

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 124,000 people worldwide. Net sales in 2020 were €20.5 billion. Michelin holds forefront positions in every segment of the tire market. Associated brands and services also include dealerships and service centers (Euromaster, TBC, TyrePlus), online retailing (Allopnus, Blackcircles), wholesalers (Euromaster and Ihle 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 Fenner 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.

In 2020 Michelin steps up its innovation in sustainable materials research, with a focus on recycling technologies, by investing in strategic partnerships with Enviro, Carbios and Pyrowave.

C0.2

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

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2020	December 31 2020	No	<Not Applicable>

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.

Position of individual(s)	Please explain
Board-level committee	The Groupe Executive Committee (GEC), Group Management Committee (GMC) and the Supervisory Board are the 3 board-level committees responsible for climate-related issues. The GEC -- the managing chairman, general manager and 9 executive VPs -- focuses on strategic decisions, such as corporate transformations, business models, acquisitions, performance, brand strategy, and sustainable growth. 2 members -- executive VPs of manufacturing and R&D -- have delegated responsibility to make decisions on climate-related risks and opportunities regarding operations through the Environment Governance (EG) body which represents all operational departments. The CEG as a whole oversees climate-related opportunities regarding business strategy through the annual strategic planning process for business units. The GMC is comprised of the GEC plus 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. The GMC manages transformation, competitiveness, integration of acquisitions and the internal control, quality and risk management processes. It consults with a panel of business units and regions to ensure that its decisions are widely embraced across the organization. It oversees climate-related risks managed through the enterprise risk management system, progress against climate-related targets, and external engagement on decarbonization of transport and mobility systems. It is briefed 2 times per year by the Chief Sustainability Officer to ensure that all climate-change related issues overseen by the EG body are reviewed at the highest level of the company. The GEC and GMC are therefore responsible for overseeing assessment and management of risks and opportunities related to climate change for Michelin and its subsidiaries. The role of Supervisory Board is to exercise permanent oversight of the Group's management and to assess its quality for the benefit of the shareholders. Its 4-member CSR Committee examines the Group's strategy, objectives, policies and commitments regarding climate change, and makes recommendations in this regard; ensures the integrity, completeness and exemplary nature of the climate change strategy and initiatives; reviews strategic roadmaps and their implementation.

C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	Reviewing and guiding strategy: The Group Management Committee (GMC), which brings together the Group Executive Committee (GEC, or management board) 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 KPIs on reducing Scope 1&2 and Scope 3 CO2 emissions and achieving carbon neutrality in 2050, and reduction of resource consumption in both manufacturing and in tire design. As such, it decides on whether adjustments to targets or resources are required. As of 2021 the GMC oversees 6 Group-wide transformations, one of which is "All in action for the environment". This transformation includes reaching carbon neutrality by 2050 for manufacturing, logistics and raw materials, and contributing to downstream users' carbon neutrality with products and services enabling highly energy efficient and low carbon mobility. The role of the GMC is to ensure that the necessary changes take place across Group's organizations that will enable the roadmap to carbon neutrality to be implemented and achieved.
Scheduled – some meetings	Reviewing and guiding business plans	<Not Applicable>	Reviewing and guiding business plans: The Group Executive Committee (GEC) conducts an annual review of how the business units', operational and support departments' and regions' 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 customers' expectations and willingness to pay for sustainable mobility offers that create value balanced between people, planet and profit and that drive innovation roadmaps over the long run. The review concludes by highlighting 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)	Reviewing and guiding risk management policies Setting performance objectives Overseeing major capital expenditures, acquisitions and divestitures	<Not Applicable>	Setting performance objectives: Once a year the Group Management Committee (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. In 2020, the review included a new environmental risk map approved by the Environment Governance body that includes climate-related risks corresponding to the TCFD approach of physical risks and transition risks.
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding risk management policies Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	The Supervisory Board CSR Committee verifies that the internal management system for advancing the Group's climate change strategy is robust and meets the needs and external requirements that it identified. It receives the presentation of the Group's CSR risk map, which includes physical and transition risks related to climate change, every year. It reviews, together with the Audit Committee, the risks and opportunities thus identified and is kept informed of their evolution and of the characteristics of their management systems. It reviews the Group's climate change-related policies, guidelines and standards and ensures that they are effective. In its role to monitor the CSR topics covered by the Group's CSR governance both in terms of actions and monitoring indicators, it issues opinions and forward-looking recommendations in particular in light of weaknesses of the actions or indicators, including those under the Group climate change strategy.

C1.2

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

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other C-Suite Officer, please specify (General Manager)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other C-Suite Officer, please specify (Executive vice president of Manufacturing Operations)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other C-Suite Officer, please specify (Executive vice president of Research & Development)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Chief Risks Officer (CRO)	<Not Applicable>	Other, please specify (Assessing and managing climate-related risks)	<Not Applicable>	Quarterly
Chief Sustainability Officer (CSO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other C-Suite Officer, please specify (Chief Strategy Officer)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly
Other, please specify (Research and Development Strategy Committee)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The CEO oversees the strategy for external engagement on sustainable mobility and decarbonizing transport. The latter is the most material climate change issue for Michelin. The CEO is assisted by the Chief Sustainability Officer to monitor climate-related issues with a focus on identifying and developing opportunities for 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 LAB). These same experts identify and manage risks regarding corporate engagement and reputation, in consultation with the Chief Sustainability Officer and the CEO.

The General Manager has 2 main functions: 1) to oversee all issues related to sustainable finance, including implementation of the recommendations of the Task Force on Climate-related Financial Disclosure and the EU Sustainable Finance regulation; 2) to ensure that the management systems in place for climate-related risks and opportunities are reviewed by the Supervisory Board's CSR Committee. These functions are supported by the Chief Sustainability Officer.

The positions of executive VP of manufacturing operations 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 under auspices the Group Management Committee (GMC), and as such they are empowered to make decisions for the GMC 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 norms 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 GMC are made by the Environment Governance body. 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 Chief Risk Officer reports to the GMC on climate-related risks in coordination with the Environment Governance body, which itself oversees climate-related audits and internal control.

The Chief Strategy Officer ensures that the annual strategic planning process overseen by the GEC incorporates the key inputs and outputs so that climate-related risks and opportunities are taken into account in the 5-year strategic plans of business units, operating/support departments and regions. The Chief Sustainability Officer and their team supports this process.

The Research and Development Strategy Committee, a cross-functional panel of executives from research and development, manufacturing and business units, decides on which low-carbon products and services that will move from research and development phases to commercial offers. As such, it provides key inputs to the strategic planning process.

C1.3

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

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

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

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target	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.
Other, please specify (R&D employees and managers)	Monetary reward	Efficiency project	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.
Management group	Monetary reward	Emissions reduction project	A group of managers covering environment, energy use and energy purchasing are evaluated at year-end on their performance in steering the implementation of energy and CO2 reduction targets and projects.

C2. Risks and opportunities

C2.1

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

Yes

C2.1a

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

	From (years)	To (years)	Comment
Short-term	0	5	This time horizon is aligned with corporate-level and business units' management of operational risks and 5-year business plans. 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 LAB and the Transport Decarbonization Alliance; 10) managing SBTi-approved targets for raw materials suppliers; 11) R&D projects and partnerships for energy-efficient materials, products and services; 12) stakeholder materiality assessments.
Medium-term	5	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/tire energy efficiency, CO2 emissions, long-lasting performance; 6) climate change scenarios analysis by business units and operational departments in line with the recommendations of the Task Force on Climate-related Financial Disclosure; 7) managing SBTi-approved targets for manufacturing and upstream and downstream supply chain. This is also the timeframe for supporting actions for reducing GHG emissions from transport and related UN Sustainable Development Goals under the SuM4All consortium (https://www.sum4all.org/who-we-are).
Long-term	15	30	This time horizon applies to 1) developing a corporate SBT roadmap under a below 2 °C and 1.5 °C scenarios for long-term reductions to CO2 emissions from manufacturing and upstream and downstream value chain activities, including product use; 2) Michelin support for implementing the Paris Process on Mobility and Climate (http://www.ppmc-transport.org/about/) global macro roadmap for zero net emissions of the transport sector by 2050 under the UNFCCC process; 3) Michelin's active participation in the Transport Decarbonization Alliance (https://tda-mobility.org/) for accelerating the worldwide transformation of the transport sector towards a net-zero emission mobility system before 2050; 4) Climate-related risk assessment in line with the recommendations of the Task Force on Climate-related Financial Disclosure.

C2.1b

(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 has an adverse effect on annual operating income (low risk = less than 150 M €, medium risk = between 150 M and 400 M€, high risk = more than 400 M€). For opportunities, no hard-and-fast threshold exists. The portfolio of opportunities is developed through an array of programs and initiatives (see C2.2) and managed by business units' in their plans. Anticipated positive impacts for major initiatives are announced annually in Michelin's strategic plan as communicated through its annual financial and sustainability report. Smaller initiatives are developed in incubation mode or as business ventures.

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

Risk management framework: Michelin's enterprise risk management framework is based on a thorough review of risks that could have a material adverse effect on operations, financial position, reputation or impact on people or the environment, and compliant with the Committee of Sponsoring Organizations of the Treadway Commission standards. The risk map is comprised of 14 risk families which are the basis for reassessing risks, identifying emerging risks and steering risk reduction actions. It is reviewed annually in a process steered by the Corporate Risk Department that involves a/ bottom-up risk assessment, b/ external risk watch and c/ internal audit, culminating in a status report to the GMC. Responsibility: Overseen by the Corporate Risk Department in terms of methodology and internal control, each operational and business entity establishes and updates its risk portfolio and sets its action plans. Results are reviewed and approved by the designated risk governance committees covering the 14 risk families. All climate-related risks and opportunities related to operations are reviewed by the Environment Governance and those related to products and services are overseen in the annual strategic planning process by the Group Executive Committee (GEC). The Group Management Committee (GMC) oversees the risk management process. Risks with a substantive financial or strategic net impact are regularly reviewed by the GMC. The Supervisory Board Audit Committee checks the effectiveness of the management process. Status of climate-related risks: The ERM process can trigger significant updates of risk families, as was the case for the environmental risk family, completely overhauled and aligned with TCFD risks in 2020. As a result, 5 climate-related risk factors were identified as relevant: a new risk factor 1) acute and chronic physical impacts of climate change on continuity of operations and raw material/components supplies; and 4 existing risk factors 2) legal/regulatory non-compliance/cost of compliance (e.g., CO2 quotas); 3) impact on reputation from inability to meet environmental commitments (e.g., failure to meet CO2 reduction targets); 4) failure to anticipate scientific/technological and societal/market changes (e.g., new forms of mobility of people and goods); 5) media or NGO attack regarding CSR policies (e.g., greenwashing CO2 performance claims). The first 3 of risks above represent potential substantive financial or strategic impacts and are thus reported in C2.3a. The newest risk factor "acute and chronic physical impacts of climate change on continuity of operations and raw material/components supplies" is undergoing a company-wide internal audit to measure the risk from a systemic and forward-looking climate scenarios perspective and determine the maximum financial impact. This is the first step in the risk management process to understand the complexities of physical risks, decide on acceptable risk level, apply risk reduction measures and monitor & check. CASE STUDY ON PHYSICAL RISKS: The potential impact from increased severity and frequency of extreme weather on the availability of raw materials and components was identified as a risk factor 10 years ago through bottom-up risk assessment, added to the Corporate Purchasing Department risk portfolio and managed by the business continuity director. Up until 2021, the risks have been assessed based on an external watch of historical trends (e.g., flooding in Thailand, a major source of natural rubber; hurricanes in the US Gulf Coast where chemical suppliers are located). The risk response involves a/ training employees on improving risk planning, b/ diversifying the supplier base, c/ maintaining strategic buffer inventory for critical products, d/ seeking substitute products for scarce commodities. The internal audit cited above will estimate the maximum potential impact related to upstream supply chain disruptions and will build on existing knowledge to include vulnerability and resilience assessment under multiple climate change scenarios. Risks and opportunities for business units: A flexible approach empowers business units to use the available resources to identify, assess and act on opportunities and risks under Michelin's "All Sustainable Approach" to reach carbon neutrality in 2050 for own operations and enable decarbonisation for downstream users of products and services. The high-priority opportunities and risks are incorporated into their 5-year strategic plans which are reviewed and approved on an annual basis by the GEC. The strategic planning process is steered by the Corporate Strategy Department. Inputs and insights for the strategic planning process for business units are drawn from: 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. 2) Advanced research teams—pursue projects validated by the CIB or GEC, often with external partnerships to complement in-house expertise. 3) Strategic Foresight team—provides climate scenario analysis tools and forward-looking business trends analysis covering climate change issues. 4) Incubator Program Office (IPO)—develops non-tire growth opportunities. 5) Public Affairs—anticipates regulatory changes related to CO2 emissions and low-carbon products; 6) Norms & Regulations—develops and implements strategies to set common industry/sector rules to promote low-carbon products and services; 7) Movin'on Summit and Movin'on LABS (<https://summit.movinonconnect.com/>)—Michelin-created sustainable mobility ecosystem with 29 corporate and institutional partners and an array of private and public actors for enabling business model development around decarbonization of the mobility sector, transport system efficiency, multimodal mobility and preserving resources. The main opportunities having substantive financial or strategic impacts are reported in C2.4a. CASE STUDY ON TRANSITION OPPORTUNITY: Ship owners now recognize the urgency to decarbonize maritime transport. This need is the driver for Michelin's innovation in wind-powered solutions for freight and passenger ships: WISAMO, is an inflatable sail installed on existing or new ships to harness wind energy as a complement to fuel, delivering 10-20% CO2 reductions. The GEC set materials innovation as a key component of the growth strategy; the CIB defined research priorities in non-road mobility. A French-Swiss R&D advanced research team then collaborated with external partners to develop WISAMO. As of 2020, IPO manages the project from incubation to a commercial offer. WISAMO was officially launched at the 2021 Movin'on Summit. Our integrated management process assessed and drove this downstream opportunity, which exploited Michelin's operational capabilities over a short-term time scale. The first commercial ship will be equipped in 2022.

C2.2a

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Current regulations are deemed a relevant risk because they can have impacts across Michelin activities and in multiple geographic zones, particularly manufacturing, but also regarding products and services, with financial impacts that are currently material and potentially substantive, as defined under C2.1b. Climate policy particularly is a rapidly developing space and is regularly reviewed to ensure we are ahead of current regulation. Specific risks in this area relate to emissions reporting and energy regulation, increased energy costs, carbon pricing and expanding carbon trading schemes. 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 Management Committee, 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 committee 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. Regulatory risks are identified and evaluated by specialists in the environment, public affairs and norms & regulations departments. Those that could impact operations are reviewed regularly by the Carbon Strategy Committee which operates under the Environment Governance body. Those that impact could impact products and services are managed in business units' risk portfolios.
Emerging regulation	Relevant, always included	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. Climate policy particularly is a rapidly developing space and is regularly reviewed to ensure we are ahead of current regulation. Specific risks in this area relate to emissions reporting and energy regulation, increased energy costs, carbon pricing and expanding carbon trading schemes. Example: Manufacturing could be impacted by newly created CO2 quota or tax systems at country or regional level. 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 Management Committee, 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 affairs to anticipate requirements and integrate them into operational activities. Example: Product design could be impacted by vehicle tailpipe CO2 emissions standards, tire performance thresholds and/or tire labelling/grading 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. Emerging regulatory risks are identified and evaluated by specialists in the environment, public affairs and norms & regulations departments. Those that could impact operations are reviewed regularly by the Carbon Strategy Committee which operates under the Environment Governance body. Those that impact could impact products and services are managed in business units' risk portfolios.
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. Failure to innovate effectively or use technological advancements to make our products and operations more sustainable may decrease our competitive abilities, impacting sales and growth. 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 Movin' on Summit and Movin' on LABS, a collaborative mobility platform. 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 Executive Committee (management board) through the annual strategy planning process. 2) Sustainability & technology: R&D technology watch is in place for tire design that includes new means to increase energy efficiency and reduce tire mass, while incorporating more materials from recycled or renewable feed stock and maintaining key tire performances. Opportunities for developing technologies and the associated risks, in the form of costs and lost time, are evaluated within the R&D organization, with decisions on major projects overseen by the R&D management team. Example of a specific risk considered: how to incorporate sustainable materials (renewable and recycled feedstock & recyclability) without undercutting tire energy efficiency, while meeting market demands for sustainable offers, or lack thereof, that can stem from extremely different expectations about sustainability or its definition.
Legal	Relevant, always included	Legal risks that are climate change-related mainly stem from false performance claims, which is particularly relevant to the car manufacturing sector and therefore to Michelin as an equipment supplier, in the fallout from "diesel-gate". Example: As regulations are promulgated on CO2 tailpipe emissions standards, compliance is relevant for vehicle manufacturers, but not for tire manufacturer like Michelin. Yet 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, for the use of measurement methods that are as representative as possible of the actual use conditions, and not just theoretical values, in the determination of vehicle CO2 emissions. The reliability of CO2 measurements is critical for ensuring transparency and reducing legal liability, direct or indirect. Example: companies must comply with regulations on truthful advertising and publicity. Michelin assesses and manages risks of this nature to ensure that product launches are accompanied by ad campaigns that are compliant and to the maximum extent possible, immune from claims of greenwashing. Legal risks are identified and evaluated at the entity-level and managed in the corresponding risk portfolio.
Market	Relevant, always included	The relevance of market conditions as a corporate risk is 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 for 3 reasons: a/ B2B customers - an increasing number are including climate-related (e.g., net zero) 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; b/ investors - an increasing number are requesting information on CO2 emissions and decarbonization strategy; c/ in the diversified B2C markets, consumers' behavior on preferred modes of mobility are rapidly evolving. An inability to meet changing consumer demands could impact upon our ability to win work and ultimately our revenues and reputation. 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 supply 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 Executive Committee (management board) through the annual strategy planning process.
Reputation	Relevant, always included	Reputational risks related to climate change are relevant because of increasing scrutiny by the public authorities, citizenry, NGOs etc. Failure to ensure an enhanced reputation could impact upon our share price (through investor confidence) and sales (through tendering processes which require clear sustainability credentials). 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 web site. 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, always included	Our company has significant geographical coverage throughout the supply chain that could be significantly impacted by higher frequency of storms, floods, drought, wildfires etc. This could cause delays in our supply chain and impact upon our cash flow and reputation. While the number of Michelin sites impacted by extreme weather 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, several supplier sites were shut down following Hurricane Harvey in Texas in 2017. This risk was added to the Group risk map in 2020 after a full review and update of the environmental risk family. It is managed under the ERM process: a/ a corporate-wide audit to determine maximum possible impact, current risk management practices and residual risk, to be concluded in 2021; b/ identification of off-the-shelf/bespoke risk evaluation methodologies and tools that cover multiple climate change scenarios and that are adapted to Michelin activities. The results of these actions will aid decision-making by the Environment Governance body and inform future ERM responsibilities and actions to mitigate, control, transfer or accept the risk. Notwithstanding the actions described above, Michelin has begun to map the potential acute physical impacts of climate change. 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 vulnerability of sites and operations is better known and climate change scenarios are used to model future impacts, risks from extreme weather event risks will be further refined to locations and types of impacts.
Chronic physical	Relevant, always included	Our company has significant geographical coverage throughout the supply chain that could be significantly impacted by higher temperatures and changes in precipitation. This could cause increased costs in our supply chain and our cost base. This risk was added to the Group risk map in 2020 after a full review and update of the environmental risk family. It is managed under the ERM process: a/ a corporate-wide audit to determine maximum possible impact, current risk management practices and residual risk, to be concluded in 2021; b/ identification of off-the-shelf/bespoke risk evaluation methodologies and tools that cover multiple climate change scenarios and that are adapted to Michelin activities. The results of these actions will aid decision-making by the Environment Governance body and inform future ERM responsibilities and actions to mitigate, control, transfer or accept the risk. Notwithstanding the actions described above, Michelin has begun to map the potential chronic physical impacts of climate change. 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 suitable rubber production will surely evolve. Current predictions, however, involve long-term hypotheses with high levels of uncertainty. Michelin's response in this context is: 1) diversification with supplies 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.

C2.3

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

Yes

C2.3a

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

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Market	Other, please specify (Changing shareholder and customer requirements)
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Primary potential financial impact

Other, please specify (Decreased operating income due to higher cost of capital and/or decreased revenues due to reduced demand for products)

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

RISK DRIVER: The number of questions from shareholders and customers relating to Net Zero has significantly increased in number and specificity since 2019. Failure to achieve Net Zero could therefore present a risk to our ability to win new contracts and/or keep shareholders. This risk driver is reflected in one of the top 11 risk factors for the Group, published in the annual report -- 2020 Universal Registration Document: "Environmental policy misaligned with stakeholder expectations". The potential impacts of this risk for Michelin stem from two scenarios: 1) that the pace of decarbonization of overall operations, with regards to investors, and at certain production plants, with regards to customers, is not sufficient to retain their capital or their business, respectively; 2) that corporate reporting and information provided externally is not sufficient to ensure institutional investors and customers that Michelin is preparing a net-zero transition. COMPANY-SPECIFIC CASE STUDY - SHAREHOLDERS: The number of questions Michelin has received from its institutional shareholders on its 1) carbon trajectory being aligned with the Paris Agreement and 2) capex requirements to achieve decarbonization has tripled since 2019. COMPANY-SPECIFIC CASE STUDY - CUSTOMERS: Between mid-2020 and mid-2021, the Group received specific requests from 5 OEM customers, with worldwide operations, for Michelin to align with their own net-zero objectives by ensuring net-zero emissions in the production of tires (Scopes 1 and 2). Example: In 2020 Mercedes-Benz, a founding member of the Transform to Net Zero initiative, issued a letter of intent to its partners and suppliers, including Michelin, requiring the provision of CO2-neutral products effective 2039. GEOGRAPHICAL IMPACT: This could potentially impact between 4 and 9 production sites located in the EU, Canada, the United States, Mexico, Brazil, Thailand and China.

Time horizon

Long-term

Likelihood

Unlikely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

400000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

The figure reported is an initial estimation made following a major update of the Group risk map in 2020. It encompasses not only the climate change-related risk factor reported here but also all other environmental risk factors in scenarios involving corporate policy not meeting external stakeholder expectations. It therefore represents their combined impacts on operational results from higher cost of capital, loss of revenues from B2B and B2C customers, and outlays for environmental reparations. Moving forward, this particular risk factor stemming from expectations for net zero emissions will be refined in terms of impact scenarios and their potential financial consequences. Estimating financial consequences is an iterative process that requires taking in new information and refining.

Cost of response to risk

44500000

Description of response and explanation of cost calculation

MANAGEMENT OF RISK: 1) The risk is mitigated by a CO2 reduction roadmap and oversight. In 2020 the Environment Governance (EG) body approved a CO2 reduction trajectory for Scopes 1 & 2 aligned with a 1.5 °C scenario to achieve net zero emissions by 2050, covering the worldwide manufacturing base (78 sites). It also approved the technical-financial roadmap to achieve the interim target of -50% from 2010 to 2030. The actionable levers for decarbonization are a/ improving energy efficiency (11 distinct energy efficiency initiatives covering insulation, electrification, closed loops, leak prevention, metering, and process efficiency), b/ reducing the CO2 emission factor (renewable energy, both purchased and on-/off-site projects, coal phase-out at 5 plants), c/ scoping out CCS opportunities. To support implementation, the EG body approved an internal carbon price increase for capex projects from 50 to 100 €/tonne in early 2021. Roadmap implementation is overseen by a network of on-site energy experts and the corporate Energy and CO2 Mitigation Expert Team or EEECO2 which reports on progress 2-3x/yr to the EG body. All key decisions and outstanding issues are reviewed at least 3x/yr between the Group Management Committee and the Group Executive Committee. The Supervisory Board CSR Committee provides an additional high-level review of the CO2 reduction strategy. 2) The risk is controlled by transparently communicating with investors and customers: a/ replies to all investor questions submitted prior to the annual shareholder meeting are published at www.michelin.com, b/ all CO2 targets were communicated as part of the core strategy at Michelin's Capital Markets Day in April 2021, c/ a new sustainability web site was launched in 2021 that covers the climate change strategy, d/ the OEM business team increased its staffing to better handle CO2 reduction requests from its customers. CASE STUDY: As part of its approach to ensure and reinforce shareholder confidence Michelin signed a EUR 2.5bn Multicurrency Revolving Credit Facility with 19 banks in October 2020 linking its pricing to a set of 3 "Sustainability Performance Targets" among which is the reduction of Scope 1&2 greenhouse gas emissions. EXPLANATION OF COSTS OF MANAGEMENT: 38 M€ in average annual Capex for energy

efficiency projects and coal phase-out from 2020-2030; 4 M€ in annual Opex overcost for procuring renewable energy; 2.5 M€ in full-time equivalent staffing (39 FTE at an average cost 51 k€).

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
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Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

RISK DRIVER: Michelin manufacturing operations are subject to carbon taxes and CO2 allowances. Failure to manage the cost of regulatory compliance could drive up operating costs. COMPANY-SPECIFIC CASE STUDY: The European Emissions Trading System (ETS) closed out Phase III in 2020 and entered Phase IV 2021-2025/2026-2030. Phase IV brings an end to the status of "sector exposed to a significant risk of carbon leakage" for the tire industry. For Michelin this translates to a 60% reduction of free CO2 quotas in 2021 compared to 2020, and drawing down to zero free quotas in 2030, with the exception of one site that will retain its protected status. Forecasting indicates that the CO2 market price will increase from 25 €/t in 2020 to 55 €/t in 2025. Even with 2 sites exiting the EU ETS in 2021 (in Spain and France), the residual costs could represent about 2/3 of estimated annual capex required to reduce CO2 emissions across the worldwide manufacturing base, making this a relevant risk. While this risk is not among Michelin's top 11 risk factors, it is part of the Group risk map as a scenario in the environmental risk family falling under "Environmental non-compliance/cost of compliance" and is thus subject to a managed process and oversight. GEOGRAPHICAL IMPACT: Carbon tax in France on the purchase of natural gas and coal covering roughly 35% of Scope 1 emissions from 12 production sites and 1 R&D site; CO2 allowance systems in two jurisdictions -- 18 sites production sites in the European Union and 2 in Shanghai.

Time horizon

Medium-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)

10000000

Potential financial impact figure – maximum (currency)

21000000

Explanation of financial impact figure

The figures represent the estimated annual costs of CO2 allowances from 2021 (minimum impact figure) to 2030 (maximum impact figure). 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. The estimates are based on: 1) projected reductions in CO2 emissions within the scope of 18 concerned plants, taking into account the planned 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; 4) optimizing options for banking, pooling, purchasing and selling.

Cost of response to risk

102000

Description of response and explanation of cost calculation

MANAGEMENT OF RISK: Mitigation and control. The main mitigation measure is to continually reduce CO2 emissions to decrease the number of CO2 allowances required, as detailed in risk 1. The second mitigation measure is to correctly apply the complex set of EU ETS rules to minimize the cost of purchasing CO2 allowances. This along with controlling the risks are under the responsibility of the CO2 Allowances Management Committee (CO2AMC), created in 2005. Comprising specialists 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, track legislation governing carbon markets and taxes in all Michelin host countries, 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 for short- and medium-term time horizons, supported by the public affairs department to anticipate regulatory changes and publication of guidelines. Any issues not resolved by the corporate finance department would be taken to the Environment Governance body and, if necessary, to the Group Management Committee for final decision. CASE STUDY: An example of controlling risks is the preparation done from 2018 to 2020 for the start of Phase IV in 2021: 1) taking into account all 3rd party verification reports on maintaining robust CO2 measurements, monitoring and accounting at 18 plants in Spain, France, Italy, Germany, Poland and Romania; 2) factoring in the rules for annually lowering the allowance ceiling, revising applicable technological benchmarks, applying the criteria for exposed sectors; 3) centralizing and streamlining the process of purchasing CO2 allowances in order to anticipate and lower costs through economies of scale. The result was an optimization of the CO2 allowances management process under which residual costs were accepted and budgeted for 2021 and anticipated through 2030. EXPLANATION OF COSTS OF MANAGEMENT: The estimation represents 2 full-time equivalent personnel per year: 1 FTE representing the CO2AMC and 1 FTE representing the site- and EU-level specialists coordinating bottom-up CO2 emissions monitoring and allowances accounting. The average cost for 1 FTE in 2020 was 51,000 €.

Comment

Identifier

Risk 5

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
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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

RISK DRIVER: Our company has significant geographical coverage for direct operations and throughout the supply chain that could be significantly impacted by higher frequency of storms, floods, drought and other natural hazards exacerbated by climate change. Failure to adapt to these external conditions could cause delays in our supply chain and operations and impact upon our cash flow and revenues. The activities that could be materially impacted by a severe weather event are raw material sourcing, manufacturing and logistics operations, including warehousing and upstream and downstream transportation. As severe weather events are highly variable and unpredictable, the risk was considered as emergent until 2020 when it was integrated in Group risk map. While this risk is not among Michelin's top 11 risk factors, it is now a risk in the environmental risk family falling under "Overall impact of the physical effects of climate change on supply chain and business continuity" and is thus subject to a managed process and oversight. COMPANY SPECIFIC CASE STUDY: Recurring drought in southern Brazil has brought risk of water shortages potentially affecting Michelin manufacturing sites in Campo Grande and Resende. From 2014 to 2016, actions were taken to increase water autonomy: 3x more days at the Resende site, and 2x more days at the Campo Grande site. Measures taken include closing water circuits, reducing evaporation, capturing rainwater, and conducting employee training on water conservation practices, at a cost of 450 k€. GEOGRAPHICAL EXAMPLES: Several Michelin facilities have been impacted in the past 10 years in different geographic regions: more frequent typhoon flooding in the districts surrounding Bangkok, Thailand where 3 plants are located; monsoon flooding the Chennai, India plant in 2015; tornado corridor in the US shifting eastward where more Michelin plants are located. 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 has been at historically low levels in 3 of the last 4 years due to drought.

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, 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

A 1-month stoppage at a manufacturing site has been estimated, depending on the type of site, to cause a drop in production equivalent in value to between approximately 0.05 and 0.2% of net annual sales, corresponding to roughly 10 to 60 M€. However, because production can be substituted from plants elsewhere in the same region or another continent, revenues would rarely be impacted, while transportation costs might increase for imports/exports of the substituted production. Based on the evaluation of impacts of past extreme weather events and other natural disasters, 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. This includes all types of natural catastrophes in a given year. This impact level is considered below the threshold for substantive impact. However, since the inclusion of physical risks of climate change in the Group risk map in 2020, forward-looking climate scenario analysis has begun and will inform a revision of estimations of potential financial impact.

Cost of response to risk

360000

Description of response and explanation of cost calculation

MANAGEMENT OF RISK: Mitigation, control and transfer of residual risk via insurance - see points 1 and 2 below. This risk was added to the Group risk map in 2020 after a full review and update of the environmental risk family. It is managed under the ERM process: a/ a corporate-wide audit to determine maximum possible impact, current risk management practices and residual risk, to be concluded in 2021; b/ identification of off-the-shelf/bespoke risk evaluation methodologies and tools that cover multiple climate change scenarios and that are adapted to Michelin activities. The results of these actions will aid decision-making by the Environment Governance body and inform future ERM responsibilities and actions to mitigate, control, transfer or accept the risk. 1) Mitigation and control - The corporate purchasing department maintains business continuity plans which a/ ensure a diversity of suppliers in number and location for each type of raw material; b/ include a regular review of vulnerability to energy supply disruptions. CASE STUDY: Hurricane Harvey in 2017 - while some suppliers located on the US Gulf Coast were forced to close, Michelin worked with its suppliers in other regions to provide the necessary raw materials with no disruption. 2) Mitigation, control and transfer: With production plants located across 25 countries and 5 continents, extreme weather events patterns have impacted only a few facilities over short time periods (<1 month), without material financial repercussions for the Group. Back-up supplies of finished products can be delivered from other geographic zones, thus limiting risk of shortages. Based the hypothesis that past extreme weather events will increase in frequency, duration and force, business continuity plans are in place. Residual risks are transferred via natural catastrophe insurance policies. CASE STUDY: To control risks following the 2015 monsoon in India, the Chennai plant reinforced emergency management protocols and revised personnel policies to increase the number of employees hired from neighboring locations that remain accessible during flooding, thereby ensuring production continuity. EXPLANATION OF COSTS OF MANAGEMENT: The estimated cost represents 7 FTE required annually, covering regional risk managers, site-level personnel to manage business continuity plans and in-house insurance specialists. The cost for 7 FTE in 2020 was 360,000 €. Insurance costs are confidential and not included.

Comment

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

Yes

C2.4a

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

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Climate change, air pollution, massive urbanization and traffic congestion are leading to strong governmental regulations and to increasing pressure to reduce the environmental impact of mobility. As a result, the needs of our customers around the world are changing at an accelerated pace: the Green Deal in Europe, China's plan for net zero emissions in 2060 and a renewed focus in North America are some examples of the drivers of the change that is impacting the mobility landscape. To comply with increasingly demanding regulations on CO2 emissions, OEMs (car manufacturers) are accelerating the electrification of their vehicles. In 2025, 30% of new vehicles worldwide will be electrified. Multidimensional performances required by an Electric Vehicle (EV) fully plays into Michelin's strengths: 1/To maximize battery range, EV need low rolling resistance (RR) tires: Over the past twenty years, Michelin has improved the energy efficiency of its passenger car tire portfolio by more than 20% with no compromise on safety and longevity. 2/To support the weight of batteries, the EV need larger seat size tires, or the same seat size tire but with higher load carrying capacity. In either case, Michelin tires offer not only low RR, but the durability to withstand the extra weight of the vehicle. 3/EV exhibit high and continuous levels of torque. Higher torque levels create greater demands on both the wear life and durability of a tire. Michelin's historic leadership and expertise in durability and wear will become an even more important differentiator in satisfying the performance requirements. 4/Michelin is addressing through post manufacturing "options", additional performances like MICHELIN ACOUSTIC, a foam which reduces interior noise and, MICHELIN SELFSEAL which allows tread punctures to be self-repaired, so that drivers can enjoy seamless journeys and OEMs can save the space and weight of a spare wheel. Michelin is currently the only tire manufacturer that provides the combined solution to its OEM partners with local manufacturing capabilities around the world. Michelin has adapted its tire offers for the EV market with MICHELIN ENERGY™ EV tire being the first step in a joint R&D program with Renault ZOE. In 2020 R&D teams worked on two eco-designed projects adapted to EVs : The MICHELIN e.Primacy and the Michelin Pilot Sport EV which have been developed with a complete product life cycle analysis.

Time horizon

Short-term

Likelihood

Very likely

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)

550000000

Potential financial impact figure – maximum (currency)

1100000000

Explanation of financial impact figure

The global tire market was estimated at US\$ 167 billion in 2019, with light-vehicle tires accounting for 60% for a total market segment worth US\$100 billion. Michelin's market share was 15%. We estimate that electrified vehicles will account for 20 to 24% of the global passenger cars worldwide in 2030 (source: IHS, rivalry/autonomy scenarios). On this segment, Michelin currently has a market share in original equipment that is 1.5 times higher than our total original equipment market share. We estimate that the loyalty to the Michelin brand for further tire purchases will be higher in electrified vehicles than for ICE vehicles as consumers will perceive the benefits brought by their tires on their driving experience in EV. We take the hypothesis that Michelin's market share on the electrified-cars market could reach from 17,5% (minimum hypothesis) to 22% (maximum hypothesis) on this segment. This could lead to an increase in earnings from US\$ 550 million (minimum hypothesis) to US\$ 1.1 billion (maximum hypothesis) Note: these financial estimates have been officially published in US\$ in the 2020 annual report. Converting them here to euros would not provide a meaningful value given the exchange rate fluctuations.

Cost to realize opportunity

646000000

Strategy to realize opportunity and explanation of cost calculation

Environmental concerns are of critical importance to all Michelin's customers and they are at the core of Michelin's strategy, as expressed in its vision that "Tomorrow, at Michelin, everything will be sustainable". The rapid electrification of the vehicle parc brings with it a demanding balance of performance for tires: rolling resistance to improve battery range, increased wear life to meet higher torque levels, higher load capacity and/or seat sizes to support battery weight/size, solutions to improve interior noise, while reducing environmental impact. CASE STUDY: Michelin R&D teams are currently working on specific projects to improve the rolling resistance of tires. The aim is to make them 20% more energy-efficient by 2030 compared to 2010. Michelin is also developing solutions to use renewable or recycled materials to manufacture its tires, while enhancing their performance even more. Moreover, Michelin's HLC (High Load Capacity) tyres will continue to contribute to increasing OEMs' efficiency by enabling vehicles to carry heavy batteries for their new developed EVs. In 2021, Michelin expanded its leadership by launching two tirelines adapted to EVs: the MICHELIN PILOT

SPORT EV, the first Sport tire designed for electric vehicles, and the Michelin e.PRIMACY, the tire that delivers the best battery range on the market. Vehicle manufacturers are looking for more than just a set of tire performances that allow them to meet demanding governmental regulations. They are also looking for partners that can help them decrease their overall environmental footprint. Michelin is a leader in this domain as well and is out front in areas such as the integration of sustainable materials into its tires, carbon neutrality of its factories and innovative design choices driven by Life Cycle Assessments. 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 2020 corresponds to R&D expenses that stood at €646 million.

Comment

Identifier

Opp2

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

In an optimistic climate warming scenario, it is expected that there will be increased consumer awareness around sustainability and increased demand for sustainable products. In addition, it is expected that regulation and policy requiring companies to reduce carbon emissions will also increase demand for sustainable products. Studies show a 35% increase between 2011 and 2019 among European consumers that are willing to devote part of their purchasing power to sustainable products. In the tire category, consumers are also increasingly concerned about reducing fuel costs and are interested in the role energy efficient tires can play in helping them save money. Otherwise, with growing urbanization, limited access to cities and the development of vehicle sharing and leasing solutions, Fleets will become central players in tomorrow's mobility. Fleets have always valued the right tire choice to ensure safety and to optimize their total cost of ownership. Michelin meets both the economic and environmental needs of consumers and Fleets. All Michelin tyre lines are "made to last" which means they deliver outstanding economic and environmental value to consumers and fleets as they last long and maintain a high level of performance until the end of their life while also delivering fuel savings and reduced CO2 emissions. In 2019, EU institutions have recognized this approach by adding the principle of worn tire testing to the EU regulations in a move endorsed by Michelin. Early replacement of tires leads to the consumption of up to 128 million extra tires in Europe every year, which represents 6.6 million tons of additional CO2 emissions per year and a useless spending of 6.9 billions euros for consumers (EY study, May 2017). In addition, climate change may stimulate consumer demand for tires whose durability, longevity and all-season performance will be highly valued. Michelin is ready to respond to changing customer demand for tire performance capable of responding to changing and new weather conditions. The Michelin's CrossClimate tireline capabilities prevent the need to switch from summer to winter tires and its performances that are "made to last" enables fleets and consumers to enjoy complete safety until the end of the life of the tire, reducing their environmental footprint. In 2020 R&D teams worked on two eco-designed projects : The MICHELIN e.Primacy and the Michelin Pilot Sport EV which have been developed with a complete product life cycle analysis.

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)

1000000000

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\$ 167 billion in 2019, with light-vehicle tires accounting for 60% for a total market segment worth US\$100 billion. Michelin's market share was 15% in 2019 ; an increase in market share of just 1% could represent an increase in earnings of US\$ 1 billion. This is without considering increased demand for tires. Over the medium term, it is estimated that demand for tires by volume will grow by 0% to 2% per year in mature markets and by 2% to 4% in emerging markets (IHS Markit). Note: these financial estimates have been officially published in US\$ in the 2020 annual report. Converting them here to euros would not provide a meaningful value given the exchange rate fluctuations.

Cost to realize opportunity

646000000

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. CASE STUDY: Michelin launched 4 new products over the last 5 years: 1/the all-season Premier A/S tire for the North American market; 2/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/Cross Climate SUV and 4/Agilis Cross Climate for Vans. All these products are designed to perform in extreme temperatures from -30°C to +35°C and rely on Michelin EverGrip technologies, a combination of innovations in material and sculpture. 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. In 2021, Michelin had launched two eco-designed tirelines: The MICHELIN e.Primacy and the Michelin Pilot Sport EV which have been developed with a complete product life cycle analysis to make the best balance of performance for both consumers and the planet. Michelin has also published an Environmental Product Declaration (EPD), the first of its kind in the industry, as proof of the transparency of its design choices and their environmental impact. As a result, MICHELIN e.Primacy is the tyre delivering the lowest fuel consumption (-0.2l/100 kms) and the lowest CO2 emissions of its category (-174kg end of life). It's also the tyre allowing the highest battery range for Electric vehicles (+7%), helping the adoption of a smarter electric mobility. Finally, both products were launched on a CO2 neutral basis at the time of purchase as Michelin will invest in Livelihood funds to offset any CO2 emitted in material extraction, tire production and logistics prior to purchase. This opportunity has been confirmed by the market

response and an industry award. The cost to realize the opportunity in 2020 corresponds to R&D expenses that stood at €646 million.

Comment

Identifier

Opp5

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

In a climate scenario, where global warming is limited to 1.5 degrees, it is expected that there will be a significant shift away from high carbon vehicles and toward green technology such as electric cars and hydrogen-powered cars. Hydrogen is key to achieving Paris Agreement objectives. It's appropriate for all uses and eliminates CO2 emissions, improves air quality and furthers the energy transition. Michelin has been working on this technology for more than 15 years. Michelin Hydrogen strategy currently relies on 3 pillars: • Becoming a global leader in hydrogen fuel cell systems with SYMBIO: In collaboration with Faurecia, SYMBIO is a Faurecia-Michelin Hydrogen Company designed to develop, produce and market hydrogen fuel cell systems for cars, utility vehicles, trucks and other electromobility applications. Created in 2010, SYMBIO aims to become a leader in hydrogen mobility in 2030, selling 200,000 fuel cells stacks per year. • Developing hydrogen mobility on the regional level by simultaneously developing vehicles and infrastructure: Michelin has been actively involved in developing the initiative called Zero Emissions Valley, a public-private partnership between Region Auvergne-Rhone Alpes in France, Michelin and key partners like Engie and financial institutions. • Accelerating the deployment of hydrogen mobility through motorsports which Michelin has always considered as a laboratory for innovation and a showcase for technologies. In June 2020, the Group and Symbio became major partners of MissionH24, a project that is looking to integrate hydrogen-powered technology into endurance race vehicles competing in the 24 Hours of Le Mans in 2024.

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)

1500000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Electric mobility demand is expected to increase significantly between now and 2030, with hydrogen powered vehicles accounting for 2 million vehicles of which 350,000 trucks. As the only zero emission solution that complements battery-powered electric cars, hydrogen technology is essential in accelerating the deployment of electromobility and addressing its three major challenges: improving air quality, reducing CO2 emissions and the energy transition. Mass production is expected in Europe, China, and the United States. SYMBIO, A FAURECIA MICHELIN HYDROGEN COMPANY aims to capture 25% market share and achieve a turnover of around €1.5 billion by 2030.

Cost to realize opportunity

140000000

Strategy to realize opportunity and explanation of cost calculation

To realize this opportunity, SYMBIO targets vehicle segments where hydrogen creates the most value, such as trucks, buses, and light commercial vehicles. CASE STUDY: The roadmap is on track with the deal announced in 2021 by Symbio and Safra to build as many as 1,500 buses to be fitted with an optimized hydrogen system or the Stellantis, Faurecia, and SYMBIO partnership to develop hydrogen fuel cell light commercial vehicles. In 2021, it will be the laying of the foundation stone of one of the largest fuel cell factories in Europe, stating its production in 2023. The objective: Divide the fuel cell cost by a factor of 10. An entity to develop this cutting-edge technology in China is in the process of being registered. To develop hydrogen mobility, it is necessary to develop both hydrogen vehicles and hydrogen refueling infrastructure. Michelin is participating in the development of hydrogen mobility at a regional level, by deploying refueling stations in association with other stakeholders, so as to make this mobility more accessible and usable by many modes of transportation. The "Zero Emission Valley" (ZEV) project clearly illustrates Michelin's deep commitment to the hydrogen sector. Set up by the Auvergne-Rhône-Alpes regional authority in France, and the Engie group, ZEV is a clean mobility solution deployed on a regional scale to make the area the first European hydrogen-powered mobility zone. This will involve installing 20 stations powered by green hydrogen and deploying 1,200 hydrogen-powered vehicles for businesses to use. 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

Identifier

Opp6

Where in the value chain does the opportunity occur?

Upstream

Opportunity type

Resilience

Primary climate-related opportunity driver

Other, please specify (Increased reliability of supply chain and ability to operate under various conditions)

Primary potential financial impact

Other, please specify (Opportunity to develop and transfer knowledge to supply chain: will improve yield as well as having positive human and environmental impact. Contribute to the Group's brand value.)

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 and updated early 2021, 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)

71000000

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\$7.1 billion in 2020. If these actions add 1% to this value, this could represent a potential financial impact of US\$71 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 (updated early 2021), 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 (Rubberway). The Group aims to achieve this mapping for at least 80% of purchased volumes by end 2021. CASE STUDY: 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 totalling 88,000 ha in the provinces of Sumatra and Borneo, which had been devastated by deforestation. 34,000 ha will be planted with rubber trees (end 2020, 23 000 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 49% stake in the JV with Barito Pacific Group that was valued at \$US 55 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) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	No, but we intend it to become a scheduled resolution item within the next two years	We plan to follow the guidelines issued by the TCFD in June 2020 "Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans", including future updates, and the 2018 principles laid out by the Oxford Martin Net Zero Carbon Investment Initiative.

C3.2

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

Yes, qualitative and quantitative

C3.2a

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

Climate-related scenarios and models applied	Details
RCP 2.6	<p>How the scenario was identified, inputs, assumptions, and analytical methods: To set a science-based target for reducing Scope 1 & 2 emissions, Michelin selected in 2018 the IPCC AR5 RCP 2.6 climate scenario and a pathway that limits global warming to 2 °C, the upper range of this scenario, to be compliant with SBTi minimum criteria at the time. The target that was approved by SBTi in April 2020 is as follows: 38% absolute emissions reduction from 2010 to 2030, equivalent to a linear 1.9% reduction per year on average. Ongoing technological and cost feasibility studies covering a broad range of options for 1) improving energy efficiency in manufacturing (11 distinct energy efficiency initiatives covering insulation, electrification, closed loops, leak prevention, metering, and process efficiency) and 2) reducing the CO2 emission factor (renewable energy, both purchased and on-/off-site projects, coal phase-out at 5 plants) enabled the corporate Energy and CO2 Mitigation Expert Team to establish a pathway to a more ambitious target that would be aligned with Michelin's ambition to achieve net zero emissions by 2050. For this reason, Michelin chose the RCP 2.6 lowest range-pathway that limits global warming to 1.5 °C and which corresponds to a goal of net zero emissions by 2050. The modelling under this scenario is both linear and non-linear, the former allowing implementation of known technologies to be planned over time, and the latter for anticipating technological/market/socio-economic conditions, particularly in the area of renewable energy availability. The actionable levers for decarbonization are a/ improving energy efficiency (11 distinct energy efficiency initiatives covering insulation, electrification, closed loops, leak prevention, metering, and process efficiency), b/ reducing the CO2 emission factor (renewable energy, both purchased and on-/off-site projects, coal phase-out at 5 plants), c/ scoping out CCS opportunities. Time horizon: 2021-2030. This horizon is relevant because the capex requirements must be detailed sufficiently to anticipate them in the next two 5-year strategic planning cycles. Areas of the organization considered in the scenario analyses: The worldwide manufacturing base, which constitutes 95% of all Scope 1&2 GHG emissions. Results of the scenario analysis: A new target of 50% absolute emissions reduction from 2010 to 2030, equivalent to a 2.5% reduction per year on average, was developed with a detailed technical and cost roadmap of levers to implement, with a priority on optimizing energy efficiency, and complemented by gradual ramping up of renewable energies. How the scenario analysis results informed business objectives and strategy: The new interim 2030 interim target was approved by the Environment Governance body and publicly announced in its 2020 annual report. In addition, the Environment Governance body approved the emission reduction levers and the capex and opex forecast to 2030, which together constitute the Target Roadmap. The Target Roadmap is the basis for the corporate manufacturing division to set its 5-year strategic plan. Case study of how the scenario analysis results directly influenced business objectives and strategy: The first scenario analysis done in 2018 provided a solid basis to begin planning and implementing the identified actionable levers. The manufacturing division began acting on worldwide market studies produced by the corporate Energy and CO2 Mitigation Expert Team that identified opportunities in on-site renewable power. As a result, in 2020, solar power units were commissioned at 3 manufacturing plants: in Phrapadaeng and Laem Chabang, Thailand, with full-year capacity of the entire installation rated at around 1,500 MWh; and in Chennai, India, 4.2 MWP of rooftop photovoltaic panels providing an annual output rated at 5,500 MWh, or 10% of the facility's needs.</p>

C3.3

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

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Rationale: Michelin's predominant products in terms of sales revenues are tires for a multitude of uses (passenger car, truck & bus, two-wheel, off-road). Regardless of type, the use phase represents between 70 and 97% of the life cycle CO2 emissions of tires. The same is true for the use phase of vehicles. As downstream mobility users seek opportunities to reduce their CO2 footprint, Michelin has opportunities to develop product and service offers that deliver CO2 reductions to its customers. Beyond tires, opportunities for low-carbon mobility have given momentum to developing new products and services. How strategy has been influenced: Climate change opportunities stemming from regulation and extreme weather have reinforced historic activities: a/ continued development of long-lasting, energy-efficient tires to benefit from thresholds and grading for tire energy efficiency and vehicle emission standards, mainly in Europe and Japan (mitigation-related activity); b/ innovative offers for fleets to improve fuel efficiency (mitigation-related); and c/ all-weather tires (adaptation-related). The historic activity strategy is articulated over the medium-term time horizon. Opportunities for low-carbon mobility, mainly from regulation and changing market expectations (investors, customers) coupled with risks from limited resources have influenced strategy: new business ventures have been launched around hydrogen-powered mobility, transport-as-a-service, and advanced materials built on closed- and open-loop models for using end-of-life tires and diverse plastic wastes as feedstock. Case study of a substantial strategic decision: Opportunities for new low-carbon mobility (mitigation-related) have confirmed a long-term strategy: In early 2019, following 15 years of R&D in hydrogen fuel cells and building public & private partnerships, Michelin made a strategic decision to enter this emerging market by acquiring Symbio and joining with Faurecia to create a joint venture with an initial investment of €140 million. Known as Symbio, A Faurecia Michelin Hydrogen Company, the JV will develop, produce and market hydrogen fuel cell systems for cars, utility vehicles, trucks and other electromobility applications. Symbio's 2030 objective: produce 200,000 hydrogen systems a year. In France, a new plant is expected to come on stream in Saint-Fons (in the Rhône region) by 2023.
Supply chain and/or value chain	Yes	Rationale: The CO2 footprint from raw materials, transportation & distribution, and end-of-life treatment is significant, account for virtually all of Scope 3 emissions, excluding the use phase of products and services. Reducing emissions in these areas represents an opportunity to generate new efficiencies as well as revenue streams and meet external stakeholder expectations. At the same time, acute physical impacts from extreme weather events present an increasing risk to supply chain operations. How strategy has been influenced: 1/ Michelin has aligned its Scope 3 CO2 reduction targets with the Paris Agreement. Two targets have been set and approved by SBTi, one for suppliers of raw materials and the other for transport and end-of-life treatment. The time horizon for the raw material suppliers target is short-term (2024) and for the other targets medium-term (2030). 2/ Climate-related risks were fully integrated into the Group risk map in 2020, aligned with TCFD risk types. Potential for impact in the supply chain from extreme weather events is identified as one of the main risk factors. Case studies of substantial strategic decisions: 1/ To deliver CO2 reductions in the upstream value chains, Michelin coordinated the launch of a major European project: BlackCycle. The 13-member public-private consortium aims to create a closed loop for producing tires: collection of end-of-life tires and selection of feedstock, optimization of pyrolysis, refining and recovery of the oil, optimization of the kiln processes and performance evaluation of the sustainable tires produced with the recovered materials. The project's goal is to reduce the CO2 emission factor of key raw materials by 30%. 2/ Following a complete update of the Group risk map in 2020 for the environmental risk family, the Chief Risk Officer and Chief Sustainability Officer jointly ordered a corporate-wide audit of acute and chronic physical risks related to climate change covering all operations, direct and indirect with value chain partners, to determine maximum possible impact, current risk management practices and residual risk, to be concluded in 2021.
Investment in R&D	Yes	Rationale: The CO2 footprint of tires and different forms of mobility is predominantly in the use phase, along with significant emissions to produce raw materials. To develop product and service offers that deliver CO2 reductions, investment in R&D is essential. How strategy has been influenced: 1/ Existing opportunities have been maintained and expanded in 3 strategic growth pillars encompassing: a/ continual improvement of tire energy efficiency, b/ resource-saving, low-carbon services and solutions for fleets, and c/ innovations in new power trains (e.g., hydrogen fuel cell). This strategy will continue over the medium time horizon. In 2020, R&D projects: In 2020, around 18% of the total R&D budget was allocated to continuously improving tire energy efficiency and developing hydrogen mobility technologies. 2/ New opportunities: The challenges of reducing the use of fossil fuels and materials derived from them has highlighted opportunities to develop high-performance materials from renewable or recycled feedstock. Investor and customer expectations have also driven changes at the strategic level. This context lead Michelin in 2016 to establish the area of advanced materials as one of its 4 strategic pillars for growth over the medium time horizon. To underpin the strategy, the Group set a long-term objective of using 100% sustainable materials in 2050 and a medium-term target of 40% in 2030. Case study of a substantial strategic decision: In 2020 Michelin launched a 5-year R&D project called "EMPREINTE" ("Footprint") with a budget of €74.6M, including €13.4M of French government aid and 4 objectives: a/ develop new materials derived from waste recovery and develop new processes to obtain them, focusing on polymers, fillers, chemicals and metal reinforcements; b/ design and develop sustainable tires that integrate these new materials, while guaranteeing performance suitable for tomorrow's vehicles and new mobility uses; c/ optimize the impact of tire use through connectivity and predictive maintenance and develop new mobility services; d/ optimize tire assembly processes to adapt to these new products through a flexible, efficient and economically viable manufacturing process.
Operations	Yes	Rationale: Climate change risk and opportunities, particularly around regulatory changes, rising energy costs, increased availability of renewables and increasing societal expectations for corporate stewardship, have changed how Michelin sources and uses energy in its manufacturing and logistics operations. How strategy has been influenced: 1) Michelin has aligned its Scope 1, 2 & 3 CO2 reduction targets with the Paris Agreement, and they have approved by SBTi. The time horizon for the Scopes 1&2 target is medium-term (2030) and for the 2 Scope 3 targets short-term (2024) and medium-term (2030), respectively. These targets are the foundation of emission reduction roadmaps that identify actionable levers, costs and implementation timeframe. The roadmaps are validated by the Environment Governance body. They serve as key inputs to the 5-year strategic planning process for the manufacturing and supply chain operations corporate divisions. 2) Climate-related risks were fully integrated into the Group risk map in 2020, aligned with TCFD risk types. Potential for impact in on operations (manufacturing plants, logistics warehouses, and transportation routes) from extreme weather events is identified as one of the main risk factors. Case studies of substantial strategic decisions: a/ To reduce CO2 reductions in logistics operations, Michelin signed a letter of commitment in early 2021 for maritime transport with NEOLINE, a French shipowner relying on main propulsion by wind energy for its 136m-long cargo ships equipped with 4200 m2 of sails. The commitment encompasses the transport of Michelin-produced tires loaded in containers from Halifax (Canada) to Saint-Nazaire - Montoir de Bretagne (France) on the first transatlantic line to be opened by NEOLINE in 2023. With the arrival of a second vessel, scheduled a year later, the Michelin will gradually entrust NEOLINE with at least 50% of the group's containers transported on this line. b/ Following a complete update of the Group risk map in 2020 for the environmental risk family, the Chief Risk Officer and Chief Sustainability Officer jointly ordered a corporate-wide audit of acute and chronic physical risks related to climate change covering all operations, direct and indirect with value chain partners, to determine maximum possible impact, current risk management practices and residual risk, to be concluded in 2021.

C3.4

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

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Capital allocation Acquisitions and divestments Access to capital Assets	<p>Revenues: Risks and opportunities are inherent in rapidly evolving mobility markets in which B2B and BCB preferences and behaviour can drive the willingness to pay for low carbon products and services upwards or downwards thereby influencing revenues. Case study: Opportunities for low carbon products and services have influenced revenues in a positive direction. As a market leader in connected tires and digital fleet management, Michelin offers its fleet customers services and solutions to reduce their carbon footprints, in addition to other key benefits (e.g., enhancing safety performance, simplifying maintenance). The goal for the services and solutions business unit has been to double revenue over 5 years, by new and expanded fleet management solutions. Pressure to decarbonize will lead to increasing needs from fleets for such service, thus increasing Michelin future revenues. Sales of tire-related services and solutions totaled €986 M in 2020, versus €1,124 M in 2019, adversely affected in part by the closing of dealerships during the pandemic lockdowns. As of 2020 1.2 M vehicles are under contract in 15 countries. Time horizon: short-term. Direct & indirect costs: This element is influenced by the CO2 reduction roadmap approved by the Environment Governance body and the risk of not meeting external stakeholder expectations for net zero emissions. Direct costs come from projects to reduce energy consumption and procurement of renewable energy, and indirect costs from CO2 allowances and carbon taxes. Case study: The future purchase of CO2 allowances under the European ETS (actual costs of €4 M in 2020 and increasing to an estimated € 17M in 2023) for 18 production sites and potential additional costs expected in the medium-term under the China ETS system. Each year the 5-year strategic plan for the manufacturing division, broken down by geographic regions, is reviewed and readjusted to include such expenses. Forecasted increases in CO2 allowances are determined by the CO2 Allowances Management Committee, a cross-functional team tasked with optimizing compliance costs. The committee communicates its findings directly to the manufacturing sites that would be impacted so that the forecasts can be balanced with capex and opex for projects to reduce energy consumption and CO2 emissions. The optimal strategy from a financial and CO2 reduction perspective can be integrated into the sites' 5-year strategic plan. Time horizon: short-term Capital expenditures: Capex planning is influenced by the CO2 reduction roadmap approved by the Environment Governance body and the risk of not meeting external stakeholder expectations for net zero emissions. Case study: To guarantee annual progress against CO2 reduction targets and anticipate regulatory costs of CO2 emissions, Michelin raised the internal carbon price from 50 to 100 €/metric ton CO2, approved by the Environment Governance body in 2021. Project leaders must submit 2 scenarios, with and without the internal carbon price. Project sponsors 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. The internal price is regularly reviewed based on analysis of external carbon pricing trends. Time horizon: short-term Capital allocation: This element is influenced by the CO2 reduction roadmap approved by the Environment Governance body and the risk of not meeting external stakeholder expectations for net zero emissions. Managing this risk thus involves allocating capital at the corporate level for manufacturing operations and logistics operations. Case study: An annual target is set for investments in manufacturing energy efficiency projects, between € 15 and € 25 million. Each year the 5-year strategic plan at regional manufacturing level is reviewed and readjusted 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 & 2 of -50% in absolute value (2010 baseline), approved by SBTi. Time horizon: medium-term Acquisitions and divestments: Financial planning is influenced by Michelin's strategy to grow "around tires and beyond tires" which takes into consideration risks and opportunities driven by evolving market needs to reduce materials extraction – and the associated carbon footprint – and the carbon footprint of products and services particularly in the use phase. Case study: In the last 3 years investments have been made in innovative materials and services with the capacity to deliver CO2 reductions to downstream users: a/ acquisition of Lehigh Technologies, specializing in micronized rubber powders derived from recycled end-of-life tires and other rubber-based industrial products, and Sascar, NexTraq and Masternaut, providing digital technologies that enable more efficient movement of goods and people; b/ joint venture with Faurecia to create Symbio, a leader in hydrogen-powered mobility; strategic partnerships with Enviro, Carbios and Pyrowave to develop innovation recycling technologies around waste plastics and end-of-life tires. Individual investments since 2014 have ranged from 10M € to 400M €. Time horizon: short-term Access to capital: This element is influenced by the risk of negative shareholder feedback regarding corporate climate change strategy. Michelin regularly discusses the sustainability strategy with shareholders and potential investors. Given Michelin's strong ESG 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. Case study: Michelin uses its ESG status as an opportunity. In 2020, the Group signed a EUR 2.5bn Multicurrency Revolving Credit Facility with a group of 19 banks, linking its pricing to a set of 3 "Sustainability Performance Targets" among which the reduction of Scope 1&2 greenhouse gas emissions. Time horizon: short-term Assets: This element is influenced by the CO2 reduction roadmap approved by the Environment Governance body and the risk of not meeting external stakeholder expectations for net zero emissions. Case study: Michelin has 4 production sites that use steam produced from coal-fired boilers, 3 in Europe, 1 in North America. The boilers are potentially stranded assets under climate change scenarios compatible with the Paris Agreement. Michelin is pursuing its coal exit strategy for manufacturing to achieve a 50% reduction of CO2 emissions from 2010-2030. Annual capital investment required ranges from €6 M to €15 M per year, depending on the coal replacement choices made. Time horizon covered: medium-term (2018-2030).</p>

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

C4.1

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

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

2018

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)

2462704

% of target achieved [auto-calculated]

96.0094891435295

Target status in reporting year

Underway

Is this a science-based target?

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

Target ambition

2°C aligned

Please explain (including target coverage)

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 (abs1). To date Michelin is on track to meet this scope 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 (Abs2). A new intermediary target, in line with the new 2050 target, was set in the second half of 2020 to guide this process, based on a linear reduction pathway (Abs3). Alignment with 2DS : This target is aligned with SBTi 2DS because it commits the Group to reach net zero no later than 2050 and comes with a mid term (2030) target involving a pace of progress better than 1.23 percent per year. 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, until the end of 2020, our short term, non-submitted to SBTi 2020 target was 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.

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

2050

Targeted reduction from base year (%)

100

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

0

Covered emissions in reporting year (metric tons CO2e)

2462704

% of target achieved [auto-calculated]

36.4836058745412

Target status in reporting year

Revised

Is this a science-based target?

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

Target ambition

Other, please specify (Race to Zero - Business Ambition for 1.5°C)

Please explain (including target coverage)

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 (abs1). To date Michelin is on track to meet this scope 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 (Abs2). A new intermediary target, in line with the new 2050 target, was set in the second half of 2020 to guide this process, based on a linear reduction pathway (Abs3). Alignment with Race to Zero - Business Ambition for 1.5°C : This target is aligned with Race to Zero - Business Ambition for 1.5°C (option 2) because it commits the Group to reach net zero no later than 2050 and comes with a mid term (2030) SBTi WB2D target involving a pace of progress better than 2.5 percent per year. 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. or simplicity reasons in our internal communication and target setting, until the end of 2020, our short term, non-submitted to SBTi 2020 target was 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.

Target reference number

Abs 3

Year target was set

2020

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 (%)

50

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

1938636.5

Covered emissions in reporting year (metric tons CO2e)

2462704

% of target achieved [auto-calculated]

72.9672117490824

Target status in reporting year

New

Is this a science-based target?

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

Target ambition

Well-below 2°C aligned

Please explain (including target coverage)

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 (abs1). To date Michelin is on track to meet this scope 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 (Abs2). A new intermediary target, in line with the new 2050 target, was set in the second half of 2020 to guide this process, based on a linear reduction pathway (Abs3). Alignment with WB2D : This target is aligned with SBTi WB2D because it involves a pace of progress better than 2.5 percent per year. Besides, it comes with a net-zero target no later than 2050 (Abs 2) so it is also aligned with Race to Zero - Business Ambition for 1.5°C. 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. or simplicity reasons in our internal communication and target setting, until the end of 2020, our short term, non-submitted to SBTi 2020 target was 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.

Target reference number

Abs 4

Year target was set

2019

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

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.)

Base year

2018

Covered emissions in base year (metric tons CO2e)

5166278

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

90

Target year

2030

Targeted reduction from base year (%)

15

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

4391336.3

Covered emissions in reporting year (metric tons CO2e)

4928025

% of target achieved [auto-calculated]

30.744635370635

Target status in reporting year

Underway

Is this a science-based target?

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

Target ambition

2°C aligned

Please explain (including target coverage)

The result reported here is an approximation, given the high levels of uncertainty in Scope 3 accounting, which range from +/-10% to +/-30% depending on the Scope 3 category, The Scope 3 inventory undergoes continuous improvement in methodology and quality of data.

C4.1b

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

Target reference number

Int 1

Year target was set

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)

0.87

% of target achieved [auto-calculated]

100.09765625

Target status in reporting year

Achieved

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

<Not Applicable>

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). In 2019, the Group reached a 102% completion (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. The corresponding decrease in absolute value was over 25 percent. In 2020, The ratio of CO2 emitted per tonne of finished product stood at 0.87 in 2020, down 29.9% on 2010. The ratio was relatively unchanged year-on-year, with a slight 0.6% gain demonstrating resistance to the steep 16.2% decline in output due to the Covid crisis.

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

-8.7

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

45.27

% of target achieved [auto-calculated]

118.25

Target status in reporting year

Achieved

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

<Not Applicable>

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.

C4.2

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

Target(s) to increase low-carbon energy consumption or production

Net-zero target(s)

Other climate-related target(s)

C4.2a

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

Target reference number
Low 1

Year target was set
2020

Target coverage
Company-wide

Target type: absolute or intensity
Absolute

Target type: energy carrier
Electricity

Target type: activity
Consumption

Target type: energy source
Renewable energy source(s) only

Metric (target numerator if reporting an intensity target)
Percentage

Target denominator (intensity targets only)
<Not Applicable>

Base year
2010

Figure or percentage in base year
0.2

Target year
2030

Figure or percentage in target year
45

Figure or percentage in reporting year
14.6

% of target achieved [auto-calculated]
32.1428571428571

Target status in reporting year
Underway

Is this target part of an emissions target?
Abs 1, 2 and 3

Is this target part of an overarching initiative?
Science-based targets initiative

Please explain (including target coverage)
This target has not been set as a target in itself, but as a projection of what will be needed to reach our targets in absolute value by 2030 (Abs 3) 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 criterias. The target is part of our new 2030 target (Abs 3, in line with SBTi WB2D criteria but not validated), as well as of our 2030 current SBTi target (Abs1, validated by SBTi as 2DS) and of our 2050 target to reach zero net CO2 emission vs 2010 (Abs 2, in line with Race to Zero - Business Ambition for 1.5°C).

C4.2b

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

Target reference number
Oth 1

Year target was set
2019

Target coverage
Company-wide

Target type: absolute or intensity
Intensity

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

Energy consumption or efficiency	GJ
----------------------------------	----

Target denominator (intensity targets only)

Other, please specify (metric ton of semi-finished and finished product)

Base year

2019

Figure or percentage in base year

4.398

Target year

2030

Figure or percentage in target year

3.346

Figure or percentage in reporting year

5.378

% of target achieved [auto-calculated]

-93.1558935361218

Target status in reporting year

New

Is this target part of an emissions target?

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).

Is this target part of an overarching initiative?

Science Based Targets initiative

Please explain (including target coverage)

In 2020, the Group's energy consumption stood at 5,378 GJ per tonne of semi-finished product+finished product, up by 22,3% on 2019. The 2020 performance was severely impacted by the Covid-19 crisis, with tire production volumes declining by 16.2% over the year making it difficult to reach the performance levels expressed as a ratio. Given that a proportion of consumed energy is fixed, it could not be reduced in line with the contraction in production volumes. However, this major crisis forced the plants to work on their fixed energy use, which enabled local teams to gain a better understanding of the sensitivity of the process to wide swings in output and to improve their ability to manage facility shutdown and restart procedures. Our energy efficiency targets are a fundamental part of our SBTi target and 2050 Net Zero target. Our approach towards Scope 1 and 2 net zero emissions is based on a hierarchy of drivers defined as follows : 1. AVOID: a. Challenge the needs (design and sizing) / b. Create the " Energy saving culture" 2. REDUCE: Do more for less. Insulation, automation, more efficient equipment. 3. REUSE: Close loops. Condensate returns 4. RECYCLE: Capture calories for another usage. Double flow air ventilation. Heat pumps. 5. RENEW: Use renewable energy.

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)

Engagement with suppliers	Other, please specify (Percentage of suppliers obtaining "confirmed" status through EcoVadis (>45 score))
---------------------------	---

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. End of 2020 the results, both in terms of number of suppliers and percentage of suppliers at or above Group's standards, have surpassed the goals, as 84% of the 828 scored suppliers obtained the "confirmed" status.

Target reference number

Oth 3

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)

Land use change	hectares reforested
-----------------	---------------------

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.

Target reference number

Oth 4

Year target was set

2020

Target coverage

Company-wide

Target type: absolute or intensity

Intensity

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

Other, please specify	Other, please specify (scope 3 category 1 emissions allocated to suppliers which have set a science-based target)
-----------------------	---

Target denominator (intensity targets only)

Other, please specify (scope 3 category 1 emissions)

Base year

2019

Figure or percentage in base year

0

Target year

2024

Figure or percentage in target year

70

Figure or percentage in reporting year

13

% of target achieved [auto-calculated]

18.5714285714286

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?

Science Based Targets initiative

Please explain (including target coverage)

This target is part of the SBT target that has been approved by the SBTi. The approved target is the following : "Michelin commits that 70% of its suppliers by emissions covering purchased goods and services will have science-based targets by 2024." Purchased goods and services emissions are represented by the Scope 3 category 1 emissions, per GHG protocol.

C4.2c**(C4.2c) Provide details of your net-zero target(s).****Target reference number**

NZ1

Target coverage

Company-wide

Absolute/intensity emission target(s) linked to this net-zero target

Abs2

Target year for achieving net zero

2050

Is this a science-based target?

Yes, but we have not committed to seek validation of this target by the Science Based Targets initiative in the next 2 years

Please explain (including target coverage)

1/ The target is company-wide for scopes 1 and 2, except the 5 percent exclusion accepted by SBTi. 2/ 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 (abs1). Since then, Michelin has set a new long-term ambition to reach Net Zero Emission on scopes 1 and 2 by 2050 (Abs2). A new intermediary target, in line with the new 2050 target, was set in the second half of 2020 to guide this process, based on a linear reduction pathway (Abs3). We aim at reaching both targets (2050 and 2030) on scopes 1 and 2 without offsetting (compensation). Using sustainably sourced biomass to produce thermal energy is part of our strategy 3/ Alignement with WB2D : This target is aligned with SBTi WB2D because it commits the Group to reach net zero no later than 2050 and comes with a mid term (2030) target involving a pace of progress better than 2.5 percent per year.

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

Yes

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

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	23	609000
To be implemented*	45	64000
Implementation commenced*	4	12000
Implemented*	4	24169
Not to be implemented	0	0

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

Energy efficiency in buildings	Heating, Ventilation and Air Conditioning (HVAC)
--------------------------------	--

Estimated annual CO2e savings (metric tonnes CO2e)

1768

Scope(s)

Scope 1

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

172000

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

530000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

Initiative category & Initiative type

Energy efficiency in buildings	Lighting
--------------------------------	----------

Estimated annual CO2e savings (metric tonnes CO2e)

1790

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

418000

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

2296000

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

Initiative category & Initiative type

Energy efficiency in production processes	Waste heat recovery
---	---------------------

Estimated annual CO2e savings (metric tonnes CO2e)

4245

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

377000

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

1014000

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

Initiative category & Initiative type

Energy efficiency in production processes	Cooling technology
---	--------------------

Estimated annual CO2e savings (metric tonnes CO2e)

79

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

19000

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

102000

Payback period

4-10 years

Estimated lifetime of the initiative

6-10 years

Comment

Initiative category & Initiative type

Energy efficiency in production processes	Compressed air
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

973

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

227000

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

1248000

Payback period

4-10 years

Estimated lifetime of the initiative

6-10 years

Comment

Initiative category & Initiative type

Energy efficiency in production processes	Reuse of water
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

496

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

116000

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

636000

Payback period

4-10 years

Estimated lifetime of the initiative

6-10 years

Comment

Initiative category & Initiative type

Energy efficiency in production processes	Reuse of steam
---	----------------

Estimated annual CO2e savings (metric tonnes CO2e)

7908

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

702000

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

1890000

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment**Initiative category & Initiative type**

Energy efficiency in production processes	Smart control system
---	----------------------

Estimated annual CO2e savings (metric tonnes CO2e)

1408

Scope(s)

Scope 1

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

137000

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

422000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment**Initiative category & Initiative type**

Energy efficiency in production processes	Motors and drives
---	-------------------

Estimated annual CO2e savings (metric tonnes CO2e)

573

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

134000

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

735000

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment**Initiative category & Initiative type**

Other, please specify	Other, please specify (Utilities)
-----------------------	-----------------------------------

Estimated annual CO2e savings (metric tonnes CO2e)

4775

Scope(s)

Scope 1

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

424000

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

1141000

Payback period

1-3 years

Estimated lifetime of the initiative

>30 years

Comment

Initiative category & Initiative type

Company policy or behavioral change	Other, please specify (Change management on site)
-------------------------------------	---

Estimated annual CO2e savings (metric tonnes CO2e)

155

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

15000

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

47000

Payback period

1-3 years

Estimated lifetime of the initiative

Ongoing

Comment

C4.3c

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

Method	Comment
Dedicated budget for energy efficiency	In 2020, the energy efficiency improvement program was supported by €12.35 million in capital expenditure in 2020.
Internal price on carbon	In 2015, the Group made the decision to introduce an internal CO2 price in its return on investment (ROI) analysis tools as a decisionmaking element. As of 2016, the price has been set at €50 per ton of CO2. In April 2021, it was updated to €100 per ton of CO2.
Other (Engagement with energy project managers.)	Method: Engagement with energy project managers. On each energy-saving project, the impact of CO2 reductions on the Michelin Environmental Footprint (MEF) is highlighted.
Other (Energy portfolio oversight.)	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.
Financial optimization calculations	In 2020, Michelin initiated an exercise to place a monetary value on its environmental impacts, starting with the ones addressed by commitments to the planet. Undertaken as part of the "All Sustainable" vision, the exercise is designed to facilitate the representation of environmental issues, enhance transparency with stakeholders and provide a valuation method for use in assessing the performance of Group units or during acquisitions. The initial valuation, whose methodology is described below, was performed on the basis of volumes in 2019, which was chosen as a baseline because it was the last year before the health crisis. These volumes are as follows: - Total tonnes of CO2 emissions in Scopes 1 and 2. - Total tonnes of CO2 emissions in part of Scope 3, covering the upstream and downstream transportation and distribution of natural rubber, semi-finished products and finished products. More info in Michelin 2020 URD, page 231

C4.5

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

Yes

C4.5a

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

Level of aggregation

Group of products

Description of product/Group of products

Low rolling resistance truck, passenger car and light truck tires.

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

Avoided emissions

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

Other, please specify (EU Tyre Labelling Regulation (EC/1222/2009)))

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

46

% of total portfolio value

<Not Applicable>

Asset classes/ product types

<Not Applicable>

Comment

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 2020 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 2020 sales of "Automotive and related distribution" and "Road transportation and related distribution" segments.

C5. Emissions methodology

C5.1

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

Scope 1

Base year start

January 1 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 for the 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 boundary. 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.

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

C6. Emissions data

C6.1

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

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)

1204534

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

The 2020 emission values of scopes 1 and 2 disclosed here are different from those published in the Universal Registration Document (URD) 2020. We have detected an error in the distribution between the two scopes after the publication of the document. The correct 2020 values and a clarification note will be published on URD 2021. This CDP disclosure takes into account the corrections made. The total emissions (Scope 1 + Scope 2) value is correct in the URD 2020 and this disclosure.

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

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

Reporting year

Scope 2, location-based

1589000

Scope 2, market-based (if applicable)

1258170

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

The 2020 emission values of scopes 1 and 2 disclosed here are different from those published in the Universal Registration Document (URD) 2020. We have detected an error in the distribution between the two scopes after the publication of the document. The correct 2020 values and a clarification note will be published on URD 2021. This CDP disclosure takes into account the corrections made. The total emissions (Scope 1 + Scope 2) value is correct in the URD 2020 and this disclosure.

C6.4

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

Yes

C6.4a

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

Source

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 represents 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

(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 v1.4; 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 good 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. All purchases were assessed with an emission factor. Simplifications of modeling remain highly reduced. The results quality is therefore also considered high.

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 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, 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 WTT, 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 carbone. Upstream fuel emission factors are sourced from ADEME Base Carbone. 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 either 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 landfilled 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 8 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 Carbone 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 ICCT 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

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

149537012

Emissions calculation methodology

The figure reported here is well-to-wheel (WTW). In the 2020 Universal Registration Document Michelin reported tank-to-wheel (TTW) emissions. 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/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. 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.

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

0

Please explain

End of life treatment of sold products

Evaluation 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 to the "Global ELT Management" report. The report covers 14 different geographical areas, representing 83.5 % 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).

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

0

Please explain

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

<Not Applicable>

Emissions calculation methodology

<Not Applicable>

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

<Not Applicable>

Please explain

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 it's 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

Not evaluated

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

Not evaluated

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.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	22827	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 biosources are deemed to grow, as they will replace a part of our fossil fuels.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.0001203

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

2462704

Metric denominator

unit total revenue

Metric denominator: Unit total

20469000000

Scope 2 figure used

Market-based

% change from previous year

0.53

Direction of change

Decreased

Reason for change

Due to 2020 context (covid crises), a decrease in CO2 emissions (numerator) was combined with a decrease in total revenue (net sales) (denominator). The health crisis and the lockdowns imposed in most countries sharply curtailed economic activity in the first half, causing a steep drop in tire demand; Sales ended the year at €20 billion, down 15% due to the 14% decline in volumes;

Intensity figure

0.869

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

2462704

Metric denominator

metric ton of product

Metric denominator: Unit total

2834257

Scope 2 figure used

Market-based

% change from previous year

0.63

Direction of change

Increased

Reason for change

Due to 2020 context (covid crises), a decrease in CO2 emissions (numerator) was combined with a decrease in total revenue (net sales) (denominator). Some activities were stopped during several weeks. The 2020 performance was severely impacted by the Covid-19 crisis, with tire production volumes declining and making it difficult to reach the performance levels expressed as a ratio. However, this major crisis forced the plants to work on their fixed energy use, which enabled local teams to gain a better understanding of the sensitivity of the process to wide swings in output and to improve their ability to manage facility shutdown and restart procedures.

C7. Emissions breakdowns

C7.1

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

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
Europe	732179
Asia, Australasia	16196
Americas	456159

C7.3

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

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
Production of passenger car and light truck tires, in Europe	466805
Production of truck tires, in Europe	102071
Production of two-wheel vehicles, aviation, agriculture and earth-moving engines, heavy-duty equipment, worldwide	78129
Production of semi-finished products to make all types of tires marketed by Michelin	278898
Research and develop activities, including testing tracks	10310
Production of passenger car and light truck tires, in North America	173362
Production of truck tires in North America and all kinds of tires in South America	80092
Production of all kinds of tires in Asia	14868

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Europe	454269	126027	1875534	1373265
Asia, Australasia	507485	504896	1044583	4134
Americas	627247	627247	1924742	48157

C7.6

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

C7.6a

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

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Production of passenger car and light truck tires, in Europe	308193	84362
Production of truck tires, in Europe	116657	39926
Production of two-wheel vehicles, aviation, agriculture and earth-moving engines, heavy-duty equipment, worldwide	71140	58718
Production of semi-finished products to make all types of tires marketed by Michelin	128575	118177
Research and develop activities, including testing tracks	18623	13764
Production of passenger car and light truck tires, in North America	423002	423002
Production of truck tires in North America and all kinds of tires in South America	93059	93059
Production of all kinds of tires in Asia	429751	427163

C7.9

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

Decreased

C7.9a

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

	Change in emissions (metric tons CO ₂ e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	5800	Decreased	0.2	Calculation method: $(-5800/2\ 919\ 165)=0,20\%$ In 2020, three new solar power units came on line : 1/in Phrapadaeng and Laem Chabang, Thailand, the 0.99 MWp photovoltaic panels installed on the plant rooftop and the parking lot shade roofs were commissioned in the first half. Over the year, they generated a total of 700 MWh of power, with full-year capacity of the entire installation rated at around 1,500 MWh; 2/ in Chennai, India, 4.2 MWp of rooftop photovoltaic panels came on line in June 2020 and generated 2,300 MWh of power used entirely on-site. Annual output is rated at 5,500 MWh, or 10% of the facility's needs;
Other emissions reduction activities	91052	Increased	3.12	Calculation method : $91\ 052/2\ 919\ 165 = + 3,12\%$ Degradation of energy efficiency ratio In 2020, the Group's energy consumption stood at 12.36 GJ per tonne of finished product, down 14.1% on 2010 but up 3.7% year-on-year. The 2020 performance was severely impacted by the Covid-19 crisis, with tire production volumes declining by 16.2% over the year making it difficult to reach the performance levels expressed as a ratio. Given that a proportion of consumed energy is fixed, it could not be reduced in line with the contraction in production volumes. However, this major crisis forced the plants to work on their fixed energy use, which enabled local teams to gain a better understanding of the sensitivity of the process to wide swings in output and to improve their ability to manage facility shutdown and restart procedures. The progress made through the energy efficiency initiatives (decrease in 24,169 tonnes) was overwhelmed by the negative volume effect, resulting in a strong decrease in energy efficiency.
Divestment		<Not Applicable >		The impact of divestment and acquisitions is taken into account through the change in energy efficiency combined with the change in output.
Acquisitions		<Not Applicable >		The impact of divestment and acquisitions is taken into account through the change in energy efficiency combined with the change in output.
Mergers		<Not Applicable >		
Change in output	471765	Decreased	16.16	Calculation method : $-471\ 765/2\ 919\ 165 = -16,16\%$ The drop in output is due to the Covid crisis.
Change in methodology		<Not Applicable >		
Change in boundary		<Not Applicable >		
Change in physical operating conditions		<Not Applicable >		
Unidentified		<Not Applicable >		
Other	63174	Decreased		Switch from coal to gas : Calculation method : $-7000/2\ 919\ 165 = -0,24\%$ Replacement of coal by gas at Olsztyn facility : Today, four of the Group's manufacturing facilities are still equipped with coal-fired boilers, in Olsztyn (Poland), Louisville KY (United States), Bassens (France) and Pirot (Serbia), while another, in Shenyang, China, purchases steam from a coal-fired plant. In 2018, the Environmental Governance body(2) approved the goal of eliminating coal as an energy source in the production plants by 2030. Studies to replace coal with natural gas, biomass or other primary energy source are under way at four of the five plants. In an initial step towards going coal-free, the Olsztyn plant has installed a gas-fired boiler that came on line in mid-2020 and is expected to supply 20% of its thermal energy. Change in Grid Power Emission factors : Calculation method: $(-5\ 6174/2\ 919\ 165)=-1,92\%$

C7.9b

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

Market-based

C8. Energy

C8.1

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

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

C8.2

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

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	0	4890012	4890012
Consumption of purchased or acquired electricity	<Not Applicable>	1311513	2784957	4096470
Consumption of purchased or acquired heat	<Not Applicable>	114042	634347	748390
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	1425555	8309317	9734872

C8.2b

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

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

C8.2c

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

Fuels (excluding feedstocks)

Anthracite Coal

Heating value

LHV (lower heating value)

Total fuel MWh consumed by the organization

1403379

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

15141

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

32485

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

3439007

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.**

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity				
Heat	4086341	3738779		
Steam				
Cooling				

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**

Heat/steam/cooling supply agreement

Low-carbon technology type

Other, please specify (Heat recovery from waste combustion)

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

France

MWh consumed accounted for at a zero emission factor

17433

Comment**Sourcing method**

Heat/steam/cooling supply agreement

Low-carbon technology type

Biomass

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

France

MWh consumed accounted for at a zero emission factor

48276

Comment**Sourcing method**

Power purchase agreement (PPA) with on-site/off-site generator owned by a third party with no grid transfers (direct line)

Low-carbon technology type

Solar

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

Please select

MWh consumed accounted for at a zero emission factor

4134

Comment

Asia Pacific (Thailand and India)

Sourcing method

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

Low-carbon technology type

Hydropower

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

France

MWh consumed accounted for at a zero emission factor

502228

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

Spain

MWh consumed accounted for at a zero emission factor

174849

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

Spain

MWh consumed accounted for at a zero emission factor

207379

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

Spain

MWh consumed accounted for at a zero emission factor

24398

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

Italy

MWh consumed accounted for at a zero emission factor

15282

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

Italy

MWh consumed accounted for at a zero emission factor

4062

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

Romania

MWh consumed accounted for at a zero emission factor

19714

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

Romania

MWh consumed accounted for at a zero emission factor

131935

Comment**Sourcing method**

Unbundled energy attribute certificates, Guarantees of Origin

Low-carbon technology type

Hydropower

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

Germany

MWh consumed accounted for at a zero emission factor

57282

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

Please select

MWh consumed accounted for at a zero emission factor

2344

Comment

For confidentiality reasons, the Group does not communicate site-level energy consumption data. In countries where the Group has only one factory, this means that communicating data at country level would come down to communicating site-level data. To be able to provide a response, in this line, we have summed up the consumption 3 European countries (Poland, Hungary and the UK).

Sourcing method

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

Low-carbon technology type

Biomass

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

Please select

MWh consumed accounted for at a zero emission factor

3373

Comment

For confidentiality reasons, the Group does not communicate site-level energy consumption data. In countries where the Group has only one factory, this means that communicating data at country level would come down to communicating site-level data. To be able to provide a response, in this line, we have summed up the consumption 3 European countries (Poland, Hungary and the UK).

Sourcing method

Unbundled energy attribute certificates, Guarantees of Origin

Low-carbon technology type

Hydropower

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

Please select

MWh consumed accounted for at a zero emission factor

164533

Comment

For confidentiality reasons, the Group does not communicate site-level energy consumption data. In countries where the Group has only one factory, this means that communicating data at country level would come down to communicating site-level data. To be able to provide a response, in this line, we have summed up the consumption 3 European countries (Poland, Hungary and the UK).

Sourcing method

Other, please specify (Biogas Guarantees of Origin)

Low-carbon technology type

Biomass

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

France

MWh consumed accounted for at a zero emission factor

176

Comment**C9. Additional metrics****C9.1****(C9.1) Provide any additional climate-related metrics relevant to your business.****C10. Verification****C10.1****(C10.1) Indicate the verification/assurance status that applies to your reported emissions.**

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

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

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Statutory Auditor's Report 2021.pdf

Page/ section reference

2020 Michelin Universal Registration Document, chapter 4.2.3, pages 241-243

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

C10.1b

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

Scope 2 approach

Scope 2 market-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

Statutory Auditor's Report 2021.pdf

Page/ section reference

2020 Michelin Universal Registration Document, chapter 4.2.3, pages 241-243

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?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C6. Emissions data	Year on year emissions intensity figure	ISAE3000	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 2021.pdf
C5. Emissions performance	Other, please specify (CO2 emissions avoided)	ISAE3000	100% of the data have been verified by a third party providing limited assurance according to the ISAE3000 standard. Statutory Auditor's Report 2021.pdf
C8. Energy	Energy consumption	ISAE3000	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 2021.pdf

C11. Carbon pricing

C11.1

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

Yes

C11.1a

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

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	
% of Scope 1 emissions covered by the ETS	57.5
% of Scope 2 emissions covered by the ETS	7.5
Period start date	January 1 2020
Period end date	December 31 2020
Allowances allocated	542210
Allowances purchased	331026
Verified Scope 1 emissions in metric tons CO2e	692128
Verified Scope 2 emissions in metric tons CO2e	93893
Details of ownership	Facilities we own and operate
Comment	
Shanghai pilot ETS	
% of Scope 1 emissions covered by the ETS	0
% of Scope 2 emissions covered by the ETS	8.9
Period start date	January 1 2020
Period end date	December 31 2020
Allowances allocated	111909
Allowances purchased	0
Verified Scope 1 emissions in metric tons CO2e	0
Verified Scope 2 emissions in metric tons CO2e	111909
Details of ownership	Other, please specify (Heat purchased from an ETS supplier)
Comment	

C11.1c

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

France carbon tax

Period start date

January 1 2020

Period end date

December 31 2020

% of total Scope 1 emissions covered by tax

31

Total cost of tax paid

584259

Comment

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

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

Strategy is 1/ To make sure there is a balance between allowances and emissions, including forward purchases of allowances, to smooth the cost impact on production facilities: 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.*

2/ Deliver ambition to reduce specific energy consumption by 37 % between 2010 and 2030: 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 37 % between 2010 and 2030.

In order to implement energy-efficiency programs, each plant has an appointed energy specialist. To support the very ambitious 2030 roadmap, the Energy competency network will be expanded with the creation of an Energy Expert position for Europe and a separate two-year post dedicated to leading the Energy Efficiency Roadmap deployment program.

In 2020 the plants worked on their fixed energy use, to gain a better understanding of the sensitivity of the process to wide swings in output and to improve their ability to manage facility shutdown and restart procedures.

C11.2

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

Yes

C11.2a

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

Credit origination or credit purchase

Credit origination

Project type

Energy efficiency: households

Project identification

Livelihoods with NGO Hifadhi : Improved cook-stoves in Embu County, Kenya

Verified to which standard

Gold Standard

Number of credits (metric tonnes CO2e)

1564

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

1564

Credits cancelled

Yes

Purpose, e.g. compliance

Other, please specify (Voluntary Offsetting of digital event e-Primacy)

Credit origination or credit purchase

Credit origination

Project type

Energy efficiency: households

Project identification

Livelihoods with NGO Hifadhi : Improved cook-stoves in Embu County, Kenya

Verified to which standard

Gold Standard

Number of credits (metric tonnes CO2e)

26364

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

26364

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

Credit origination or credit purchase

Credit origination

Project type

Forests

Project identification

Livelihoods with NGO Oceanium : mangrove restoration project in Senegal

Verified to which standard

Other, please specify (VCU)

Number of credits (metric tonnes CO2e)

14500

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

14500

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 Tiipaalga : Cookstoves in Burkina Faso

Verified to which standard

Gold Standard

Number of credits (metric tonnes CO2e)

10677

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

10677

Credits cancelled

No

Purpose, e.g. compliance

Voluntary Offsetting

C11.3

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

Yes

C11.3a

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

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

1.6

% total procurement spend (direct and indirect)

65

% 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). More than 60% of the overall purchasing spend is covered by Ecovadis assessments, and regarding natural rubber the spend coverage is over 85% and reaching over 90% for other raw materials. While the EcoVadis approach provided a basic understanding of suppliers' maturity in this area, the rationale for a 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. In 2020, this questionnaire has been sent to suppliers amongst the purchase categories which have the highest impact on Michelin Scope 3 emissions (a total of 94 suppliers, of which 69 raw material suppliers and 25 IS/IT suppliers). 82 of them answered the questionnaire, of which 60 raw materials suppliers and 22 IS/IT suppliers. The responding suppliers represent 67% of the scope 3 category 1 emissions. In 2021 this questionnaire has been sent to 104 suppliers (of which 84 raw material suppliers) which represent approx 83% of the scope 3 cat 1 emissions.

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. This goal has been overachieved as a total of 828 suppliers have a valid score in 2020 (out of 916 targeted suppliers), and participation is iterative as progress is made and action plans are implemented. In 2020, 84% of the 828 scored suppliers had achieved a score of 45 or above of the overall rating, and about 81% 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 raw materials suppliers takes into account the Ecovadis performance of the suppliers. In 2021 the assessment program will cover around 980 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 2018/2019, with appropriate KPIs. This is a lever to improve supplier practices vs environment issues. More than 62% of the suppliers which had a previous score have improved their score. 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. Of all the suppliers requested to respond to the CDP Climate Change Supply Chain questionnaire, 87% responded in 2020. This survey has been renewed in 2021. The central CSR team prepared a scorecard for each supplier to engage the discussion with the suppliers about their disclosure as well as their GHG actions and targets. These discussions are key to engage suppliers on their journey to tackle climate change.

Comment

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Other, please specify (Climate change performance is featured in supplier segmentation scheme and a supplier awards scheme; as well as environment and climate change embedded, and suppliers engaged on CSR assessments, in our supplier code of conduct.)

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

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

7

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. - CSR performance (including climate change) is taken into account in supplier awards scheme, in which any of our suppliers can be enlisted. In late 2020 and early 2021 Michelin updated its Michelin Purchasing Principles, which are applicable to all suppliers, and included in Michelin contracts. These principles now define more precisely what is a requirement and what is an expectation, to ease enforcement. Within the section named "Fundamental Principles", a sub-section addresses specifically the Protection of the Environment. Suppliers are required to send upon request any information that may be required to determine the CSR impact of any product or service it provides to Michelin (eg CO2 emissions). This document also encourages all suppliers to reduce GHG emissions, including transportation phases. It also expresses that suppliers shall carry out the CSR assessments which may be requested. Michelin has also started running a specific program to foster innovation with suppliers. The program named IWS, Innovation with Suppliers, aims at capturing innovation ideas on the market (existing, improved or new material, services, technology proposed by or developed with current or potential suppliers), in order to implement them within Michelin and therefore contribute to the Group performance. It relates to any kind of purchase (direct and indirect spend). KPI relates to the number of ideas which have been captured and implemented, rather than spend.

Impact of engagement, including measures of success

- Results of the CSR performance and CDP disclosure (where relevant) are taken into account in the supplier segmentation (which defines whether supplier is a strategic, partnership, business or basic transactional type supplier). - CSR performance (including climate change) is taken into account in supplier awards scheme (however none has taken place in 2020 due to covid). Suppliers award create an emulation amongst suppliers, engaging them our sustainability. - Commitments are embedded into contractual terms, which facilitates the onboarding of suppliers in CSR assessments and sharing key data for CO2 emissions and lifecycle analysis calculations. - In the most recent years we have found out that more and more innovations involve environment protection and reducing impacts on environment, of which climate change. The ISW program fosters exchanges with suppliers and stimulates innovation.

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

% of suppliers by number

50

% total procurement spend (direct and indirect)

2

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

0.6

Rationale for the coverage of your engagement

Michelin continue to engage a major part of its logistics partners (accounting for more than 70 % of his 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. Work 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

Even if it was not possible to organize seminars with shippers and other logistics actors in 2020, the LABS on initiatives already underway were renewed during the year. A club onboarding more than 50 actors (carrier, shipper, logistics subcontractor) was created to collaborate within the Movin'on Summit. Several Digital Meetings were

organized around: - The decarbonization of maritime transport and concrete actions that can be taken today. - The decarbonization of road transport by deploying heavy hydrogen trucks. By mobilizing the Movin'On ecosystem and raising Transport Decarbonisation Alliance profile during the Digital Meetings in June 2020, Michelin enabled the coalition to launch a global campaign to call public and private-sector stakeholders to action in support of zero-emission freight vehicles. In this way, it hopes to sign a global memorandum of understanding at the COP 26 meeting, rescheduled for November 2021, to communicate demand for these vehicles and hasten their arrival on the market. As a result of Michelin's actions to bringing together a variety of mobility ecosystems, Michelin signed a letter of commitment in early 2021 for maritime transport with NEOLINE, a French shipowner relying on main propulsion by wind energy for its 136m-long cargo ships equipped with 4200 m2 of sails. The commitment encompasses the transport of Michelin-produced tires loaded in containers from Halifax (Canada) to Saint-Nazaire - Montoir de Bretagne (France) on the first transatlantic line to be opened by NEOLINE in 2023. With the arrival of a second vessel, scheduled a year later, the Michelin will gradually entrust NEOLINE with at least 50% of the group's containers transported on this line. In addition, Michelin signed contracts with shipping companies that use biofuel to avoid the emission of the equivalent of 1000 t of CO2 for its maritime transport between Europe and North America.

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

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 2020, for the 6th 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 22nd worldwide. 2) In 2020, Michelin retains its title as the world's strongest tire brand with a Brand Strength Index (BSI) score of 86.20 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\$7.1 billion according to the latest Brand Finance Auto & Tyres 2020 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 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

(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

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

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Cap and trade	Support	European Trading Scheme: Exchanges with country-level and EU regulators and associations.	Focus on the calculation of indirect costs compensation, with the industry association presenting further evidence of impacts, in the context of public and targeted consultations by the European Commission.
Other, please specify (Tire rolling resistance)	Support	Michelin was very active in advocating for threshold and labelling regulation for tire rolling resistance now in place in Europe (2009 legislation), as well as in South Korea, Brazil, Norway, Turkey, Israel, Saudi Arabia and GSO. Michelin actively contributes to the introduction of regulations in other countries, in particular the USA, China and India. With the European commission, Michelin participates in the improvement of machine test methods within the EGLA (Expert Group for Laboratory Alignment for Rolling Resistance Measurement). Michelin also participates in the discussions around the review of the European labelling regulation and the update of ISO 28580 standards.	Based on EGLA results, proposed content for improving the European Regulation 1235/2011 amending the "Regulation N° 1222/2009.
Other, please specify (CO2 emission testing)	Support	Michelin has brought technical recommendations to the European Commission and their experts regarding tailpipe testing procedures, including CO2, for light vehicles towards implementing worldwide rules.	Technical recommendations for the United Nations Global Technical Regulation n° 15 on Worldwide Harmonized Light Vehicle Test Procedure (WLTP).
Other, please specify (CO2 emission testing)	Support	Michelin is bringing technical support for definition of testing procedures for calculating the CO2 emissions of trucks, including distinguishing the effects of rolling resistance versus aerodynamics (VECTO simulation tool). This activity has been extended in 2019 to the emissions of busses, coaches, light trucks and trailers. Michelin participates in different Experts Group for Heavy Duty Vehicles (HDV) CO2 emissions and in the Editing Committee of the technical part of the regulation.	Technical content for the European regulation 2017/2400 and its future amendments on the determination of the CO2 emissions and fuel consumption of HDV, including measure to assure In-Service Conformity of the vehicles and precise follow-up of fuel consumption.
Other, please specify (Performance testing)	Support	Michelin supports testing wet grip on tires at legal tread depth limit in order to ensure safety performance level throughout the lifetime of tires. Such testing would push drivers to use their tires up to the minimum tread depth, avoiding premature renewal of tires and saving CO2 emissions.	Michelin supports a wet grip performance threshold at legal tread wear limit, in particular in Europe and in China. The need to test tyres at worn stage has been introduced in the revision of the EU legislation on vehicle safety, and a working group has been set-up at UNECE level in order to define a testing method. Michelin contributes to the industry work of this working group.
Other, please specify (Adaptation, CO2 targets and CO2 pricing)	Support	The International Transport Forum – ITF at the OECD is an intergovernmental organization gathering around 60 Member-Countries, covering all modes of transport. It acts as a strategic think tank for transport policy and organizes an Annual Summit of Transport Ministers. Its goal is to help shape the transport policy agenda on a global level, and ensure that it contributes to economic growth, environmental protection, social inclusion and the preservation of human life and well-being.	Active participation in the Corporate Board Partnership -CPB where climate change mitigation and adaptation issues are frequently debated and tabled to the Ministers. Michelin is instrumental in engaging stakeholders from across a highly competitive industry to work together for sustainable multi-modal mobility.
Other, please specify (Sustainable mobility)	Support	Michelin is co-founder of the Paris Process for Mobility and Climate (PPMC) partnership, created in 2015 on the way to COP21, aiming to strengthen the voice of the sustainable transport community in the UNFCCC process.	Under the aegis of the COP presidencies, PPMC's work has been dedicated to building a Global Macro Roadmap for decarbonisation of the transport sector by 2050+ (GMR, final version issued and published for COP 23 in 2017), a holistic, synergized transformative approach of all transportation modes in order to reach the Paris Agreement. Since 2018 PPMC has been very instrumental to draft regional specific adaptations of this GMR for Morocco, Africa and Europe, and more recently for India (in partnership with WWF and FICCI, the Indian Federation of Industry Chambers), and currently for Ivory Coast (with Climate Chance Association as a lead).
Other, please specify (Sustainable Mobility)	Support	Michelin is founding member of TDA (Transport Decarbonisation Alliance), a growing "coalition of the 3 Cs" gathering to date 29 Countries, Cities/Regions and Companies committed to accelerate the worldwide transformation of the transport sector towards a net-zero emission mobility system before 2050. http://tda-mobility.org/	TDA was launched in 2018 and published at COP 24 in Katowice "A TDA manifesto on how to reach net zero emission mobility through uniting Countries, Cities / Regions and Companies". Michelin has been actively committed since 2018 to launching and contributing to TDA collaborative workstreams on 'Urban Freight and Zero Emission Zones in Cities' and 'Executive Education on Transport Decarbonisation' 'Active Mobility'.
Other, please specify (Sustainable Mobility)	Support	Michelin has joined in July 2018 the Steering Committee of the SuM4All initiative (Sustainable Mobility for All), a worldwide consortium of over 55 leading organizations and agencies in the transport sector led by the World Bank, committed to sustainable mobility (defined as green, safe, efficient and accessible) with a focus on Global South https://sum4all.org/	Michelin has been re-elected 2020 as a member of the Steering Committee – acknowledging the Group's commitment to voicing the business perspective in the initiative. Building on the GRA - Global Roadmap of Action, SuM4All has launched 2020 a pilot project in South Africa as a case study to implement on the ground the learnings of the GRA, and develop accordingly an Action Plan together with the national authorities and South Africa Development Bank. Michelin has been instrumental in this workstream while mobilizing its local teams and their business network to ensure solid and consistent connection with the private sector in this implementation phase. In addition to this, Michelin has been involved in another SuM4All workstream focused on 'Gender and Transport in South Africa' as a major input to factor in the pilot case. The Michelin Foundation has sponsored in 2020 an important work on gender data collection.

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?

Consistent

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?

Michelin contributes through 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

USTMA Climate Principles: USTMA members are committed to reducing greenhouse gas (GHG) emissions throughout a tire's life cycle, including focusing on: • Manufacturing products that contribute to the reduction of CO2 emissions; • Research and development of materials with lower carbon footprints; • Proactive measures to reduce GHG emissions from our manufacturing facilities; and • Advancing the circular economy for scrap tires. See also: USTMA's climate policy positions.

<https://www.ustires.org/sites/default/files/USTMA%20Climate%20Policy%20Grid.pdf> 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 Indústria de Pneumáticos (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.

Trade association

The Tire Industry Project (TIP), —currently comprised of 11 leading tire companies— it's not a trade association but the primary global forum for the tire industry on sustainability issues. Formed in 2005, TIP serves as a global, voluntary, CEO-led initiative, representing approximately 65 percent of the world's tire manufacturing capacity. Its aim is to proactively identify and address the potential human health and environmental impacts associated with the life cycle impacts of tires to proactively 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.

Trade association

Conselho Empresarial Brasileiro para o Desenvolvimento Sustentável (CEBDS)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

CEBDS has been advocating for the past years for a carbon pricing policy in Brazil, better measures for the conversation of Brazilian biomes such as the Amazon and a stronger Brazilian NDC.

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

Active participation in the board of CEBDS.

Trade association

Tyre Manufacturing' Association (TMA) EcoTyreUnion (ETU) CCIFR (Chambre de Commerce Franco-Russe)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

CCIFR – promotes the European approach of the “green energy”, contribute to the cooperation of different industry with relevant Ministries to discuss the new climate documents of the Russian government.

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

Michelin is a part of all discussions.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

No

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

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. These efforts jointly aim to be a model of cooperation to fight against climate change and to influence the automotive industry worldwide. It 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. Upgraded in January 2021, this document aims at promoting best practices across the entire value chain. The partnership between WWF and Michelin has contributed to 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 3rd General Assembly in Oct 2021.

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 (SiMPLify) initiative.

2) **Topic:** SiMPLify 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 SiMPLify 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 SiMPLify 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 SiMPLify process as the recommended approach for cities in the EU. In 2017, Michelin launched a SiMPLify 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

(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. This position directly supervises the 3 departments that are regularly involved in climate change issues with policy makers: a/ sustainable development and mobility, run by the Chief Sustainability Officer, b/ public affairs and c/ norms and regulations. Issues related to Michelin products and services and to direct operations are handled by 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 sustainable development and mobility department. This 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, which operates under auspices the Group Management Committee (GMC), 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, which oversees business strategy, 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

(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

URD 2020 UK.pdf

Page/Section reference

Michelin Universal Registration Document 2020 Chapter 1: Group presentation, ambitions and strategy (p.1-46) Chapter 4.1: MICHELIN Sustainable Development and Mobility Governance (p.151 - 155) Chapter 4.1.4: Environmental Governance, CO2emissions reduction and energy transition strategy and KPIs (200-201) Inventory of CO2 emissions (Scopes 1, 2 &3) (p.202-203) TCFD recommendations, Climate change strategy, risks & opportunities, (p.204-205) Environmental Targets, KPIs and actions (p.206-230)

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

Comment

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

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

	Job title	Corresponding job category
Row 1	Chief Manufacturing Officer, Member of the Group Executive Committee, Member of the Corporate Groupe Management Committee and lead chair of the Environment Governance body.	Director on board

SC. Supply chain module

SC0.0

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

SC0.1

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

	Annual Revenue
Row 1	20469000000

SC0.2

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

Yes

SC0.2a

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

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	FR	0000121261

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

27261

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

Ford Motor Company

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

28400

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

3217218

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

Nissan Motor Co., Ltd.

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

2269

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

2364

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

267801

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

918

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

957

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

Jaguar Land Rover Ltd

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

108390

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

20128

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

General Motors Company

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

20969

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

General Motors Company

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

2375439

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

BMW AG

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

4376

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

4559

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

516414

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

Stellantis N.V.

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

36343

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

Stellantis N.V.

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

37862

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

Stellantis N.V.

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

4289136

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

Honda North America, Inc.

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

4089

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

Honda North America, Inc.

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

4260

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

482573

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

13216

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

Toyota Motor Corporation

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

13768

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

1559684

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

28328

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

29512

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.

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

3343215

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

5284

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

5505

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

Volvo Car Group

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

623588

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

Renault

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

7463

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

Renault

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

7775

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

Renault

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

880792

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

Ferrari

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

115

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

Ferrari

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

119

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

Ferrari

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

13534

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

3027

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

3154

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

357255

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

Walmart, Inc.

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

91

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 CO₂e

95

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 CO₂e

10728

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

Vale SA

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO₂e

5078

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 SA

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

5290

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

Vale SA

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

599237

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

Grupo Bimbo, S.A.B. de C.V.

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

1

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

Grupo Bimbo, S.A.B. de C.V.

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

1

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

Grupo Bimbo, S.A.B. de C.V.

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

169

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

Los Angeles Department of Water and Power

Scope of emissions

Scope 1

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

42

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

Los Angeles Department of Water and Power

Scope of emissions

Scope 2

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

44

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

Los Angeles Department of Water and Power

Scope of emissions

Scope 3

Allocation level

Company wide

Allocation level detail

<Not Applicable>

Emissions in metric tonnes of CO2e

4937

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%).

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

Scope 1 and 2 emissions are published in the Michelin Group's annual report "2020 Universal Registration Document", pages 202, available on the corporate internet site (<http://www.michelin.com>). Scope 3 emissions for each relevant category for the year 2019 have been publicly reported to the CDP in 2020 (3-year cycle approach), and all published sources for these calculations are cited in the replies concerning methodology.

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

Allocation challenges	Please explain what would help you overcome these challenges
Diversity of product lines makes accurately accounting for each product/product line cost ineffective	The main challenge in allocating emissions to different customers is that, as the emissions associated with tires are strongly dependent on the type of tire involved, the allocation of emissions depends on the dimensions of tires they buy. Several factors make it challenging to refine the allocation per customer: first, we have not been able to take into account the carbon sink associated with natural rubber plantations, as the accounting method is not yet established, and to incorporate this into the customer allocation based on the type of tires purchased and their natural rubber content; second, the manufacturing phase takes place at plants that typically produce at least two major lines of tires (e.g., passenger car and truck tires), as well as a variety of semi-finished products to be used at other plants. The breakdown at plant level of CO2 emissions associated with the production of one type of tire is not currently possible with our data reporting systems. This makes it complex, at a global level, to allocate a specific quantity of emissions to a specific customer. However, it must be kept in mind that the overwhelming contribution to the carbon footprint allocated to a given customer stems from the rolling resistance of the tires in their use phase, which represent between 85 and 90% of Scope 1, 2 and 3 emissions combined. Our aim is continue to refine our methodology for calculating Scope 3 use phase emissions by general product category, namely passenger car tires and truck tires.
Other, please specify (Scope 3 emissions: use phase)	The main difficulty is the lack of data to account for the improved energy efficiency of Michelin tires actually on the road in year-on-year accounting. Our current calculation method is based on the IEA Mobility Model data available for the most recent year completed (2015). We know of no other method that can be used to reduce the uncertainty.

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

Yes

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

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

Reduce Logistics Emissions

Type of project

Changing transportation mode (switch from air to rail)

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

In the context of sustainability workshops BMW and Michelin are evaluating CO2 reduction in tire transportation by collaborating on transportation modes and anticipation of deliveries.

Requesting member

BMW 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

Michelin is implementing more and more high load tire (HL) applications that permit to improve the vehicles consumption via a compact and energy efficient car design especially for EV and Hybrid cars. Furthermore both companies work on HL sport tires with an A label in RR to further reduce energy consumption. Michelin develops tires for BMW that offer homogenous tire performances over all the life time. Long lasting wear life of our low rolling resistance tires improves the sustainable footprint via less consumed tires and the associated wear rate (g/km) improves the tire emissions in terms of Tire and Road Wear Particles significantly. Michelin proposes to pursue efforts with BMW to develop tires with lower rolling resistance whilst maintaining longevity as well as other key performances to satisfy the end customer and optimize the use of materials for the next generation of vehicles.

Requesting member

BMW AG

Group type of project

New product or service

Type of project

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

Michelin also commits that 70% of its suppliers by emissions covering purchased goods and services will have science-based targets by 2024 (SBTi). Michelin is collaborating with BMW to lower the upstream emissions footprint by the use of renewable vegetal sources as Biobutterfly (see 3/) and increasing amount of of recyclable material, especially steel.

Requesting member

BMW AG

Group type of project

Change to supplier operations

Type of project

Increased levels of purchased renewable energy

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 implemented projects to reach carbon neutrality Scopes 1 and 2 by 2050 with -50% in 2030 from a 2010 base year. Already in today BMW and Michelin agreed to allocated 100% renewable electric energy to tire production of BMW tires in all Michelin plants BMW is receiving tires from produced as of 2024. Furthermore, the partners are currently exploring possibilities to use CO2 free steam.

Requesting member

BMW AG

Group type of project

Change to provision of goods and services

Type of project

Other, please specify (supply chain transparency of natural rubber and CO2 emission reduction)

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

BMW and Michelin are assessing to collaborate on the supply chain transparency of natural rubber as well as on remediation projects. BMW needs to evaluate if Rubberway could be a solution from their pov.

Requesting member

BMW AG

Group type of project

Other, please specify (Jointly promoting sustainable mobility)

Type of project

Other, please specify (automotive conferences, such as at Movin'On)

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 offers 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

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

1-3 years

Estimated lifetime CO2e savings

5800000

Estimated payback

1-3 years

Details of proposal

Since 1992 Michelin has been continually reducing rolling resistance (RR) and believes itself to be the most advanced tire manufacture based on total 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.

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 works 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

General Motors Company

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

1-3 years

Estimated lifetime CO2e savings

8990000

Estimated payback

1-3 years

Details of proposal

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.

Requesting member

General Motors Company

Group type of project

Relationship sustainability assessment

Type of project

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

1-3 years

Details of proposal

Supporting GM efforts on sustainability, recyclability, materials development (2 times presence at Movin'On summit).

Requesting member

General Motors Company

Group type of project

Reduce Logistics Emissions

Type of project

Other, please specify (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

1-3 years

Estimated lifetime CO2e savings

Estimated payback

1-3 years

Details of proposal

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

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

Michelin is continuously working 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

Stellantis N.V.

Group type of project

Relationship sustainability assessment

Type of project

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

Collaboration to assess cradle to gate vehicle LCA on different types of vehicles.

Requesting member

Stellantis N.V.

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

1-3 years

Estimated lifetime CO2e savings**Estimated payback**

1-3 years

Details of proposal

Long term collaboration on RR, Michelin has been working with ex-PSA on multiple low RR generations of tires, last innovation project(YBRR) is on going and focusing on further RR and aero improvement to prepare for CAFE2025 milestone.

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 & LRRC design concept with co-dev for new EV in 2023, whilst 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.

Requesting member

Honda North America, Inc.

Group type of project

Change to supplier operations

Type of project

Implementation of energy reduction projects

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 implemented projects to reach carbon neutrality Scopes 1 and 2 by 2050 with -50% in 2030 from a 2010 base year.

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 works with Toyota on reducing CO2 emissions, especially by developing tires combining low rolling resistance in "real world" situation with Dry / Wet mu performance.

Requesting member

Honda North America, Inc.

Group type of project

Change to supplier operations

Type of project

Implementation of energy reduction projects

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 implemented projects to reach carbon neutrality Scopes 1 and 2 by 2050 with -50% in 2030 from a 2010 base year. Michelin shared the CO2 company emission data with TMNA for the North American sites.

Requesting member

Honda North America, Inc.

Group type of project

Reduce Logistics Emissions

Type of project

Other, please specify (optimize sourcing decisions)

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

Prioritization of sourcing from Thailand to avoid CO2 emissions linked to logistics (currently 75% tires for TOY sourced from Thailand -> 86% in the next 5 years).

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

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 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. 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

Daimler AG

Group type of project

New product or service

Type of project

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

Please select

Estimated lifetime CO2e savings

Estimated payback

3-5 years

Details of proposal

Both companies have agreed to work to increase the use of secondary material which will be formally documented during the tire homologation process.

Requesting member

Daimler AG

Group type of project

Change to supplier operations

Type of project

Increased levels of purchased renewable energy

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 implemented projects to reach carbon neutrality Scopes 1 and 2 by 2050 with -50% in 2030 from a 2010 base year. Michelin also commits that 70% of its suppliers by emissions covering purchased goods and services will have science-based targets by 2024 (SBTi). Furthermore in the context of Mercedes "Ambition 2039" Michelin ensures that the products we provide to the Mercedes-Benz AG are CO2 neutral (own value chain and supply chain) by 2039 at the latest. All products that are delivered

from 01/01/2039 at the latest are produced in a CO2-neutral manner in all stages of the value chain. This includes the production at your locations as well as the upstream supply chain (HQ-Level). Roadmaps to CO² neutrality have been shared.

Requesting member

Renault

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 works with the Alliance 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

Renault

Group type of project

Relationship sustainability assessment

Type of project

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

Other, please specify (>5 years)

Estimated lifetime CO₂e savings**Estimated payback**

Other, please specify (>5 years)

Details of proposal

Collaboration on a "Ultragreen" demonstrator that dratically optimizes CO₂ cradle to grave LCA.

Requesting member

Ferrari

Group type of project

Change to provision of goods and services

Type of project

More online / virtual provision of services

Emissions targeted

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

Estimated timeframe for carbon reductions to be realized

0-1 year

Estimated lifetime CO₂e savings**Estimated payback**

0-1 year

Details of proposal

Systematic integration of virtual development loops in all tire developments (part of a contractual partnership) -avoiding materials waste & CO₂ consuming trips.

Requesting member

Ferrari

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**

1-3 years

Details of proposal

Michelin is striving to provide to Ferrari the best technology to improve vehicle fuel efficiency and reduce CO2 emissions, while also maintaining the ultimate balance of performance needed for such sport cars: max grip, dry and wet handling and NVH. For doing so, Michelin optimizes the three major tire parameters contributing to fuel consumption: rolling resistance, mass and aerodynamics.

Requesting member

Volvo Car Group

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

Michelin implemented projects to reach carbon neutrality Scopes 1 and 2 by 2050 with -50% in 2030 from a 2010 base year. Michelin shared the CO2 company emission data with Volvo Cars as well as a dedicated Environmental Assessment for Michelin's relevant sites. The partners agreed to annually review the progress and current state. Michelin takes action to develop a roadmap on how to reach 100 % renewable energy for Volvo's tires by 2025 and a reduction plan towards net zero emissions including short term actions to slow down the exponential curve of climate change.

Requesting member

Volvo Car Group

Group type of project

New product or service

Type of project

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

Michelin committed to cascade its sustainability targets to Michelin suppliers and commits that 70% of its suppliers by emissions covering purchased goods and services will have science-based targets by 2024 (SBTi). Life-Cycle Analysis (LCA) on tires delivered to Volvo Cars will be performed according to ISO 14040 to assess the ecological performance as well as progress levers. In this context Volvo and Michelin are in working on a sustainable tire reducing the global CO2 emissions via a long wear tires being replaced less often and reducing CO2 because of lower consumption by lowering rolling resistance.

Requesting member

Volvo Car Group

Group type of project

Relationship sustainability assessment

Type of project

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 working on 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

Please select

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 technologie, digital services and "Tire as a service" solutions. 3/ In addition Michelin is supporting CNH strategie 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...). Michelin is also contributing to workshops with Iveco about Light Trucks Electrification to draw the futur specifications of 17.5" products.

Requesting member

CNH Industrial NV

Group type of project

Please select

Type of project

Please select

Emissions targeted

Please select

Estimated timeframe for carbon reductions to be realized

Please select

Estimated lifetime CO2e savings

Estimated payback

Please select

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. As an example after the launch of Xcoach Z in 2019 with optimized RR, the Launch of Incity EV product (2021) with better Rolling Resistance and higher load Capacity will leverage Electrification and Passengers capacity.

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

1-3 years

Estimated lifetime CO2e savings

Estimated payback

Please select

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. In 2020 for example better rolling resistance offers have been enriched, for exemple with the 315/70R22.5 X Line Energy Z2 and 315/80R22.5 X Multi Energy Z & D in 2021 We can shared as an example the launches of the new generations of X One tyres in North Americain (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 vehicule 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 vehicule generation electrique and autonomous including connected tyre system technologie: discussion or partnership are on going in Europe, US and Japon.

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

Name of good/ service Passenger car tires
Description of good/ service 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.
Type of product Final
SKU (Stock Keeping Unit) Single 11.56-kg tire
Total emissions in kg CO2e per unit
±% change from previous figure supplied
Date of previous figure supplied
Explanation of change
Methods used to estimate lifecycle emissions Please select
Name of good/ service Truck tires
Description of good/ service 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.
Type of product Final
SKU (Stock Keeping Unit) Single 62-kg tire
Total emissions in kg CO2e per unit
±% change from previous figure supplied
Date of previous figure supplied
Explanation of change
Methods used to estimate lifecycle emissions Please select

SC4.2b

(SC4.2b) Complete the following table with data for lifecycle stages of your goods and/or services.

Name of good/ service

Please select the scope

Please select

Please select the lifecycle stage

Please select

Emissions at the lifecycle stage in kg CO2e per unit

Is this stage under your ownership or control?

Please select

Type of data used

Please select

Data quality

If you are verifying/assuring this product emission data, please tell us how

SC4.2c

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

Name of good/ service	Initiative ID	Description of initiative	Completed or planned	Emission reductions in kg CO2e per unit
Passenger car tires	Initiative 1	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 at 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 1992 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.	Please select	15.5
Truck tires	Initiative 2	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.	Please select	95
Passenger car, truck, two-wheel, aviation, earth-movers and agricultural engines: Reducing the carbon emissions of our manufacturing plants.	Initiative 3	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.	Please select	10

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

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

Please confirm below

I have read and accept the applicable Terms