quantities of fuels, electricity and heat purchased worldwide in 2019, under scopes 1 & 2. Aggregated values for all countries were gathered. ii. Methodology: The emissions were calculated by multiplying fuel quantities, electricity and heat purchased by upstream and energy loss EF. Transport and Distribution GHG emission factors for the different countries. Emission factors from the International Energy Agency (IEA) have been used in order to be consistent with the Scope 2 calculation. Previously, the 2016 calculation used DEFRA emission factors for electricity. This year, Scope 3 electricity EFs were calculated as the difference between Scope 2 EFs (from IEA) and the combined Scope 2&3 EFs (from ecoinvent, including all scope 1, 2 and 3 emissions with all WT, infrastructure and direct emissions). Renewable energy emissions are based on the different production technologies of renewable sources, obtained from the French energy agency ADEME Base carbonate. Upstream fuel emission factors are sourced from ADEME Base Carbonate. Only the net energy consumption is considered: electricity and fuel consumed minus the sold energy. Michelin produced energy (electricity and steam) from cogeneration. iii. Quality: The quality of the primary data used is medium and the quality of the emissions factors is high. The quality of the emissions data is considered as medium.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
1203194

Emissions calculation methodology
i. Data used: Two sources of information have been used: - Raw material transport The primary data used is the quantity of purchased goods provided for category 1 (purchased goods and services), representing a total of 2,424 lines of information, with origin and destination countries and transport mode. Michelin plant locations have been taken into account to establish a distance table for each continent, with the estimated distances corresponding to each type of transport taken from www.searates.com and www.maps.google.com. Intermediate warehousing has not been taken into account due to lack of supplier data. - Semi finished products transport Michelin provided carbon footprint emissions of semi-finished products transport and distribution. Emissions are calculated using EcoTransIT. This data includes all stages of transport of semi-finished products. Warehouse-related emissions are accounted for under Scopes 1 & 2 or under Scope 3 Category 1 (Purchased goods and services). ii. Methodology: - Raw material transport Transport distances have been rounded to represent generic geographical areas (i.e., by continent). For internal transport within a country, generic yet realistic distances have been chosen. After analyzing the data, 13% of the lines were deemed “probably inconsistent data” involving intermodal transport for which Quantis established a hypothesis of 40% road, 40% water and 20% rail. This approach is more conservative than using an EF for sea transport, resulting in an overestimation of the CO2 impact. The CO2 impacts were determined by multiplying the amount of transported goods by the estimated distance, and the EF corresponding to the transport mode. The EFs associated with each mode of transportation (secondary data) are taken from the ecoinvent v.3 database, and GWP from IPCC 2013 GWP 100-year. A distinction is made between full and partial load vehicles. - Semi finished products transport Carbon emissions are calculated using EcoTransIT tool. Quantis has verified the accuracy of the data (EFs and calculations with the supply chain department). iii. Quality: The quality of the primary data used is medium, due to inconsistencies. The quality of the secondary data is high. Some extrapolations, e.g., rounding transport distances to continent, produced data of medium quality. Overall, the quality of the results is considered medium.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Waste generated in operations

Evaluation status
Relevant, calculated

Metric tonnes CO2e
342949

Emissions calculation methodology
i. Data used: The primary data used for this category are the amount of waste generated at production sites. The data used is from 2017 as 2019 data is not yet available. The total amount of waste was given along with hypothesis on the end-of-life (EoL) destination per type of waste. More disaggregated data has been provided for this year calculation. ii. Methodology: Quantis has processed data provided by Michelin to distinguish each waste type and EoL scenario. Each waste flow considered has a specific EoL recovery associated with an EF to assess the GHG emissions of the treatment (ecoinvent v.3). For tire waste, EFs based on the Aliapur 2009 LCA study were used. Aliapur EFs have been modified by Quantis for greater accuracy. They distinguish between the emissions of the main components of tires (natural rubber, synthetic rubber, steel and textiles). For the other types of waste, EFs for the recovery processes were updated. For some of the waste recycled, considering the limited information available in LCA databases, proxies were used to estimate the impacts. Transportation to EoL, treatment centers was excluded from the modelling except for datasets based on the Aliapur study. Facilities are amortized over several years, so the impacts are marginal at the scale of 1 tonne of waste. Transport of waste is assumed to be insignificant for the calculation of this category's impacts. For some waste categories (i.e. Others, Mixed Waste, Hazardous waste) recycling EFs are not available and disposal is considered to occur via incineration, for which a MSW incineration factor has been used. For ferrous and plastic materials, material-specific recycling processes were considered. For hazardous waste, only one recovery process was taken into account: incineration. Additional landfill treatment of hazardous waste was included this year. Global Warming Potential used comes from IPCC 2013 GWP 100-year values. iii. Quality: The quality of the primary data used is medium, consolidated into Group-level totals for several main recovery outlets. Due to modelling simplification (i.e., no geographical differentiation of waste treatment), the overall quality of the results is estimated as medium. However, quality is higher than for previous year calculation due to the more disaggregated data and more information on EoL treatment outlets.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain

Business travel

Evaluation status
Relevant, calculated

Metric tonnes CO2e
43676

Emissions calculation methodology
i. Data used: The primary data has been gathered from different sources: - Car rental distances and other rental information has been provided by Hertz. Emission factors were not provided and Quantis calculated carbon emissions for this category. - For train and air travel from Michelin's corporate travel agency were provided covering the full geographic scope of activities. - Vehicle leasing data has not been included in this year calculation: the data were used for the Category B calculation. ii. Methodology: Quantis analyzed Michelin's business travel data. Data included in this category is: - Car rental emissions. Distances were provided by Hertz. Quantis used an average emission factor from the ICCT (average emissions of 2018 manufactured vehicles). The emission factor only considers the direct emissions (TTW - Tank To Wheel). The same emission factor has been used for all vehicles. The emission factor in kg CO2 eq/km has been multiplied per the travelled distance. - Air travel. GHG emissions calculation were directly computed and communicated by business travel management provider. Quantis has verified the emission factors. - Rail travel. GHG emissions calculation were directly computed and communicated by the business travel management provider. Quantis has verified the emission factors. iii. Quality: The overall quality of the emissions is estimated as medium considering the use of an average emission factor for car rental emissions and the non availability of travelled distances by plane and train.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
100

Please explain
Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
213483

Emissions calculation methodology
i. Data used: The primary data used covers the total number of employees per country and region. They were aggregated by geographical regions where Michelin operates. Several different commuting scenarios were considered for areas where the number of employees was sufficiently high, while a default scenario was used for the remaining areas. It is assumed that these other commuting travels are made according to “outer suburban periphery” statistics. ii. Methodology: 2011 DEFRA Guidelines for Company GHG reporting were used for this category, especially for emission factors, and an assumption regarding the use of personal vehicles by employees. Both ecoinvent and Base Carbon from ADEME (French energy agency) were also used. IPCC 2007 GWP 100-year emission factors were used. Eurostat and specific literature were used to compute the distribution of different modes of transport. iii. Quality: Due to the generalization of these calculations, the quality of reported emissions data is medium to high.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Upstream leased assets

Evaluation status
Relevant, calculated

Metric tonnes CO2e
42172

Emissions calculation methodology
i. Data used: The primary data has been gathered from different sources: - Vehicle leasing. Service providers' contract extractions including direct emissions for each vehicle type. - Machinery and equipment leasing & real estate rentals. An extraction of the total purchases of other goods and services, broken down into 255 purchasing families, valid for 2019. Purchased are expressed in monetary terms (in €). Only leased goods have been included for the calculation of this category. ii. Methodology: Vehicle leasing Quantis verified data from service provider leasing mileage. - The contractual distance has been estimated as the real distance. The distance per contract has been multiplied by the emission factor provided by the ALD (in g CO2 eq / km). For some leasing, the EFs of the vehicles are not available and Quantis has applied a generic EF. For combustion vehicles, the EF used is the average of the direct emissions from the average combustion emissions of vehicles manufactured in 2018 according to ICT 2019 data. In the case of electric vehicles, the electricity consumption per kilometre (in kWh) has been obtained from the ecoinvent v3 database. The electricity consumption has been multiplied by the emission factor of each country (from GAIA, sourced from the EIA). In one case, for vehicles missing the annual mileage, an average has been used. For electricity, IEA 2018 data from 2016 has been used, Machinery and equipment leasing & real estate rentals Each sub-category or flow within the categories is associated with an economic sector from the environmentally-extended Input-Output Model Open IO v1.4. The model, originally developed in 2002, was adjusted for inflation, evolution of the purchasing power parity and of energy efficiency of the global economy for 2019. The amount spent in each sub-category is then multiplied by the sector unit GHG emission factor. Only leased goods have been included for the calculation of this category. iii. Quality: For vehicle leasing, the overall quality of the emissions is estimated as medium due to some missing distances and EFs and the use of contractual rather than real mileage. For machinery and equipment leasing & real estate rentals, the quality of the primary data used is high. However, due to the simplification involved in the modelling, the quality of the emissions data is considered as medium.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
66

Please explain

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
913517

Emissions calculation methodology
i. Data used Michelin provided carbon footprint emissions of finished products transport and distribution. Emissions are calculated using EcoTransit. ii. Methodology: Carbon emissions are calculated using EcoTransIT tool. Quantis verified the accuracy of the data (emission factors and calculations with the supply chain department). iii. Quality: The overall quality of the emissions is estimated as medium to high considering that EcoTransit takes into account the load levels of each mode of transportation and has more disaggregated EF than ecoinvent. However, some corrections have been done manually by Michelin or are based on 2018 data. "

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Processing of sold products

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
No particular processing of sold intermediate products by third parties subsequent to sale is required.
Use of sold products

Emission status
Relevant, calculated

Metric tonnes CO2e
149537012

Emissions calculation methodology
i. Data used: Use of sold products is evaluated for passenger & light duty vehicles, light commercial vehicles, medium freight trucks, heavy freight trucks, and bus and minibus tires, according to the road transport categories of the International Energy Agency's Mobility Model (https://www.iea.org/areas-of-work/programmes-and-partnerships/mobility-model). 2-wheel and off-road tires and Michelin Lifestyle Ltd products were not included because the CO2 impacts are not material. The primary data come from 3 sources: the most recent historical data (year 2015) on worldwide well-to-wheel CO2 emissions for road transport in the IEA Mobility Model, 2019 Global EV Outlook version; Michelin market share in units of tires for the categories listed above for year 2019; and growth rate in Michelin tire production from 2015 to 2019.

ii. Methodology: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/buses & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin's 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally, the total was extrapolated from 2015 to 2019 based on Michelin's actual tire production growth rate for this period to produce the final result.

WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance.

iii. Quality: The overall quality of the emissions is estimated as medium considering the data sources, application of average overall tire energy efficiency for 2 main tire categories, and extrapolation of emissions from 2015 to 2019.

Please explain

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

End of life treatment of sold products

Emission status
Relevant, calculated

Metric tonnes CO2e
3717842

Emissions calculation methodology
i. Data used: Primary data are the tonnage of tires sold by Michelin in 2019 per category of tires. End-of-life tire statistics come from “Global ELT Management – A global state of knowledge on regulation, management systems, impacts of recovery and technologies”, WBCBD & Tire Industry Project, December 2019. Other end-of-life products (Michelin Travel Partner and Michelin Lifestyle Limited) were excluded because their contribution was determined as insignificant (2%).

ii. Methodology: Quantis determined the average end-of-life of sold tires depending on the location according the “Global ELT Management” report. The report covers 14 different geographical areas, representing 33.5 % of the world tire market. Quantis analyzed Michelin's 2019 sales per country. 84% of Michelin's sales are covered by geographical areas documented in the report. Using raw data from the ELT report, Quantis calculated average end-of-life scenarios per type of end of life (material recycling, energy recovery, civil engineering and backfilling and others/unknown). A global average ELT was calculated including each geographical location covered by the ELT report. Using the rates mentioned above and the total tonnage of tires sold at each location, Quantis calculated the tonnage per type of end-of-life scenario. Whenever possible, location specific rates were used. When this was not the case, the global average was used. Then, each tonnage was multiplied by a specific EF. No benefits were considered because they are not included in the boundaries of the Scope 3 methodology defined by the GHG Protocol. Benefits can only be taken into account in a life cycle assessment approach. EFs used for the end-of-life of tires are calculated based on the LCA study from Aliapur (2009 LCA, covering 9 types of ELT). Aliapur is the reference organization in charge of tire recycling in France. More recent and precise data for ELT EFs does not exist. However, Quantis refined each EF by considering the specific EFs of the main components of the tire: natural & synthetic rubber, metal and textile. iii. Quality: The overall quality of the emissions is estimated as medium. On the one hand, more precise data was provided by Michelin. On the other hand, the worldwide ELT data set is less complete. Fewer countries were covered in the 2019 report and uncertainties in worldwide ELT data persist (e.g., in China).

Please explain

Downstream leased assets

Emission 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

Michelin does not own downstream assets that are leased to other entities not included in Scope 1 or 2.
Franchises

**Evaluation status**
Relevant, calculated

**Metric tonnes CO2e**
229441

**Emissions calculation methodology**

i. Data used: Primary data are the number of franchise sites for each country, an electricity consumption audit of French distribution outlets franchises and a report on CO2 emissions of Michelin-owned distribution sites for comparison. ii. Methodology: An average electricity consumption per m² has been calculated from data available in the distribution outlet audit. This file is an audit of energy consumption of 20 sites in France. The audit only reflects electricity consumption. An average area per franchise has been obtained from this report. Average fuel and gas consumption has been calculated from the study of Michelin-owned sites. This file is a report of emissions from 2012 data. It considers gas, fuel and electricity consumption of distribution centers in 11 countries. The report considers the total energy consumption, without considering the surface of the sites. There was no more recent source. With information from this file and the calculation of the electricity consumption / m², Quantis has estimated the average gas and fuel consumption / m² of distribution centers. Michelin provided the number of franchises per country. Some figures had to be adjusted to consider just Michelin franchises and not owned stores. The number of stores per country was multiplied per the average area and the average electricity, fuel and gas consumption per m² to obtain the total energy consumption. Then, energy consumption has been multiplied by IEA emission factors for electricity, and ADEME Base carbone emission factors for fuel and gas consumption. The IPCC 2013 GWP 100 was used. iii. Quality: The overall quality of the emissions is estimated as medium to high.

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
0

Please explain

Investments

**Evaluation status**
Not relevant, explanation provided

**Metric tonnes CO2e**
<Not Applicable>

**Emissions calculation methodology**
<Not Applicable>

**Percentage of emissions calculated using data obtained from suppliers or value chain partners**
<Not Applicable>

Please explain

Michelin does not provide financial services nor does its main activity is not relate to investments: it is neither a private financial institution (e.g., commercial banks), nor a public financial institution (e.g., multilateral development banks, export credit agencies, etc.).

Other (upstream)

**Evaluation status**

**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

Other (downstream)

**Evaluation status**

**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

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.

<table>
<thead>
<tr>
<th>CO2 emissions from biogenic carbon (metric tons CO2)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>28400</td>
<td>According to GHG Protocol Scope 2 Guidance, “market-based method data that includes biofuels should report the CO2 portion of the biofuel combustion separately from the scopes”. The guidance also indicates that “while biomass can produce fewer GHG emissions than fossil fuels and may be grown and used on a shorter time horizon, it still produces GHG emissions and should not be treated with a “zero” emission factor.” Yet, the use of biofuels is an integral part of our strategy to reduce our fossil fuel CO2 emissions. The French Environmental and Energy Agency (Ademe, Agence de l’Environnement et de la Maîtrise de l’Energie) prescribes the use of “0” Emission Factors for biomass and biogas combustion. The same goes for the European Emission Trading Scheme that do not require allowance surrendering for CO2 from bio sources. As a consequence, we do not include the CO2 from bioenergy in our CO2 mainstream reporting. From now on, since reporting CO2 from bioenergy is also a requirement by the SBTi, we will report CO2 from biomass, and will do it separately from the scopes. Our 2050 targets cover for fossil CO2 only. Our CO2 emissions from bio sources are deemed to grow, as they will replace a part of our fossil fuels.</td>
</tr>
</tbody>
</table>

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.

Intensify figure
0.000121

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e) 2919165

Metric denominator
unit total revenue

Metric denominator: Unit total 2413500000

Scope 2 figure used
Market-based

% change from previous year 11.26

Direction of change
Decreased

Reason for change
A decrease in CO2 emissions (numerator) was combined with an increase in total revenue (net sales) (denominator). The two main emission reduction activities were the following: (a) optimized operations management and deployment of Michelin’s best manufacturing practices drove a reduction in energy use; (b) renewable electricity purchases (see details in C8.2f).

Intensify figure
0.864

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e) 2919165

Metric denominator
metric ton of product

Metric denominator: Unit total 3380593

Scope 2 figure used
Market-based

% change from previous year 1.31

Direction of change
Decreased

Reason for change
A decrease in CO2 emissions (numerator) was combined with a decrease in Total PF production (denominator). Total CO2 emissions amounted to 0.86 metric tons per metric ton of tires produced in 2019, a decrease of 30.4% compared with 2010 and of 1.31% compared with 2018. The two main emission reduction activities where the following: (a) optimized operations management and deployment of Michelin’s best manufacturing practices drove a reduction in energy use per ton of finished product; (b) renewable electricity purchases (see details in C8.2e).

C7. Emissions breakdowns
(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
No

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

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Scope 1 emissions (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>947569</td>
</tr>
<tr>
<td>Asia, Australasia</td>
<td>16395</td>
</tr>
<tr>
<td>Americas</td>
<td>565943</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Business division</th>
<th>Scope 1 emissions (metric ton CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production of passenger car and light truck tires, in Europe</td>
<td>546704</td>
</tr>
<tr>
<td>Production of truck tires, in Europe</td>
<td>114608</td>
</tr>
<tr>
<td>Production of two-wheel vehicles, aviation, agriculture and earth-moving engines, heavy-duty equipment, worldwide</td>
<td>76730</td>
</tr>
<tr>
<td>Production of semi-finished products to make all types of tires marketed by Michelin</td>
<td>352548</td>
</tr>
<tr>
<td>Research and develop activities, including testing tracks</td>
<td>9310</td>
</tr>
<tr>
<td>Production of passenger car and light truck tires, in North America</td>
<td>226475</td>
</tr>
<tr>
<td>Production of truck tires in North America and all kinds of tires in South America</td>
<td>88703</td>
</tr>
<tr>
<td>Production of all kinds of tires in Asia</td>
<td>14537</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Scope 2, location-based (metric tons CO2e)</th>
<th>Scope 2, market-based (metric tons CO2e)</th>
<th>Purchased and consumed electricity, heat, steam or cooling (MWh)</th>
<th>Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>533162</td>
<td>202353</td>
<td>2266521</td>
<td>1545375</td>
</tr>
<tr>
<td>Asia, Australasia</td>
<td>555999</td>
<td>555396</td>
<td>1471035</td>
<td>1188</td>
</tr>
<tr>
<td>Americas</td>
<td>731710</td>
<td>731710</td>
<td>2108021</td>
<td>43460</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Business division</th>
<th>Scope 2, location-based (metric tons CO2e)</th>
<th>Scope 2, market-based (metric tons CO2e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production of passenger car and light truck tires, in Europe</td>
<td>377858</td>
<td>140998</td>
</tr>
<tr>
<td>Production of truck tires, in Europe</td>
<td>127918</td>
<td>63350</td>
</tr>
<tr>
<td>Production of two-wheel vehicles, aviation, agriculture and earth-moving engines, heavy-duty equipment, worldwide</td>
<td>109804</td>
<td>57644</td>
</tr>
<tr>
<td>Production of semi-finished products to make all types of tires marketed by Michelin</td>
<td>153160</td>
<td>143358</td>
</tr>
<tr>
<td>Research and develop activities, including testing tracks</td>
<td>22716</td>
<td>17296</td>
</tr>
<tr>
<td>Production of passenger car and light truck tires, in North America</td>
<td>467282</td>
<td>467282</td>
</tr>
<tr>
<td>Production of truck tires in North America and all kinds of tires in South America</td>
<td>104823</td>
<td>104823</td>
</tr>
<tr>
<td>Production of all kinds of tires in Asia</td>
<td>457331</td>
<td>467282</td>
</tr>
</tbody>
</table>
How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

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.

<table>
<thead>
<tr>
<th>Change in renewable energy consumption</th>
<th>27441</th>
<th>Increased</th>
<th>0.91</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculation method: (+27 441/3 002 435)=+0.91 % Explanation: In 2019, the Group purchased renewable electricity in eight European countries, with the total of around 1,465,000 MWh representing 31 % of all of the total electricity used by the Group, compared to 1,590,00 MWh and 34% in 2018. Thus, we bought less renewable MWh of electricity and a slightly lower share. Over the period, the weighted average of Emission factors in corresponding European countries decreased. (Calculation method: MWh of renewable electricity bought in each European Country multiplied by the country emission factor (IEA)/ total CO2 emission). As a result, our CO2 emission from purchased electricity in Europe increased by 27 441 tonnes compared with 2018.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other emissions reduction activities</td>
<td>33849</td>
<td>Decreased</td>
<td>1.13</td>
</tr>
<tr>
<td>Calculation method: (-33849/3002435)*100=−1.13%. This reduction is due to proactive emissions reductions including from investments in new HVAC, lighting, heating and cooling equipment and controls across operations. The following calculation also shows progress on specific energy consumption (GJ per ton): (11.92 - 12.06)/12.06 = -1.16 every other things been equal. -1.16% * 3 002 435=3 488, i.e. -1.16 multiplied by last year emissions, giving the decrease in CO2 emissions brought by pure progress in energy efficiency. Additional Information: In 2019, the Group’s energy consumption stood at 11.92 GJ per tonne of finished product, down by 1.1% year-on-year and by 17.2% since 2010. After a difficult 2018, which saw only a 0.4% improvement, the 2019 performance was better but still fell short of expectations. The year-end 2020 target is now set at a 22% decline from 2010, compared to the initial target of 25%. Based on lean manufacturing principles, the energy performance improvement approach is also compatible with the ISO 50001 standard. Its effectiveness was amply demonstrated in 2019, when production plant energy audits resulted in recommendations for around a 10% improvement over the next three years. New Site Energy Improvement Leaders have joined the network and the Technical Program has been broadened with a new solution to install heat pumps on the evaporative cooling towers, which enable waste heat to be repurposed, notably in heating systems. In France, heat pumps have been installed and commissioned at the Ladoux Technology Center in 2018 (now supplying 20% of the Center’s heat), at the Montceau-Les-Mines plant in May 2019 (50%) and at the Gravanches plant in December 2019 (100%). The energy efficiency improvement program was supported by €17.81 million in capital expenditure in 2019.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divestment</td>
<td>0</td>
<td>No change</td>
<td>0</td>
</tr>
<tr>
<td>The impact of divestment and acquisitions is taken into account through the change in energy efficiency combined with the change in output.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acquisitions</td>
<td>0</td>
<td>No change</td>
<td>0</td>
</tr>
<tr>
<td>The impact of divestment and acquisitions is taken into account through the change in energy efficiency combined with the change in output.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mergers</td>
<td>0</td>
<td>No change</td>
<td>0</td>
</tr>
<tr>
<td>No change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in output</td>
<td>30499</td>
<td>Decreased</td>
<td>1.02</td>
</tr>
<tr>
<td>Calculation method: (30,499/3 002 435)*100 = 1.02%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in methodology</td>
<td>0</td>
<td>No change</td>
<td>0</td>
</tr>
<tr>
<td>No change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in boundary</td>
<td>0</td>
<td>No change</td>
<td>0</td>
</tr>
<tr>
<td>No change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in physical operating conditions</td>
<td>0</td>
<td>No change</td>
<td>0</td>
</tr>
<tr>
<td>No change</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unidentified</td>
<td>5000</td>
<td>Increased</td>
<td>0.01</td>
</tr>
<tr>
<td>Calculation method: (5,165/3 002 435)*100 = 0.17%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>60496</td>
<td>Decreased</td>
<td>1.68</td>
</tr>
<tr>
<td>Calculation method: ((-0.427 - 0.443)/0.443=−1.68 i.e. decrease in the weighted average emission factors of the electricity we purchase from the grid, multiplied by the amount of grid-electricity consumed in 2019. Explanation: Change in Electricity emission factors where we do not purchase electricity form guaranteed renewable origin (mainly America and Asia)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Market-based

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) Select which energy-related activities your organization has undertaken.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel (excluding feedstocks)</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired heat</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of purchased or acquired cooling</td>
<td>No</td>
</tr>
<tr>
<td>Generation of electricity, heat, steam, or cooling</td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Heating value</th>
<th>MWh from renewable sources</th>
<th>MWh from non-renewable sources</th>
<th>Total (renewable and non-renewable) MWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel (excluding feedstock)</td>
<td>LHV (lower heating value)</td>
<td>0</td>
<td>5705489</td>
<td>5705489</td>
</tr>
<tr>
<td>Consumption of purchased or acquired electricity</td>
<td>&lt;Not Applicable&gt;</td>
<td>1465301</td>
<td>3111767</td>
<td>4577068</td>
</tr>
<tr>
<td>Consumption of purchased or acquired heat</td>
<td>&lt;Not Applicable&gt;</td>
<td>124722</td>
<td>787611</td>
<td>912333</td>
</tr>
<tr>
<td>Consumption of purchased or acquired steam</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>Consumption of purchased or acquired cooling</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
<td>&lt;Not Applicable&gt;</td>
</tr>
<tr>
<td>Consumption of self-generated non-fuel renewable energy</td>
<td>&lt;Not Applicable&gt;</td>
<td>0</td>
<td>&lt;Not Applicable&gt;</td>
<td>0</td>
</tr>
<tr>
<td>Total energy consumption</td>
<td>&lt;Not Applicable&gt;</td>
<td>1590023</td>
<td>9604868</td>
<td>11194890</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Application</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption of fuel for the generation of electricity</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of fuel for the generation of heat</td>
<td>Yes</td>
</tr>
<tr>
<td>Consumption of fuel for the generation of steam</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of fuel for the generation of cooling</td>
<td>No</td>
</tr>
<tr>
<td>Consumption of fuel for co-generation or tri-generation</td>
<td>No</td>
</tr>
</tbody>
</table>

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

**Fuels (excluding feedstocks)**
- Anthracite Coal
  **Heating value**
  LHV (lower heating value)
  **Total fuel MWh consumed by the organization**
  1784777
  **MWh fuel consumed for self-generation of electricity**
  <Not Applicable>
  **MWh fuel consumed for self-generation of heat**
  <Not Applicable>
  **MWh fuel consumed for self-generation of steam**
  <Not Applicable>
  **MWh fuel consumed for self-generation of cooling**
  <Not Applicable>
  **MWh fuel consumed for self-cogeneration or self-trigeneration**
  <Not Applicable>
  **Emission factor**
  354
  **Unit**
  kg CO2e per MWh
  **Emissions factor source**
  Emission Factors from Cross-sector Tools
  **Comment**
Fuels (excluding feedstocks)

Diesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
25639

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
<Not Applicable>

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
266

Unit
kg CO2e per MWh

Emissions factor source
Emission Factors from Cross-sector Tools

Comment

Fuels (excluding feedstocks)

Residual Fuel Oil

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
57196

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
<Not Applicable>

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
278

Unit
kg CO2e per MWh

Emissions factor source
Emission Factors from Cross-sector Tools

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
3844716

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
<Not Applicable>

MWh fuel consumed for self-generation of steam
<Not Applicable>

MWh fuel consumed for self-generation of cooling
<Not Applicable>
MWh fuel consumed for self-cogeneration or self-trigeneration
<Not Applicable>

Emission factor
202

Unit
kg CO2e per MWh

Emissions factor source
Emission Factors from Cross-sector Tools

Comment

C8.2d

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

<table>
<thead>
<tr>
<th></th>
<th>Total Gross generation (MWh)</th>
<th>Generation that is consumed by the organization (MWh)</th>
<th>Gross generation from renewable sources (MWh)</th>
<th>Generation from renewable sources that is consumed by the organization (MWh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Heat</td>
<td>4760427</td>
<td>4428754</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Steam</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Cooling</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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**
Other, please specify (Off-grid energy consumption from an on-site installation or through a direct line to an off-site generator owned by another company.)

**Low-carbon technology type**
Other, please specify (Heat recovery from waste combustion)

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

**MWh consumed accounted for at a zero emission factor**
21206

Comment

**Sourcing method**
Other, please specify (Off-grid energy consumption from an on-site installation or through a direct line to an off-site generator owned by another company.)

**Low-carbon technology type**
Biomass

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

**MWh consumed accounted for at a zero emission factor**
60056

Comment

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

**Low-carbon technology type**
Wind

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

**MWh consumed accounted for at a zero emission factor**
5983

Comment

**Sourcing method**
Power purchase agreement (PPA) with a grid-connected generator without energy attribute certificates

**Low-carbon technology type**
Solar

**Country/region of consumption of low-carbon electricity, heat, steam or cooling**
Asia Pacific (or JAPA)
MWh consumed accounted for at a zero emission factor

1188

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Hydropower

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

MWh consumed accounted for at a zero emission factor
831242

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Wind

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

MWh consumed accounted for at a zero emission factor
381051

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Solar

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

MWh consumed accounted for at a zero emission factor
27390

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Biomass

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

MWh consumed accounted for at a zero emission factor
20124

Comment

Sourcing method
Unbundled energy attribute certificates, Guarantees of Origin

Low-carbon technology type
Hydropower

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

MWh consumed accounted for at a zero emission factor
198323

Comment

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.
C10. Verification

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

<table>
<thead>
<tr>
<th>Scope</th>
<th>Verification/assurance status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Third-party verification or assurance process in place</td>
</tr>
<tr>
<td>2 (location-based or market-based)</td>
<td>Third-party verification or assurance process in place</td>
</tr>
<tr>
<td>3</td>
<td>Third-party verification or assurance process in place</td>
</tr>
</tbody>
</table>

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

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

Page/ section reference
2019 Michelin Universal Registration Document, chapter 4.2.3, pages 200-202

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

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

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

Page/ section reference
2019 Michelin Universal Registration Document, chapter 4.2.3, pages 200-202

Relevant standard
ISAE3000

Proportion of reported emissions verified (%)
100

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

**Scope 3 category**
Scope 3 (upstream & downstream)

**Verification or assurance cycle in place**
Triennial process

**Status in the current reporting year**
Complete

**Type of verification or assurance**
Limited assurance

**Attach the statement**
Michelin_Scope 3 verification_Assurance statement_V2.pdf

**Page/section reference**
Entire document. In the triennial process, the scope 3 emissions have been updated and verified in 2020 for the year ended on 31 December 2019 for all Scope 3 relevant categories (see Annex 1: Scope 3 Emissions pages 4 - 10).

**Relevant standard**
ISAE3000

**Proportion of reported emissions verified (%)**
100

---

C10.2

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

---

C10.2a

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

<table>
<thead>
<tr>
<th>Disclosure module verification relates to</th>
<th>Data verified</th>
<th>Verification standard</th>
<th>Please explain</th>
</tr>
</thead>
<tbody>
<tr>
<td>C6. Emissions data</td>
<td>Year on year emissions intensity figure</td>
<td>ISAE3000</td>
<td>100% of the data (Scope 1 and 2 emissions as the numerator, and mass of finished products as the denominator) have been verified by a third party providing limited assurance according to the ISAE3000 standard. Statutory Auditor’s report 2020.pdf.pdf</td>
</tr>
<tr>
<td>C5. Emissions performance</td>
<td>Other, please specify (CO2 emissions avoided)</td>
<td>ISAE3000</td>
<td>100% of the data have been verified by a third party providing limited assurance according to the ISAE3000 standard. Statutory Auditor’s report 2020.pdf.pdf</td>
</tr>
<tr>
<td>C6. Energy</td>
<td>Energy consumption</td>
<td>ISAE3000</td>
<td>100% of the data have been verified by a third party providing limited assurance according to the ISAE3000 standard. This data, along with the CO2 emission factors, allows the CO2 emissions to be calculated. Statutory Auditor’s report 2020.pdf.pdf</td>
</tr>
</tbody>
</table>

---

C11. Carbon pricing

---

C11.1

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

---

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.
EU ETS
France carbon tax
Shanghai pilot ETS

---

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

### EU ETS

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Scope 1 emissions covered by the ETS</td>
<td>57</td>
</tr>
<tr>
<td>% of Scope 2 emissions covered by the ETS</td>
<td>7.7</td>
</tr>
<tr>
<td>Period start date</td>
<td>January 1 2019</td>
</tr>
<tr>
<td>Period end date</td>
<td>December 31 2019</td>
</tr>
<tr>
<td>Allowances allocated</td>
<td>140478</td>
</tr>
<tr>
<td>Allowances purchased</td>
<td>835000</td>
</tr>
<tr>
<td>Verified Scope 1 emissions in metric tons CO2e</td>
<td>808737</td>
</tr>
<tr>
<td>Verified Scope 2 emissions in metric tons CO2e</td>
<td>115420</td>
</tr>
<tr>
<td>Details of ownership</td>
<td>Facilities we own and operate</td>
</tr>
<tr>
<td>Comment</td>
<td></td>
</tr>
</tbody>
</table>

**Shanghai pilot ETS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of Scope 1 emissions covered by the ETS</td>
<td>0</td>
</tr>
<tr>
<td>% of Scope 2 emissions covered by the ETS</td>
<td>8.1</td>
</tr>
<tr>
<td>Period start date</td>
<td>January 1 2019</td>
</tr>
<tr>
<td>Period end date</td>
<td>December 31 2019</td>
</tr>
<tr>
<td>Allowances allocated</td>
<td>116504</td>
</tr>
<tr>
<td>Allowances purchased</td>
<td>0</td>
</tr>
<tr>
<td>Verified Scope 1 emissions in metric tons CO2e</td>
<td>0</td>
</tr>
<tr>
<td>Verified Scope 2 emissions in metric tons CO2e</td>
<td>120724</td>
</tr>
<tr>
<td>Details of ownership</td>
<td>Other, please specify (Heat purchased from an ETS supplier)</td>
</tr>
<tr>
<td>Comment</td>
<td></td>
</tr>
</tbody>
</table>

Contrary to EU ETS, Shanghai ETS includes all emission from scope 2, including heat and electricity. Our 2 sites located in Shanghai have Scope 2 emissions only. In previous years, we reported it in this table like scope 1 emissions since your table did not have a scope 2 column.

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

### France carbon tax

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period start date</td>
<td>January 1 2019</td>
</tr>
<tr>
<td>Period end date</td>
<td>December 31 2019</td>
</tr>
<tr>
<td>% of total Scope 1 emissions covered by tax</td>
<td>35</td>
</tr>
<tr>
<td>Total cost of tax paid</td>
<td>720506</td>
</tr>
<tr>
<td>Comment</td>
<td></td>
</tr>
</tbody>
</table>

The French carbon tax covers the Group’s natural gas and coal purchases in France during the reporting year. Percentage of coverage is computed on the basis of the French perimeter.
C11.1d

What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

First, a corporate CO2 Allowances Work Group is in charge of monitoring the trading scheme and making sure the balance between allowances and emissions is reached. The work group makes decisions on necessary banking, pooling, and purchases. It comprises team members from EHS, energy purchasing, industrial operations, finance, accounting, and norms and regulations departments. It reports to the Environment Governance of the Group Executive Committee’s (board-level) Sustainable Development and Mobility Committee.

The work group is supported by two local “mirror” work groups: one in Europe (since 2005) and one in China (created in 2013). Example of action: The Committee has validated the decision to buy allowances on the market in advance of our needs by one year, so as to smooth the cost impact on our production facilities.

Second, a multi-disciplinary team focused on energy efficiency of industrial processes and on the energy mix of industrial sites continues its work. Specialists of all the fields involved in the Group are represented. Michelin has set an ambition to reduce its specific energy consumption by 22% between 2010 and 2020.

A target of -35% between 2010 and 2030 is now considered and under feasibility study. In order to implement energy-efficiency programs, each plant has an appointed energy specialist.

Example of action: the installation of heat pumps in the air cooler system to recover heat for reuse in plant buildings. At the Ladoux Technology Center in France, a recently commissioned a 0.9 MW heat pump, commissioned in 2018, is now covering 20% of the site’s building heating needs. Two other units came on stream in 2019, in Montceau-les-Mines and Gravanches facilities, covering respectively 50% and 100% of building heating needs.

C11.2

Has your organization originated or purchased any project-based carbon credits within the reporting period?

Yes

C11.2a

Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase
Credit origination

Project type
Forests

Project identification
Livelihoods with NGO Yagasu: mangrove restoration in Indonesia

Verified to which standard
VER+ (TÜV SÜD standard)

Number of credits (metric tonnes CO2e)
31688

Number of credits (metric tonnes CO2e): Risk adjusted volume
31688

Credits cancelled
No

Purpose, e.g. compliance
Voluntary Offsetting

Credit origination or credit purchase
Credit origination

Project type
Energy efficiency: households

Project identification
Livelihoods with NGO Hifadhi: clean, energy-saving cookstove distribution in the Embu region at the foot of Mount Kenya

Verified to which standard
Gold Standard

Number of credits (metric tonnes CO2e)
25796

Number of credits (metric tonnes CO2e): Risk adjusted volume
25796

Credits cancelled
No

Purpose, e.g. compliance
Voluntary Offsetting
<table>
<thead>
<tr>
<th>Credit origination or credit purchase</th>
<th>Credit origination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project type</td>
<td>Energy efficiency: households</td>
</tr>
<tr>
<td>Project identification</td>
<td>Livelihoods with NGO Tiipaalga households equipped with improved cookstove in Burkina Faso.</td>
</tr>
<tr>
<td>Verified to which standard</td>
<td>Gold Standard</td>
</tr>
<tr>
<td>Number of credits (metric tonnes CO2e)</td>
<td>11737</td>
</tr>
<tr>
<td>Number of credits (metric tonnes CO2e): Risk adjusted volume</td>
<td>11737</td>
</tr>
<tr>
<td>Credits cancelled</td>
<td>No</td>
</tr>
<tr>
<td>Purpose, e.g. compliance</td>
<td>Voluntary Offsetting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit origination or credit purchase</th>
<th>Credit origination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project type</td>
<td>Energy efficiency: households</td>
</tr>
<tr>
<td>Project identification</td>
<td>Livelihoods with NGO Peru</td>
</tr>
<tr>
<td>Verified to which standard</td>
<td>Gold Standard</td>
</tr>
<tr>
<td>Number of credits (metric tonnes CO2e)</td>
<td>642</td>
</tr>
<tr>
<td>Number of credits (metric tonnes CO2e): Risk adjusted volume</td>
<td>0</td>
</tr>
<tr>
<td>Credits cancelled</td>
<td>Yes</td>
</tr>
<tr>
<td>Purpose, e.g. compliance</td>
<td>Voluntary Offsetting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit origination or credit purchase</th>
<th>Credit origination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project type</td>
<td>Energy efficiency: households</td>
</tr>
<tr>
<td>Project identification</td>
<td>Livelihoods with NGO Hifadhi Improved cook-stoves in Embu County, Kenya</td>
</tr>
<tr>
<td>Verified to which standard</td>
<td>Gold Standard</td>
</tr>
<tr>
<td>Number of credits (metric tonnes CO2e)</td>
<td>23408</td>
</tr>
<tr>
<td>Number of credits (metric tonnes CO2e): Risk adjusted volume</td>
<td>0</td>
</tr>
<tr>
<td>Credits cancelled</td>
<td>Yes</td>
</tr>
<tr>
<td>Purpose, e.g. compliance</td>
<td>Voluntary Offsetting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit origination or credit purchase</th>
<th>Credit origination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project type</td>
<td>Forests</td>
</tr>
<tr>
<td>Project identification</td>
<td>Livelihoods' mangrove restoration grouped project in Senegal</td>
</tr>
<tr>
<td>Verified to which standard</td>
<td>Other, please specify (VCU)</td>
</tr>
<tr>
<td>Number of credits (metric tonnes CO2e)</td>
<td>23408</td>
</tr>
<tr>
<td>Number of credits (metric tonnes CO2e): Risk adjusted volume</td>
<td>0</td>
</tr>
</tbody>
</table>
Credits cancelled
Yes

Purpose, e.g. compliance
Voluntary Offsetting

Credit origination or credit purchase
Credit origination

Project type
Energy efficiency: households

Project identification
Cookstoves in Burkina Faso with NGO Tipaalga

Verified to which standard
Gold Standard

Number of credits (metric tonnes CO2e)
2974

Number of credits (metric tonnes CO2e): Risk adjusted volume
2974

Credits cancelled
Yes

Purpose, e.g. compliance
Voluntary Offsetting

Credit origination or credit purchase
Credit origination

Project type
Forests

Project identification
Araku in India

Verified to which standard
Other, please specify (VCU)

Number of credits (metric tonnes CO2e)
4879

Number of credits (metric tonnes CO2e): Risk adjusted volume
0

Credits cancelled
Yes

Purpose, e.g. compliance
Voluntary Offsetting

Credit origination or credit purchase
Credit origination

Project type
Energy efficiency: households

Project identification
Hifadhi Improved cook-stoves in Embu County, Kenya

Verified to which standard
Gold Standard

Number of credits (metric tonnes CO2e)
4009

Number of credits (metric tonnes CO2e): Risk adjusted volume
0

Credits cancelled
Yes

Purpose, e.g. compliance
Voluntary Offsetting

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

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

Objective for implementing an internal carbon price
- Stakeholder expectations
- Change internal behavior
- Drive energy efficiency
- Drive low-carbon investment

GHG Scope
- Scope 1
- Scope 2

Application
The price has been incorporated into the method of calculating return on investment for projects requiring major capital expenditure, such as production capacity increases, boiler upgrades and improvements to logistics operations worldwide.

Actual price(s) used (Currency /metric ton)
- 50

Variance of price(s) used
- None

Type of internal carbon price
- Shadow price

Impact & implication
As part of its commitment to significantly, yet cost-effectively reduce its CO2 emissions, Michelin supports the introduction of an international carbon pricing system. Today, there is no global carbon market or price, but only fragmented and uncoordinated systems in the European Union, certain Chinese provinces, California, Quebec, etc. Michelin, however, is strongly encouraging public stakeholders to support the development of a more structured market. This is why it has been a member of the World Bank’s Carbon Pricing Leadership Coalition since 2015. Since 2016, the Group has also been preparing for the emergence of a global carbon market by experimenting with an internal carbon price for its capital projects, set at €50 per ton of CO2. Since 2016, this price has been incorporated into the method of calculating return on investment for projects requiring major capital expenditure, such as production capacity increases, boiler upgrades and supply chain improvements. For projects designed to increase the energy efficiency of existing installations (curing press insulation, lighting upgrades, etc.), which require more modest outlays, the internal carbon price is now integrated into a new project consolidation application developed in 2016 as part of the new energy efficiency improvement program for industrial operations. Since 2016, each project leader is expected to submit two scenarios, one conventional and the other based on carbon costing €50 a ton. In this way, each project sponsor can compare the payback calculated with a carbon market price (now zero in every host region except Europe and Shanghai) and the payback calculated with the projected carbon price over the lifetime of the equipment being purchased today.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
- Yes, our suppliers
- Yes, our customers
- Yes, other partners in the value chain

C12.1a

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

Type of engagement
- Information collection (understanding supplier behavior)

Details of engagement
- Collect climate change and carbon information at least annually from suppliers

% of suppliers by number
- 1.5

% total procurement spend (direct and indirect)
- 66

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

Rationale for the coverage of your engagement
The rationale for this approach is to provide an overview of suppliers representing potentially high CSR risks, including on climate change issues. Michelin began to assess the CSR engagement with its suppliers in 2012 using the EcoVadis rating platform. The EcoVadis platform is a cross-industry recognized tool for assessing CSR performance, including climate change issues: formalized environmental policy including GHG emissions, type of actions in place for reducing emissions, employee awareness program, use of efficient equipment or technology, training programs. We chose to evaluate these providers because their purchase categories are the most relevant in terms of: 1) higher risk purchasing categories, 2) high risk countries, 3) high spend. The suppliers selected for this commitment belong mainly to the categories of raw materials, industry and services. The goal is to ensure that our suppliers are performing well on environmental issues - and, if not, to encourage them to improve their
practices (especially for those whose score is below our expectations).

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

Impact of engagement: In 2013, Michelin set a sustainable development target of at least 70% of 400 key suppliers achieving a minimum score of 45 on the EcoVadis CSR rating platform, by 2020. A total of 715 suppliers have been scored in 2019 (out of 812 requests), and participation is iterative as progress is made and action plans are implemented. In 2019, 84% of the 715 scored suppliers had achieved a score of 45 or above of the overall rating, and about the same percentage above the confirmed level for the "environment" rating, therefore meeting the corporate target ahead of schedule and more importantly providing an assurance of supplier awareness and initiative on climate change issues. The segmentation of our materials suppliers takes into account the Ecovadis performance of the suppliers. In 2020 the assessment program will cover around 880 suppliers. Measures of success: Suppliers which have an overall score <45 are requested to set up corrective actions. A follow-up of corrective action plans has been implemented since 2016/2019, with appropriate KPIs. This is a lever to improve supplier practices vs environment issues. We observe that the average Environmental score of Michelin suppliers is well above the average score of all suppliers scored by Ecovadis, showing that the selection of suppliers by Michelin is at or above industry standards.

**Comment**

**Type of engagement**

Information collection (understanding supplier behavior)

**Details of engagement**

Collect climate change and carbon information at least annually from suppliers

<table>
<thead>
<tr>
<th>% of suppliers by number</th>
<th>0.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>% total procurement spend (direct and indirect)</td>
<td>26</td>
</tr>
<tr>
<td>% of supplier-related Scope 3 emissions as reported in C6.5</td>
<td>4</td>
</tr>
</tbody>
</table>

Rationale for the coverage of your engagement

While the EcoVadis approach provided a basic understanding of suppliers' maturity in this area, the rationale for this new approach was to engage suppliers more concretely in CO2 mitigation. Thus, in 2018 we enhanced our supplier engagement via the CDP Climate Change Supply Chain questionnaire. This questionnaire has been sent to 67 suppliers amongst the purchase categories which have the highest impact on Michelin Scope 3 emissions. 57 of them answered the questionnaire. In 2020 This questionnaire has been sent to 95 suppliers (68 raw material suppliers + 25 suppliers in digital services).

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

Of all the suppliers requested to respond to the CDP Climate Change Supply Chain questionnaire, 85% responded in 2018. This survey has been renewed in 2020 to allow time in 2019 to analyse the data from the 2018 CDP reporting cycle. The segmentation of our raw material suppliers has been modified in 2018/2019 to take into account the response of the suppliers to the CDP Climate Change SC questionnaire.

**Comment**

**Type of engagement**

Compliance & onboarding

**Details of engagement**

Included climate change in supplier selection / management mechanism

Climate change is integrated into supplier evaluation processes

Other, please specify (Code of conduct/Michelin Purchasing Principles)

<table>
<thead>
<tr>
<th>% of suppliers by number</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>% total procurement spend (direct and indirect)</td>
<td>100</td>
</tr>
<tr>
<td>% of supplier-related Scope 3 emissions as reported in C6.5</td>
<td>8.6</td>
</tr>
</tbody>
</table>

Rationale for the coverage of your engagement

The management /segmentation of our suppliers has been modified in 2018/2019 to take into account their Ecovadis performance and, where relevant the response to the CDP Climate change questionnaire. Climate change issues are integrated in RFQ where it is the most relevant, e.g. for logistics suppliers, and can represents one of the selection criteria (where relevant). When relevant, suppliers are requested to provide "greener" alternatives (e.g. for energy, logistics). We also expect our suppliers (although it is not mandatory) to be compliant with ISO14001. The Michelin Purchasing Principles clearly states Michelin expectations towards suppliers for a more environmentally friendly business (including Climate change issues).

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

CSR issues are more and more systematically addressed in the Supplier Relationship Management business review meetings, revealing an increasing interest for a shared approach to increase CSR practices. Regarding logistics, forums with suppliers have been held in 2018 and 2019 in North America and Europe, in order to raise awareness, collect innovative ideas to improve CSR practices and subsequent actions have been planned. 66% of raw material supplier facilities are certified to ISO14001 standards

**Comment**

**Type of engagement**

Compliance & onboarding

**Details of engagement**

Included climate change in supplier selection / management mechanism

Climate change is integrated into supplier evaluation processes

<table>
<thead>
<tr>
<th>% of suppliers by number</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>% total procurement spend (direct and indirect)</td>
<td>2</td>
</tr>
</tbody>
</table>
**Rationale for the coverage of your engagement**

Michelin continues to engage a major part of its logistics partners (more than 70% of its CO2 emissions). The rationale of this approach is that even if the portion CO2 emissions is under 1% of Scope 3 emissions (as the use of sold products dominates the total emissions), we wanted to align the purchases of transport services with Michelin’s corporate values and its sustainable strategy. Works began with logistics partners in early 2018 to include GHG emissions in new tenders for maritime transportation and including climate change in its contractual conditions for European road hauliers. In North America, the choice of carrier is based on Smart Way Program. We chose these two categories of logistics partners as they represent about 7% of all transport related GHG emissions for the Group.

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

In 2019, we continue to work on the different action and continue to onboard our transport partners. The main achievements in 2019 are: 1) Achieve our objective of -10% of CO2 by ton sold between 2010 and 2030: in 2019, the result is -10.23%. 2) Establish a strong baseline of our environmental carbon footprint based on a recognized methodology (GLEC Framework), this baseline will allow us to work more specifically with our supplier on the main trade. 3) Establish a target of CO2 reduction based on SBT initiative target and communicate it to our partner: -15% of CO2 in absolute value. Start follow KPI on carbon footprint on quarterly basis: gr of CO2 per Ton Kilometre (gr.CO2.tkm) & CO2 in absolute value. 4) Create a club bringing together more than 50 actors (transporter, shipper, logistics subcontractor) in order to animate collaboration within the Movin’on event. 5) Animate 2 important workshops with our transport partner in North America and Europe to share Michelin Commitment about 3 pillars People, Profit and Planet. Semester review about CSR with maritime Supplier to focus on main action about CSR. 6) Launch the annual maritime tender with CO2 indication for each lane: Selection of 10% of our maritime Trade based on CO2 performance of the carrier 7) Select multimodal solution proposed by our partner instead of conventional solution (Truck): In Europe train from Poland to Germany, in North America boat from Canada to South Carolina (US).

**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**

75

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

0.6

**Portfolio coverage (total or outstanding)**

Not Applicable

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

Michelin strives to engage with all segments of B2C and B2B customers worldwide through reliable information on tire performance, including rolling resistance which has a direct impact on vehicle fuel efficiency. The rationale for targeting these customers is that they represent the majority of the tire supply and they may encourage the final consumer to choose more sustainable products. The purpose of Michelin is: to give everyone a better way forward, which means a more sustainable way forward. Michelin provides tire performance information in 3 ways: 1) through regulatory product labeling, for which Michelin has always been an advocate, covering fuel efficiency, wet grip and noise; 2) through information on tire performance and fuel efficiency provided by Michelin distribution networks, whether own (Euromaster, Allopneus, Ihle, Blackcircles), franchised (Euromaster, TCI, TyrePlus) or dealer/partnership networks; 3) through direct relations with existing and potential fleet customers.

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

Success of this engagement is measured by the number of customers reached, and by the reputation of Michelin with customers. It is estimated that through retail product labelling and other tire-performance information provided to customers through distribution networks, Michelin reaches about 3/4 of its customers, therefore potentially impacting 3/4 of the CO2 emissions during the use phase of tires. Measuring the success of this engagement is difficult, given that consumer choice in buying tires is not limited to the energy efficiency performance but takes into account many different factors. The most reliable indicator that Michelin has on the impact of this engagement is through the reputational surveys that are conducted by third parties. Through transparent communications practices with its customers, Michelin has maintained strong trust, as shown by the following: 1) In 2019, for the 5th consecutive year, the Reputation Institute, which ranks the world’s brands according to their reputation, has put Michelin at the head of the French rankings and 8th worldwide. Michelin is also the French brand with the best reputation in many countries: United States, China, Germany, the United Kingdom and Italy. 2) In 2019, Michelin retains its title as the world’s strongest tire brand with a Brand Strength Index (BSI) score of 86.30 out of 100 and a rating of AAA. Michelin is the only brand in the ranking to score an AAA rating. Michelin also defends its title as the world’s most valuable tire brand with a brand value of US$7.2 billion according to the latest Brand Finance Auto & Tyres 2019 report.

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

**BASYS Project running from 2014 to 2020:**

Key partners in the value chain include research institutions, product and technology developers, Government organisations, and NGOs that influence developments in the sector. Case Study: Michelin is a major player in this project (for “low hysteresis”), part of the French Platform of the Automotive Sector (PFA) research program, launched in 2014, that aims to achieve passenger car fuel efficiency at 2L/100 km by developing technological bricks to produce breakthroughs at an affordable price. Michelin is investigating the tire’s role in fuel efficiency and bringing together expertise on materials by partnering with a major supplier of silica (Solvay) and several research institutions, public & private (LRCCP, ARMINES-CEMEF, IMP, IPREM-EPCP, ADEME) to make a breakthrough in tire energy efficiency. The partners will analyze the rheological properties of materials & test the industrial feasibility of the developed solutions. These partnerships bring cutting edge scientific know-how to the project. The project’s goal is to shave off 4g of CO2 per km, a major contribution to the PFA’s ultimate goal of reaching an energy efficiency of 50g of CO2 per km in the passenger car B-segment: subcompacts, super minis & city cars. Such a breakthrough would be equivalent to the market introduction of the “green tire” in the 1990s.

In the frame of Basys Project, the Rolling Resistance performance reached is 2g of CO2 per km in 2019. Successes are related to new elastomers used in tread and also single steel cord in the belt of the tire. Some materials like Silica are not enough mature to be deployed on the market.

**PEGASE Project running from 2016 to 2019**

Michelin partnered with the ADEME on this 3-year research initiative that aims to reduce the rolling resistance (-1kg/t) and mass (-10kg) of long-haul truck tires while improving the useful lifetime by 10 to 20%. This project achieved project achieved a reduction of rolling resistance from 0.5 to 1kg/T according to the kind of tires, but unfortunately failed to widely reduce the mass of tires.

These two projects are now closed. Expenses are on the target.

---

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

- Direct engagement with policy makers
- Trade associations
- Funding research organizations
- Other

---

(C12.3a)
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**
European Tyre and Rubber Manufacturers’ Association (ETRMA)

**Is your position on climate change consistent with theirs?**
Yes
Please explain the trade association's position

The European tyre industry, represented by ETRMA, actively contributes to the policy debate on climate change, supporting the development of an ambitious and achievable regulatory framework. As part of its activities, ETRMA took an active role in the revision of the European Emission Trading Scheme (ETS), voicing its support to the scheme as a market-based and cost-efficient solution to decrease CO2 emissions, while safeguarding the level playing field. ETRMA has also actively contributed to the technical work of the new EU regulation on CO2 emissions of trucks and has advocated for the use of real values of rolling resistance, which contribute to a better evaluation of CO2 emissions linked to tyres; ETRMA is ensuring that this is applied to the tyres of the different types of trucks and trailers progressively introduced into the regulation.

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

Active participation in working groups and in the drafting of position papers.

Trade association
USTMA (US Tire Manufacturers Association)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s position

For light duty vehicle CO2 emissions: The USTMA advocates for establishing a federal rule on tire fuel efficiency performance standards (coupled with a wet traction performance standard). For heavy duty vehicle CO2 emissions: The USTMA supports federal greenhouse gas emissions requirements for tires and the EPA Smartway fuel efficiency and emissions reduction program.

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

Technical and advocacy support for consumer information on tire energy efficiency and rolling resistance test methods. Advocacy within USTMA for future support for a federal tire fuel efficiency performance standard for heavy duty vehicle tires.

Trade association
Associação Nacional da Industria de Pneumaticos (ANIP)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s position

ANIP has given support to Brazilian authorities in the adoption of a threshold and labelling regulation regarding tire rolling resistance. The regulation was published in 2012 and took effect in October 2016.

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

Active participation in ANIP’s technical commission, promoting low-carbon technologies and solutions, including rolling resistance requirements for passenger car and truck tires.

Trade association
Syndicat National du Caoutchouc et des Polymères (SNCP)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s position

Create a level playing field regarding CO2 emissions allowances in the European Union.

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

Active participation in working groups on climate change including the revision of the ETS directive.

Trade association
Entreprises Pour l'Environnement (EPE)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s position

Business must be at the forefront of the movement towards sustainable development and tackle climate change challenges through innovation. EPE promoted a study in 2018 showing that for climate change we need 3 major actors: companies, consumers and governments. Since EPE works with French government on several issues (advertising, CO2 emissions) for putting everyone on the CO2 right track

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

Active participation in - working groups on climate change to share practices and dialogue with main stakeholders - ZEN study ( study for having France neutral in CO2 in 2050) member of the board - Since December 2015 to May 2019 Michelin's CEO Jean-Dominique Senard has been the president of the organization for a 4-year term.

Trade association
Carbon Pricing Leadership Coalition (CPLC)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s position

The Carbon Pricing Leadership Coalition led by the World Bank aims at promoting carbon pricing mechanisms worldwide.

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

Michelin supports CPLC’s efforts to ensure the effective implementation of carbon pricing worldwide.
contribute to a more sustainable future. The Tire Industry Project is supported by the World Business Council for Sustainable Development.

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association’s position
On top of Michelin’s engagement since long towards low-CO2 emissions tyres, Michelin is co-leading the TIP (Tire Industry Project), which mission is to conduct and communicate technical & scientific studies, so as to be a reliable and trusted source of knowledge on the potential human and environmental impacts of tires through their lifecycle. This Geneva-based organization is promoting the awareness on industrial CO2 emission through a yearly release of total CO2 emission by 65% of tire industry worldwide. Also, TIP has decided to update the PCR tool (Product Category Rules) that analyses impact of a tire model on environment throughout its entire lifecycle. Notably, this tool evaluates any product’s impact on CO2 emission, contributing to customers awareness on the topic.

How have you influenced, or are you attempting to influence their position?
Michelin has functioned as co-leader of the organization’s work to date. In 2019, Michelin recommended TIP to works on PCR so that CO2 emission calculation would be more realistic. It was taken into account by the technical working group in 2020 and will be issued in 2021.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?
No

C12.3e
I. Work with the NGO the World Wildlife Fund (WWF)

Michelin & WWF signed a partnership in 2015 and renewed it in 2019 to promote sustainable rubber cultivation & prevent deforestation towards developing & applying responsible and sustainable rubber production practices and protecting primary forests. The renewed agreement also includes other topics regarding sustainable mobility.

Michelin works with WWF on natural rubber at a global level, in Indonesia through a JV with the Barito Pacific Group and helps locally in Sumatra and Borneo to protect and restore flora and fauna. These efforts jointly aim to be a model of cooperation to fight against climate change and to influence the automotive industry worldwide. The new partnership also includes establishing SBT for the reduction of GHG emissions.

**Actions advocated**: Analysis to identify the best ways to produce natural rubber responsibly. Done in collaboration with the WWF and other NGOs, this work resulted in the publication of Michelin's Sustainable Natural Rubber Policy with commitments to zero deforestation and preservation of water resources and peatlands. This document aims at promoting best practices across the entire value chain. This document is being currently up graded and the new version will be available end of 2020. Now in the implementation phase, the identified practices are being rolled out in Indonesia, starting with the JV cited above. The local partnership strives to protect Indonesian forests & biodiversity. The partnership between WWF and Michelin has contributed in developing a Global Platform for Sustainable Natural Rubber (GPSNR) to promote best practices through the entire supply chain. This platform has been launched in 2018 and will hold its 2nd General Assembly in Sept 2020.

II. Sustainable mobility solutions for cities

1) **Method of engagement**: Michelin, as a member of the World Business Council for Sustainable Development, is active in development and application of the Sustainable Urban Mobility (SiMPly) initiative.

2) **Topic**: SiMPly is a data-driven multi-stakeholder approach with the vision to accelerate progress towards multimodal, inclusive and low-environmental impact mobility in cities.

3) **Nature**: Develop an online planning tool for improving mobility in cities. An initial group of 6 cities participated in the pilot, and an additional 6 joined the initiative in 2016. Michelin lead the task force with the City of Chengdu on its specific mobility issues to produce a road map for scaling up implementation of sustainable mobility solutions. In 2017 Michelin offered to implement the SiMPly toolkit at the scale of a middle-sized city and proposed to assist the city Clermont-Ferrand, France towards integrating sustainability into its transportation planning process. To do so, Michelin led a group companies that are well-established in the metropolitan area and coordinated this informal public–private partnership.

4) **Actions advocated**: The SiMPly toolkit integrates a set of tailored indicators and economic instruments for cities to measure the current level of sustainability of their transport systems and identify opportunities to improve mobility of people & goods. In April 2016 the European Commission endorsed the SiMPly process as the recommended approach for cities in the EU. In 2017, Michelin launched a SiMPly project with the city of Clermont-Ferrand, France, where Michelin's corporate headquarters are located. As a result, in 2018 Michelin and its partners were able to identify new mobility solutions, based on telematics or intermodal integration for instance, and have undertaken to work with the city to confirm their feasibility.

III Transforming Urban Mobility

1) **Method of engagement**: Michelin, as a member of the WBCSD, is part of a new program launched in 2018 which aims to develop projects for improving urban mobilities

2) **Nature**: Michelin is co-chair of the program

3) **Actions advocated**: Projects & deliverables are:

   - **The Sustainable Mobility Management**: a) An agnostic urban mobility system map; b) A set of priority action for cities and business to collaborate and make urban mobility systems more sustainable.

   - **The data's sharing principles**: A position paper proposing data sharing principles between public and private sector stakeholders

   - **The Electric vehicles**: a) Corporate EV adoption guide and database of implementation tools; b) Demonstration projects

   - **Circular economy automotive deep dive**: Projects proving the models of CE in Automotive industry

IV Factor 10

1) **Method of engagement**: Michelin, as a member of the WBCSD, participates to one project of the Factor 10 program

2) **Nature**: Michelin is part of the working team on circular metrics

3) **Actions advocated**: a)Develop a consensus-based framework for measuring circularity within companies, and contribute business-driven input into public sector KPI frameworks; b)Test the proposal.

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?

External engagement on climate change-related issues is overseen by the executive vice president of engagement and brands, a member of the Groupe Executive Committee (GEC) and the Group Management Committee (GMC), which oversee the corporate climate change strategy, and a co-chair of the Sustainable Mobility Committee, which decides on the strategy for external engagement on sustainable mobility, in general, and decarbonizing transport, in particular. This position directly supervises the 3 departments that are regularly involved in climate change issues with policy makers: sustainable development and mobility, public affairs and norms and regulations. Issues related to Michelin products and services and to direct operations are handled the norms and regulations and public affairs departments. Issues relating to public institutions and public-private initiatives focused on decarbonizing the transport sector and promoting sustainable mobility policies are handled by the sustainability department. The sustainable development and mobility department also manages the Movin'on Sustainable Mobility Summit and the Movin'on LABS communities of interest which involves debate and development of policy issues. Representatives from all 3 departments are members of the Environment Governance body, a sub-group of the GEC, and can thus reinforce the coordination by the executive vice president of engagement and brands at the highest level of the company as well as ensure broad coordination across Group activities by virtue of its diversified representation.

If there were any inconsistencies between our business policy on climate change and public announcements these would be highlighted to the appropriate business unit and escalated to Group Executive Committee level if required. We communicate to our employees regularly on climate change issues and the importance of communicating externally with approved positions, and through official public affairs and business relations channels.

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

**Publication**

In mainstream reports

**Status**

Complete

**Attach the document**

20200416_MICHELIN_DEU_2019_EN_2.pdf

**Page/Section reference**

Michelin Universal Registration Document 2019 Chapter 1: Group presentation, ambitions and strategy (p.3-40) Chapter 4.1: MICHELIN Sustainable Development and Mobility Governance (p.131 - 134) Chapter 4.1.4: Environmental Governance, CO2emissions reduction and energy transition strategy and KPIs (169-170) Inventory of CO2 emissions (Scopes 1, 2 &3) (p.171-172) TCFD recommendations, Climate change strategy, risks & opportunities, (p.173-174) Environmental Targets, KPIs and actions (p.175-192)

**Content elements**

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

**Comment**

The ZEN 2050 study explores the feasibility of carbon neutrality in France by 2050, in terms of the balance between emissions in metropolitan France and absorption through carbon sinks. It identifies a number of conditions for a successful transition, and concludes with proposals for short-term actions that ensure the transformation remains economically and socially viable. Michelin participate to the study as a member of Entreprises pour l'Environnement (EpE) association.

**Publication**

In voluntary communications

**Status**

Complete

**Attach the document**


**Page/Section reference**

Study ZEN 2050, Entreprises pour l'environnement / All document

**Content elements**

Strategy

Risks & opportunities

Other, please specify (Feasibility of carbon neutrality in France by 2050)

**Comment**

The ZEN 2050 study explores the feasibility of carbon neutrality in France by 2050, in terms of the balance between emissions in metropolitan France and absorption through carbon sinks. It identifies a number of conditions for a successful transition, and concludes with proposals for short-term actions that ensure the transformation remains economically and socially viable. Michelin participate to the study as a member of Entreprises pour l'Environnement (EpE) association.

**Publication**

In voluntary communications

**Status**

Complete

**Attach the document**

Etude-Scénarios-Afep_TSP-Rapport-final-EN.pdf

**Page/Section reference**

ENERGY AND CLIMATE SCENARIOS, The Shift Project & AFEP / Page 45

**Content elements**
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.

<table>
<thead>
<tr>
<th>Job title</th>
<th>Corresponding job category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member of the Group Executive Committee, Executive Vice President of Manufacturing, Member of the Corporate Groupe Management Committee and lead chair of the Environment Governance.</td>
<td>Director on board</td>
</tr>
</tbody>
</table>

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?

<table>
<thead>
<tr>
<th>Row</th>
<th>Annual Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24135000000</td>
</tr>
</tbody>
</table>

SC0.2

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

Yes
Please use the table below to share your ISIN.

<table>
<thead>
<tr>
<th>ISIN country code (2 letters)</th>
<th>ISIN numeric identifier and single check digit (10 numbers overall)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR</td>
<td>0000121261</td>
</tr>
</tbody>
</table>

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**
Ford Motor Company

**Scope of emissions**
Scope 1

**Allocation level**
Company wide

**Allocation level detail**
<Not Applicable>

**Emissions in metric tonnes of CO2e**
46300

**Uncertainty (±%)**
1

**Major sources of emissions**
Energy consumption by onsite boilers

**Verified**
Yes

**Allocation method**
Allocation based on mass of products purchased

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

The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

**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**
48235

**Uncertainty (±%)**
2

**Major sources of emissions**
Net purchased electricity and steam

**Verified**
Yes

**Allocation method**
Allocation based on mass of products purchased

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

The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

**Requesting member**
Ford Motor Company

**Scope of emissions**
Scope 3

**Allocation level**
Company wide

**Allocation level detail**
<Not Applicable>

**Emissions in metric tonnes of CO2e**
5464163
Uncertainty (±%) 30

Major sources of emissions
Use phase: fuel consumed by the vehicle to overcome the tires’ rolling resistance

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
Using “The Green House Gas Protocol: A Corporate Accounting and Reporting Standard” methodology, and with the help of an external consultant, the sources of our scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/buses & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin’s 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin’s actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).

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 3702

Uncertainty (±%) 2

Major sources of emissions
Energy consumption by onsite boilers

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

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 3857

Uncertainty (±%) 2

Major sources of emissions
Net purchased electricity and steam

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.
**Requesting member**  
Nissan Motor Co., Ltd.

**Scope of emissions**  
Scope 3

**Allocation level**  
Company wide

**Allocation level detail**  
<Not Applicable>

**Emissions in metric tonnes of CO2e**  
436938

**Uncertainty (±%)**  
30

**Major sources of emissions**  
Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance

**Verified**  
Yes

**Allocation method**  
Allocation based on mass of products purchased

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

Using "The Green House Gas Protocol: A Corporate Accounting and Reporting Standard" methodology, and with the help of an external consultant, the sources of our scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/bus & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin's 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin’s actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).

---

**Requesting member**  
Jaguar Land Rover Ltd

**Scope of emissions**  
Scope 1

**Allocation level**  
Company wide

**Allocation level detail**  
<Not Applicable>

**Emissions in metric tonnes of CO2e**  
1026

**Uncertainty (±%)**  
2

**Major sources of emissions**  
Energy consumption by onsite boilers

**Verified**  
Yes

**Allocation method**  
Allocation based on mass of products purchased

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

The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

---

**Requesting member**  
Jaguar Land Rover Ltd

**Scope of emissions**  
Scope 2

**Allocation level**  
Company wide

**Allocation level detail**  
<Not Applicable>

**Emissions in metric tonnes of CO2e**  
1069

**Uncertainty (±%)**  
CDP
Major sources of emissions
Net purchased electricity and steam

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

Requesting member
Jaguar Land Rover Ltd

Scope of emissions
Scope 3

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
121090

Uncertainty (±%)
30

Major sources of emissions
Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
Using “The Green House Gas Protocol: A Corporate Accounting and Reporting Standard” methodology, and with the help of an external consultant, the sources of our scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/bus & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin’s 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin's actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).

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
15651

Uncertainty (±%)
2

Major sources of emissions
Energy consumption by onsite boilers

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.
General Motors Company

Scope of emissions
Scope 2

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
16305

Uncertainty (±%)
2

Major sources of emissions
Net purchased electricity and steam

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

BMW AG

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
6895
Uncertainty (±%)
2
Major sources of emissions
Energy consumption by onsite boilers
Verified
Yes
Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

Requesting member
BMW AG
Scope of emissions
Scope 2
Allocation level
Company wide
Allocation level detail
<Not Applicable>
Emissions in metric tonnes of CO2e
7184
Uncertainty (±%)
2
Major sources of emissions
Net purchased electricity and steam
Verified
Yes
Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

Requesting member
BMW AG
Scope of emissions
Scope 3
Allocation level
Company wide
Allocation level detail
<Not Applicable>
Emissions in metric tonnes of CO2e
813779
Uncertainty (±%)
30
Major sources of emissions
Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance
Verified
Yes
Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
Using "The Green House Gas Protocol: A Corporate Accounting and Reporting Standard" methodology, and with the help of an external consultant, the sources of our scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/bus & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin's 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin's actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).
Requesting member
Volkswagen AG

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
8833

Uncertainty (±%)
1

Major sources of emissions
Energy consumption by onsite boilers

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

Requesting member
Volkswagen AG

Scope of emissions
Scope 2

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
9202

Uncertainty (±%)
2

Major sources of emissions
Net purchased electricity and steam

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

Requesting member
Volkswagen AG

Scope of emissions
Scope 3

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
1042438

Uncertainty (±%)
30

Major sources of emissions
Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
Using "The Green House Gas Protocol: A Corporate Accounting and Reporting Standard" methodology, and with the help of an external consultant, the sources of our
Scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominance of Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/buses & minibuses (33% of vehicle fuel consumption), respectively. Then Michelin’s 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin’s actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).

Requesting member
Fiat Chrysler Automobiles NV

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
14710

Uncertainty (±%)
2

Major sources of emissions
Energy consumption by onsite boilers

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

Requesting member
Fiat Chrysler Automobiles NV

Scope of emissions
Scope 2

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
15325

Uncertainty (±%)
2

Major sources of emissions
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

Requesting member
Fiat Chrysler Automobiles NV

Scope of emissions
Scope 3

Allocation level
Company wide

Allocation level detail
<Not Applicable>
### Emissions in metric tonnes of CO2e

1736022

**Uncertainty (±%)**

30

**Major sources of emissions**

Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

---

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

Using "The Green House Gas Protocol: A Corporate Accounting and Reporting Standard" methodology, and with the help of an external consultant, the sources of our scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/Bus & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin's 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin's actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/-30%).

---

**Scope of emissions**

Scope 1

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

---

**Emissions in metric tonnes of CO2e**

5774

**Uncertainty (±%)**

2

**Major sources of emissions**

Energy consumption by onsite boilers

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

---

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

The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

---

**Scope of emissions**

Scope 2

**Allocation level**

Company wide

**Allocation level detail**

<Not Applicable>

---

**Emissions in metric tonnes of CO2e**

6015

**Uncertainty (±%)**

2

**Major sources of emissions**

Net purchased electricity and steam

**Verified**

Yes

**Allocation method**

Allocation based on mass of products purchased

---

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

---
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

**Requesting member**
Honda North America, Inc.

**Scope of emissions**
Scope 3

**Allocation level**
Company wide

**Allocation level detail**
<Not Applicable>

**Emissions in metric tonnes of CO2e**
681444

**Uncertainty (±%)**
30

**Major sources of emissions**
Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance

**Verified**
Yes

**Allocation method**
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
Using "The Green House Gas Protocol: A Corporate Accounting and Reporting Standard" methodology, and with the help of an external consultant, the sources of our scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/bus & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin's 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin's actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).

---

**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**
21135

**Uncertainty (±%)**
2

**Major sources of emissions**
Energy consumption by onsite boilers

**Verified**
Yes

**Allocation method**
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.
Emissions in metric tonnes of CO2e
22019
Uncertainty (±%)
2
Major sources of emissions
Net purchased electricity and steam
Verified
Yes
Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

Requesting member
Toyota Motor Corporation

Scope of emissions
Scope 3
Allocation level
Company wide
Allocation level detail
<Not Applicable>
Emissions in metric tonnes of CO2e
2494326
Uncertainty (±%)
30
Major sources of emissions
Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance
Verified
Yes
Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
Using “The Green House Gas Protocol: A Corporate Accounting and Reporting Standard” methodology, and with the help of an external consultant, the sources of our scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/bus & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin’s 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin’s actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).

Requesting member
Daimler AG
Scope of emissions
Scope 1
Allocation level
Company wide
Allocation level detail
<Not Applicable>
Emissions in metric tonnes of CO2e
6212
Uncertainty (±%)
2
Major sources of emissions
Energy consumption by onsite boilers
Verified
Yes
Allocation method
Allocation based on mass of products purchased
Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

Requesting member
Daimler AG

Scope of emissions
Scope 2

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
6472

Uncertainty (±%)
2

Major sources of emissions
Net purchased electricity and steam

Verified
Yes

Allocation method
Allocation based on mass of products purchased

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

The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

Requesting member
Daimler AG

Scope of emissions
Scope 3

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
733152

Uncertainty (±%)
30

Major sources of emissions
Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance

Verified
Yes

Allocation method
Allocation based on mass of products purchased

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

Using "The Green House Gas Protocol: A Corporate Accounting and Reporting Standard" methodology, and with the help of an external consultant, the sources of our scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/bus & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin’s 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin's actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).

Requesting member
Volvo Car Group

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail
<Not Applicable>
Emissions in metric tonnes of CO2e
Uncertainty (±%)
2
Major sources of emissions
Energy consumption by onsite boilers
Verified
Yes
Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

Requesting member
Volvo Car Group
Scope of emissions
Scope 2
Allocation level
Company wide
Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
Uncertainty (±%)
2
Major sources of emissions
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.
Verified
Yes
Allocation method
Allocation based on the volume of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

Requesting member
Volvo Car Group
Scope of emissions
Scope 3
Allocation level
Company wide
Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
Uncertainty (±%)
30
Major sources of emissions
Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance
Verified
Yes
Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
Using “The Green House Gas Protocol: A Corporate Accounting and Reporting Standard” methodology, and with the help of an external consultant, the sources of our scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/bus & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin's 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin’s actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).
**Requesting member**
CNH Industrial NV

**Scope of emissions**
Scope 1

**Allocation level**
Company wide

**Allocation level detail**
<Not Applicable>

**Emissions in metric tonnes of CO2e**
12987

**Uncertainty (±%)**
2

**Major sources of emissions**
Energy consumption by onsite boilers at tire production sites

**Verified**
Yes

**Allocation method**
Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

---

**Requesting member**
CNH Industrial NV

**Scope of emissions**
Scope 2

**Allocation level**
Company wide

**Allocation level detail**
<Not Applicable>

**Emissions in metric tonnes of CO2e**
15272

**Uncertainty (±%)**
2

**Major sources of emissions**
Net purchased electricity and steam for tire production sites

**Verified**
Yes

**Allocation method**
Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

---

**Requesting member**
CNH Industrial NV

**Scope of emissions**
Scope 3

**Allocation level**
Company wide

**Allocation level detail**
<Not Applicable>

**Emissions in metric tonnes of CO2e**
1193285

**Uncertainty (±%)**
30

**Major sources of emissions**
Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance

**Verified**
Please select

**Allocation method**
Allocation based on mass of products purchased

**Please explain how you have identified the GHG source, including major limitations to this process and assumptions made**
Using “The Green House Gas Protocol: A Corporate Accounting and Reporting Standard” methodology, and with the help of an external consultant, the sources of our
Scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/bus & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin’s 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin’s actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).

### Requesting member
Walmart, Inc.

### Scope of emissions
Scope 1

### Allocation level
Company wide

### Allocation level detail
<Not Applicable>

### Emissions in metric tonnes of CO2
587

### Uncertainty (±%)
2

### Major sources of emissions
Energy consumption by onsite boilers at tire production sites

Veriﬁed
Yes

### Allocation method
Allocation based on mass of products purchased

Please explain how you have identiﬁed the GHG source, including major limitations to this process and assumptions made
The sources of emissions identiﬁed are the sources over which the company has ﬁnancial control. Exclusions are noted in C6.4a.

### Requesting member
Walmart, Inc.

### Scope of emissions
Scope 2

### Allocation level
Company wide

### Allocation level detail
<Not Applicable>

### Emissions in metric tonnes of CO2
691

### Uncertainty (±%)
2

### Major sources of emissions
Net purchased electricity and steam for tire production sites

Veriﬁed
Yes

### Allocation method
Allocation based on mass of products purchased

Please explain how you have identiﬁed the GHG source, including major limitations to this process and assumptions made
The sources of emissions identiﬁed are the sources over which the company has ﬁnancial control. Exclusions are noted in C6.4a. A market-based accounting approach is used.

### Requesting member
Walmart, Inc.

### Scope of emissions
Scope 3

### Allocation level
Company wide

### Allocation level detail
<Not Applicable>

### Emissions in metric tonnes of CO2

Uncertainty (±\%)
30

Major sources of emissions
Use phase: fuel consumed by the vehicle to overcome the tires' rolling resistance

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
Using "The Green House Gas Protocol: A Corporate Accounting and Reporting Standard" methodology, and with the help of an external consultant, the sources of our
scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of
uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate
for availability or quality of primary data. The predominate Scope 3 category is the use phase, which represents 90% of all Scope 3 emissions. Methodology for the use
phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles.
Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that
more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data
set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption
(and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel
consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/buses & minibuses tires (33% of vehicle fuel consumption), respectively. Then
Michelin's 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015
to 2019 based on Michelin's actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously
reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019.
Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (± 30%).

---

Requesting member
Vale

Scope of emissions
Scope 1

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
5415

Uncertainty (±\%)
2

Major sources of emissions
Energy consumption by onsite boilers

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a.

---

Requesting member
Vale

Scope of emissions
Scope 2

Allocation level
Company wide

Allocation level detail
<Not Applicable>

Emissions in metric tonnes of CO2e
5641

Uncertainty (±\%)
2

Major sources of emissions
Net purchased electricity and steam

Verified
Yes

Allocation method
Allocation based on mass of products purchased

Please explain how you have identified the GHG source, including major limitations to this process and assumptions made
The sources of emissions identified are the sources over which the company has financial control. Exclusions are noted in C6.4a. A market-based accounting approach is
Please explain how you have identified the GHG source, including major limitations to this process and assumptions made

Using "The Green House Gas Protocol: A Corporate Accounting and Reporting Standard" methodology, and with the help of an external consultant, the sources of our scope 3 emissions were identified and emissions calculated on the basis of the raw data available and modeling assumptions specific to each category. The level of uncertainty for each category was determined by the quality of the raw data used and the degree to which extrapolations and/or hypotheses were required to compensate for availability or quality of primary data. The predominate scope 3 category is the use phase, which represents 90% of all scope 3 emissions. Methodology for the use phase: In 2019, Michelin and IEA refined the Mobility Model to link tire energy efficiency performance, expressed as rolling resistance, to CO2 emissions from vehicles. Previously the relation between tires and vehicle energy efficiency had been highly simplified in the model. A worksheet was developed to present CO2 emissions that more accurately reflect the impact of tire energy efficiency on CO2 reductions for the main road transport categories (cited above) on an annual basis for the historical data set, as well as for the B2DS, 2DS and 4DS scenarios. The allocation of the carbon emissions of road transport vehicles to the tire was done as follows: fuel consumption (and by proxy CO2 emissions) associated with tire rolling resistance was determined as an average percentage for passenger & light duty vehicles (20% of vehicle fuel consumption) and for light commercial vehicles/medium freight trucks/heavy freight trucks/bus & minibus tires (33% of vehicle fuel consumption), respectively. Then Michelin’s 2019 market share was applied to determine the worldwide WTW CO2 emissions allocated to Michelin tires in use. Finally the total was extrapolated from 2015 to 2019 based on Michelin’s actual tire production growth rate for this period to produce the final result. WTW emissions, rather than TTW emissions in the previously reported GHG inventory, were calculated to be aligned with the SBTi Transport Guidance. The value reported here is based on the Scope 3 inventory for the year 2019. Scope 3 calculations for customer supply chain purposes are determined on a 3-year cycle given the high level of uncertainty of Scope 3 emissions (+/- 30%).
(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.

Our main focus will be on the Scope 3 category “Purchased Goods and Services”. Our aim is to collect more primary data from our suppliers to 1) better understand the CO2 efficiency of categories of raw materials, and 2) reduce the uncertainty of the calculation of both total and customer-allocated CO2 emissions and 3) identify opportunities to promote CO2 reductions in the production of raw materials.

SC2.1

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

**Requesting member**
BMW AG

**Group type of project**
New product or service

**Type of project**
Other, please specify (1) New product or service that reduces customers operational emissions (2) New product or service that has a lower upstream emissions footprint

**Emissions targeted**
Actions that would reduce both our own and our customers’ emissions

**Estimated timeframe for carbon reductions to be realized**
3-5 years

**Estimated lifetime CO2e savings**

**Estimated payback**
3-5 years

**Details of proposal**
1) Michelin proposes to pursue efforts with BMW to develop tires with lower rolling resistance whilst maintaining longevity and other key performances to satisfy the end user and optimize the use of materials for the next generation of vehicles. 2) Michelin also proposes to work with BMW on reducing vehicle weight by eliminating the spare wheel and developing a low rolling resistance standard & extended tires. Michelin strongly supports BMW’s approach to have only Label A tires starting in 2020 to improve overall fleet consumption. 3) During BEV i2o quotation, Michelin has demonstrated future tire technologies potential to reduce significantly the CO2 footprint by main three levers: - by materials’ sourcing: use of renewable vegetal sources as biobutterfly (see 3/) and increase of recyclable steel - by tire production: already today the electricity used during tire production in the European plants is coming from 100% renewable energy. The Michelin group is currently exploring possibilities to use CO2 free steam. - by the product itself that offers homogenous tire performances overall its life time (“long lasting performance (LLP)”: related studies prove that LLP tires have the best sustainable footprint. 4) Michelin proposes to continue working together with BMW to promote the importance of sustainability at industry and automotive conferences, such as at Movin’On

---

**Requesting member**
Ford Motor Company

**Group type of project**
Other, please specify (1) New product or service (2) Relationship sustainability assessment

**Type of project**
Other, please specify (1) New product or service that reduces customers operational emissions (2) Assessing products or services life-cycle footprint to identify efficiencies

**Emissions targeted**
Actions that would reduce our own supply chain emissions (our own scope 3)

**Estimated timeframe for carbon reductions to be realized**
3-5 years

**Estimated lifetime CO2e savings**
580000

**Estimated payback**
3-5 years

**Details of proposal**
1) Since 1992 Michelin has been continually reducing rolling resistance (RR) and believes itself to be the most advanced tire manufacture based on overall performance. Michelin proposes to pursue efforts with Ford to develop tires with lower RR whilst maintaining longevity and other key performances to satisfy the end user and optimize the use of materials for the next generation of vehicles. Specifically, we propose working with Ford to reduce RR: a) in Europe for passenger cars down to have less than 5.0 kg/T (WLTP); b) in North America for light trucks down to 6.0 kg/T; and c) in China for passenger cars while maintaining the robustness required in that zone. 2) Michelin proposes to demonstrate to Ford its ambition to continue reducing the life cycle environmental footprint of its tires by conducting a LCA (Life Cycle Assessment) to identify the potential savings by using a best combination of low RR tires, wear and weight (especially with green electricity mix)

---

**Requesting member**
Nissan Motor Co., Ltd.

**Group type of project**
New product or service
**Type of project**
New product or service that reduces customers operational emissions

**Emissions targeted**
Actions that would reduce both our own and our customers’ emissions

**Estimated timeframe for carbon reductions to be realized**
3-5 years

**Estimated lifetime CO2e savings**

**Estimated payback**
3-5 years

**Details of proposal**
Michelin proposes to continue working with Nissan on advanced engineering projects to improve vehicle fuel efficiency and reduce CO2 emissions (projects identified as “Good fuel economy”). Such projects allow Michelin to optimize the three major tire parameters contributing to fuel consumption: rolling resistance, mass and aerodynamics. Michelin is committed to helping Nissan improve fuel efficiency while also maintaining balanced performances between longevity, traction, wear, to ensure customer satisfaction.

---

**Requesting member**
Jaguar Land Rover Ltd

**Group type of project**
New product or service

**Type of project**
New product or service that reduces customers products/services operational emissions

**Emissions targeted**
Actions that would reduce both our own and our customers’ emissions

**Estimated timeframe for carbon reductions to be realized**
3-5 years

**Estimated lifetime CO2e savings**

**Estimated payback**
3-5 years

**Details of proposal**
Since 1992 Michelin has been continually reducing rolling resistance (RR) and believes itself to be the most advanced tire manufacturer based on overall performance. Michelin proposes to work with Jaguar Landrover on improving rolling resistance on new vehicles (especially to meet WLTP regulations), whilst keeping balanced performances between longevity, traction, wear and other key performances to ensure customer satisfaction.

---

**Requesting member**
General Motors Company

**Group type of project**
Other, please specify (1) New product or service 2) Relationship sustainability assessment 3) Reduce Logistics Emissions

**Type of project**
Other, please specify (1) New product or service that reduces customers operational emissions 2) Assessing products or services life-cycle footprint to identify efficiencies 3) Others : Revise manufacturing footprint for reduced logistics requirements

**Emissions targeted**
Actions that would reduce both our own and our customers’ emissions

**Estimated timeframe for carbon reductions to be realized**
3-5 years

**Estimated lifetime CO2e savings**
8990000

**Estimated payback**
3-5 years

**Details of proposal**
1) Michelin proposes to pursue two areas of collaboration with GM. The first is to further develop technologies to reduce vehicle CO2 emissions through low rolling resistance roadmaps created globally with GM to ensure best technology availability in all zones (EU, NA, CHN). The second is reduce vehicle mass by replacing the spare tire with run-flat, sealant solutions or advanced technologies. A major recent agreement was recently made for Uptis research. 2) Supporting GM efforts with WWF on tire sustainability, recyclability, materials development (2 times presence at Movin’On summit) 3) Working with GM to optimize manufacturing locations within region which reduces logistics emissions (ex: collaboration within NA zone to propose shipping location changes or direct from factory shipping to optimize Michelin & GM business models)

---

**Requesting member**
Volkswagen AG

**Group type of project**
Other, please specify (1) New product or service 2) Relationship sustainability assessment

**Type of project**
Other, please specify (1) New product or service that reduces customers products/services operational emissions 2) Assessing products or services life-cycle footprint to identify efficiencies

**Emissions targeted**
Actions that would reduce both our own and our customers’ emissions
Estimated timeframe for carbon reductions to be realized
Please select

Estimated lifetime CO2e savings

Estimated payback
3-5 years

Details of proposal
Since 1992 Michelin has been continually reducing rolling resistance and believes itself to be the most advanced tire manufacturer based on overall performance. Michelin proposes to pursue efforts with Volkswagen to develop tires with lower rolling resistance while maintaining longevity and other key performances to satisfy the end user and optimize the use of materials for the next generation of vehicles. Michelin also proposes to work with Volkswagen on reducing vehicle weight by eliminating the spare wheel and developing a low rolling resistance standard & extended tires. Michelin strongly supports Volkswagen's approach to have mainly Label A tires starting in 2019 to improve overall fleet fuel consumption. Moreover, in the context of their partnership contract, Porsche and Michelin have formally agreed to participate in the sustainable development minimizing their environmental impact and preserving resources and biodiversity (the corporate objectives of both companies include CO2 reduction goals). Therefore, they have agreed on collaborating on a common Life Cycle Assessment (LCA) approach to evaluate the eco-performance of cars and tires as well as the contribution of tires to the eco-performance of the car.

Requesting member
Fiat Chrysler Automobiles NV

Group type of project
Other, please specify (1) New product or service 2) Reduce Logistics emissions 3) Change to provision of goods and services)

Type of project
Other, please specify (1) New product or service that reduces customers operational emissions 2) Route optimization 3) Reducing the number of trips by increasing load sizes)

Emissions targeted
Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized
Please select

Estimated lifetime CO2e savings

Estimated payback
3-5 years

Details of proposal
Michelin proposes to work with Fiat Chrysler on improving rolling resistance on new vehicles (especially to meet WLTP regulations), while maintaining Michelin Total Performance (=keeping balanced performances between longevity, traction, wear and other key performances) to ensure customer satisfaction. At the logistics level, Michelin proposes to continue finding solutions for shipments that optimize loads and reduce trips, thereby reducing CO2 emissions (as Michelin has done for the new Wrangler programs, for which tire shipments will be all loose-laced, as opposed to bundled/banded like the current Wrangler).

Requesting member
Honda North America, Inc.

Group type of project
New product or service

Type of project
New product or service that reduces customers operational emissions

Emissions targeted
Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized
3-5 years

Estimated lifetime CO2e savings

Estimated payback
3-5 years

Details of proposal
Michelin proposes to work with Honda on 2 opportunities to reduce CO2 emissions. The first is to offer low rolling resistance with robust tire into the emergency market with slime line & LLRC design concept with co-dev for new EV in 2023, while maintaining Michelin Total Performance (=keeping balanced performances between longevity, traction, wear and other key performances) to ensure customer satisfaction. The second is to start exchanging about future techno for ultra low RRC & light tire through HONDA new scheme agreement (not concluded yet).

Requesting member
Toyota Motor Corporation

Group type of project
New product or service

Type of project
New product or service that reduces customers operational emissions

Emissions targeted
Actions that would reduce both our own and our customers' emissions

Estimated timeframe for carbon reductions to be realized
3-5 years

Estimated lifetime CO2e savings
**Estimated payback**
3-5 years

**Details of proposal**
Michelin proposes to work with Toyota on 2 opportunities to reduce CO2 emissions. The first is to offer low rolling resistance with "real world" situation with APOE approach and try to manage Dry / Wet mu level. The second is to pursue improvements in aerodynamics by optimizing the combination of vehicular and tire aerodynamics.

**Requesting member**
Daimler AG

**Group type of project**
New product or service

**Type of project**
New product or service that reduces customers products / services operational emissions

**Emissions targeted**
Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**
3-5 years

**Estimated lifetime CO2e savings**

**Estimated payback**
3-5 years

**Details of proposal**
1/ Since 1992 Michelin has been continually reducing rolling resistance and believes itself to be the most advanced tire manufacturer based on overall performance. Michelin proposes to pursue efforts with Mercedes to develop tires with lower rolling resistance while maintaining longevity and other key performances to satisfy the end user and optimize the use of materials for the next generation of vehicles. 2/ Michelin also proposes to work with Mercedes on reducing vehicle weight by eliminating the spare wheel and developing a low rolling resistance standard & extended tires. Michelin strongly supports Mercedes's approach to generalize Label A tires to improve overall fleet consumption.

**Requesting member**
Volvo Car Group

**Group type of project**
Other, please specify (1)New product or service 2/ Relationship sustainability assessment

**Type of project**
Other, please specify (1)New product or service that reduces customers products/services operational emissions 2/ Assessing products or services life-cycle footprint to identify efficiencies

**Emissions targeted**
Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**
3-5 years

**Estimated lifetime CO2e savings**

**Estimated payback**
3-5 years

**Details of proposal**
Volvo and Michelin are in evaluation of a sustainable tire project judging the tire's ecological performance based on a life cycle assessment. The global CO2 emissions should be reduced via a long wear tires project that reduce CO2 in tire (vehicle) production being replaced less often and that reduces CO2 because of lower consumption by reducing rolling resistance.

**Requesting member**
CNH Industrial NV

**Group type of project**
New product or service

**Type of project**
New product or service that reduces customers products / services operational emissions

**Emissions targeted**
Actions that would reduce both our own and our customers' emissions

**Estimated timeframe for carbon reductions to be realized**
1-3 years

**Estimated lifetime CO2e savings**

**Estimated payback**
3-5 years

**Details of proposal**
1/Michelin has been continually reducing rolling resistance and believes itself to be the most advanced tire manufacturer based on total performance. Michelin proposes to pursue efforts with CNH to develop tires with lower rolling resistance while maintaining customer satisfaction regarding mileage, TCO and safety. On the short term Michelin propose action plan to optimised CNH current portfolio and specific sales force joined action to engage fleet specification toward lower RR tyre. On the long term Michelin shared product plan ambition to better support CNH with CO2 challenges. 2/Michelin propose to continue to support innovation on next vehicle generation including connected tyre system technology and digital services. 3/ In addition Michelin is supporting CNH strategy with BEV and FCEV with offering strong support on Nikola program in US and Eur. Michelin is committed to best tyre solution that support strong acceptance of advanced electric solution in the market (Range, TCO, standardisation...)
**Requesting member**  
Daimler AG

**Group type of project**  
New product or service

**Type of project**  
New product or service that reduces customers products / services operational emissions

**Emissions targeted**  
Please select

**Estimated timeframe for carbon reductions to be realized**  
1-3 years

**Estimated lifetime CO2e savings**

**Estimated payback**  
3-5 years

**Details of proposal**

1/ Michelin has been continually reducing rolling resistance and believes itself to be the most advanced tire manufacturer based on total performance. We can shared as an example the launches of the new generations of X One tyres in North American (X Line Grip D, X line Energy T2). 2/ Michelin want to support Daimler global operation across the planet. This is the reason why we introduce the ultimate Fuel efficient ranges in emerging markets such as Brazil, India (X Multi Energy) or China (X Line Energy 2) from 2021 to extend the footprint of this solution more environment friendly. 3/ Michelin proposes to pursue partnership with Daimler to develop tires with lower rolling resistance while maintaining customer satisfaction regarding mileage, TCO and safety like in the US where R&D teams share vehicle and Tire roadmap. Concrete proposal have been made in Europe and Japan this year. 4/ Michelin propose to continue support innovation on next zero emission vehicle generation electrique and autonomous including connected tyre system technologie: discussion or partnership are on going in Europe, US and Japan.

---

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?  
No

SC3.1

(SC3.1) Do you want to enroll in the 2020-2021 CDP Action Exchange initiative?  
No

SC3.2

(SC3.2) Is your company a participating supplier in CDP’s 2019-2020 Action Exchange initiative?  
No

SC4.1

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

SC4.1a

(SC4.1a) Give the overall percentage of total emissions, for all Scopes, that are covered by these products.  
94

SC4.2a

---
### SC4.2a

Complete the following table for the goods/services for which you want to provide data.

<table>
<thead>
<tr>
<th>Name of good/service</th>
<th>Description of good/service</th>
<th>Type of product</th>
<th>SKU (Stock Keeping Unit)</th>
<th>Total emissions in kg CO2e per unit</th>
<th>±% change from previous figure supplied</th>
<th>Date of previous figure supplied</th>
<th>Explanation of change</th>
<th>Methods used to estimate lifecycle emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger car tires</td>
<td>Thick elastic rubber ring, filled with air, fitted around the outer edge of the wheel of a car, allowing the vehicle to stick to the road surface and to travel over the ground more easily, increasing safety and facilitating driving.</td>
<td>Final</td>
<td>Single 11.56-kg tire</td>
<td>961</td>
<td>0</td>
<td>July 26 2016</td>
<td>The figure reported is for the year 2016. Because the calculation method is simplified to represent an average Michelin passenger car tire, improvements to energy efficiency from reduced rolling resistance and mass across different product lines has not been included in the figure reported here.</td>
<td>Other, please specify (Internal: based on IPCC 2007 factors)</td>
</tr>
</tbody>
</table>

### SC4.2b

Complete the following table with data for lifecycle stages of your goods and/or services.

<table>
<thead>
<tr>
<th>Name of good/service</th>
<th>Please select the scope</th>
<th>Please select the lifecycle stage</th>
<th>Emissions at the lifecycle stage in kg CO2e per unit</th>
<th>Is this stage under your ownership or control?</th>
<th>Please select</th>
<th>Type of data used</th>
<th>Please select</th>
<th>Data quality</th>
<th>If you are verifying/assuring this product emission data, please tell us how</th>
</tr>
</thead>
</table>
## SC4.2c

### (SC4.2c) Please detail emissions reduction initiatives completed or planned for this product.

<table>
<thead>
<tr>
<th>Name of good/service</th>
<th>Initiative ID</th>
<th>Description of initiative</th>
<th>Completed or planned</th>
<th>Emission reductions in kg CO2e per unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger car tires</td>
<td>Initiative 1</td>
<td>Since 1992, Michelin has been increasing the energy efficiency of vehicles by reducing the energy required for a vehicle to overcome rolling resistance. The figure reported to the right represents Michelin’s ambition for 2030 to achieve a reduction in CO2 emissions associated with the rolling resistance of a passenger car tire on a unit basis and over the course of one year. Much of Michelin’s progress to date stems from the efficient Energy™ Saver line, created in 1993 and now in its fifth generation. Energy™ Saver tires are delivering an improvement of up to 0.2 L/100 km (compared to the first generation), in an average, equivalent-size European car, for an average of 4g/km reduction in CO2 emissions.</td>
<td>Please select</td>
<td>15.5</td>
</tr>
<tr>
<td>Truck tires</td>
<td>Initiative 2</td>
<td>Since 1992, Michelin has been increasing the energy efficiency of vehicles by reducing the energy required for a vehicle to overcome rolling resistance. The figure reported to the right represents Michelin’s ambition for 2030 to achieve a reduction in CO2 emissions associated with the rolling resistance of a truck tire on a unit basis and over the course of one year. In truck tires, the technological innovations collectively known as “Michelin Durable Technologies” offer a wide range of benefits, including a significant improvement in fuel efficiency and therefore also in CO2 emissions. These technologies also increase a truck’s load capacity and the tire’s total life-span, which has doubled since 1980.</td>
<td>Please select</td>
<td>95</td>
</tr>
<tr>
<td>Passenger car, truck, two-wheel, aviation, earth-movers and agricultural engines: Reducing the carbon emissions of our manufacturing plants.</td>
<td>Initiative 3</td>
<td>We are reducing the energy consumption in plants by extending the use of energy audits, sharing best practices and installing new equipment and processes. We are also developing the use of renewable energies, including solar installations, wind turbines and biomass heating boilers, as well as a green energy purchasing program. These are ongoing initiatives that contribute to our short-term and long-term CO2 reduction goals (see targets section of CDP reply). Site-specific projects have been completed, others are in progress and more are being planned. The CO2 reduction is expressed in kg per ton of finished product in 2018 compared to 2017.</td>
<td>Please select</td>
<td>10</td>
</tr>
</tbody>
</table>

## SC4.2d

### (SC4.2d) Have any of the initiatives described in SC4.2c been driven by requesting CDP Supply Chain members?

No

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

<table>
<thead>
<tr>
<th>I am submitting to</th>
<th>Public or Non-Public Submission</th>
<th>Are you ready to submit the additional Supply Chain Questions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am submitting my response</td>
<td>Investors, Customers</td>
<td>Yes, submit Supply Chain Questions now</td>
</tr>
</tbody>
</table>

Please confirm below

I have read and accept the applicable Terms