

Welcome to your CDP Climate Change Questionnaire 2020

C0. Introduction

C0.1

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

Bayerische Motoren Werke G. m. b. H. came into being in 1917, having been founded in 1916 as Bayerische Flugzeugwerke AG (BFW); it became Bayerische Motoren Werke Aktiengesellschaft (BMW AG) in 1918. The BMW Group has meanwhile become one of the ten largest car manufacturers in the world. With our BMW, MINI and Rolls-Royce brands, we possess three of the strongest premium brands in the automobile industry. We also command a strong market position in the motorcycle sector and operate successfully in the field of financial services. The Strategy Number ONE adopted in 2007 has put us on the right path to a successful future. Since 2007 and the introduction of Strategy Number ONE, the company has grown to a new level. We have developed successfully from being the leading manufacturer of premium vehicles to becoming the leading provider of premium mobility and services. At the same time, our environment has changed at a rapid pace. Digitalization, in particular, has brought about new technological opportunities for the automobile industry, ranging from automated driving to connectivity and automation in production. In the light of these developments, we have revised and updated our strategy for the future. We are operating from a solid basis: the BMW Group successfully combines financial strength, innovation and profitability with further growth, and we intend to pursue this path further with Strategy NUMBER ONE > NEXT. Our business model will continue to focus on sustainable individual mobility in the premium segment – combined with attractive mobility services. This means in particular the electrification of all BMW Group brands and model series. The customer is at the heart of everything we do. With our Strategy Number ONE > NEXT, we are looking ahead to the year 2025. Long-term thinking and responsible action have long been the cornerstones of our success. Striving for ecological and social sustainability along the entire value-added chain, taking full responsibility for our products and giving an unequivocal commitment to preserving resources are prime objectives firmly embedded in our corporate strategy. For these reasons, the BMW Group is the only company in the automotive sector continuously listed in the Dow Jones Sustainability Indices since 1999.

Sustainability is a key component of the strategic approach to Strategy NUMBER ONE > NEXT and makes an important contribution towards our competitive edge. The sustainability strategy is consistent with the corporate strategy and pursues the thorough integration of sustainability. It applies across all board divisions worldwide. 2020 will be a transformational year for the BMW Group as it will mark the end of the intended implementation phase for our current set of sustainability goals. In addition, we are already hard at work incorporating new sustainability goals into our business strategy. Using a so-called “environment radar” which includes ecological and social criteria, engaging in dialogue with stakeholders, taking sustainability into account in all decisions and keeping a tight watch over the whole value-added chain are key elements of our sustainability management. Corporate sustainability measured in balanced

scorecard terms (at Group level) was first included as a formal corporate objective at the beginning of 2009. Detailed targets are then derived for each of the divisions within the Group. Today, every project must be measured in terms of corporate sustainability. This involves measuring the consumption of resources, emission levels as well as the social and socio-political consequences of the various solutions at hand.

The Board of Management works to ensure that the Group's Strategy NUMBER ONE > NEXT is aligned with sustainability in the long term. In 2019, the special-purpose Sustainability Board was fully involved in regular Board of Management meetings, allowing sustainability issues to be even more consistently integrated into the company's decision-making processes. Since then, sustainability issues have been treated like every other topic and discussed as needed at fortnightly Board of Management meetings. All specific decisions referred to the Board of Management are subject to a mandatory sustainability evaluation. The decisions to be made by the Board of Management are prepared by the Strategy and Structure Circle. This group consists of the top management of the company divisions and also addresses sustainability issues.

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
Reporting year	January 1, 2019	December 31, 2019	No

C0.3

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

- Austria
- Brazil
- China
- Germany
- India
- Mexico
- South Africa
- 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.

Operational control

C-T00.7/C-TS0.7

(C-T00.7/C-TS0.7) For which transport modes will you be providing data?

Light Duty Vehicles (LDV)

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	i) Explanation The highest level of direct responsibility for climate-related issues is the Board of Management. The Board determines the strategic direction with regard to sustainability topics and climate change. Every document submitted to the Board for decision must include a sustainability assessment of the planned project and/or the alternatives presented for decision. ii) Example of climate-related decisions One example of a climate-related decision made by the Board of Management includes the target to power our worldwide plants with 100% renewable energy by 2020.

C1.1b

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

Frequency with which climate-related issues	Governance mechanisms into which climate-related issues are integrated	Please explain

are a scheduled agenda item		
Scheduled – all meetings	<p>Reviewing and guiding strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding annual budgets</p> <p>Reviewing and guiding business plans</p> <p>Setting performance objectives</p> <p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<p>We selected “scheduled – all meetings” as well as all “Governance mechanisms” because it is obligatory and an integral component for every submission to the Board of Management to assess implications on sustainability issues such as resource consumption or impact on the environment.</p> <p>According to our vision of being the world’s most successful and sustainable premium provider of individual mobility many decisions are directly or indirectly linked to climate related issues.</p> <p>Sustainability is a core principle in our strategy Number ONE > NEXT and anchored in the strategic approach. When the board is reviewing and guiding our strategy as well as major plans of actions, business plans, annual budgets or overseeing major capital expenditures, acquisitions and divestitures sustainability plays a key role as part of our strategic approach. This is how the governance mechanisms contribute to the board's oversight of climate issues.</p> <p>As a major example we mention our heavy investments in vehicle efficiency, electrification and battery electric vehicles (BEV) to support decarbonisation as well as in Joint Ventures to support market penetration of BEVs. We have the BEV BMW i3 and Mini Cooper SE as well as the 2, 3, 5 and 7 Series, X1, X2, X3, X5, the MINI Countryman and the i8 as PHEV models. In 2019, BMW launched three further models featuring hybrid technology, namely the BMW X1, the X2 and the BMW 3 Series Touring. The MINI Cooper SE, an all-electric model, is available for order since its launch in 2019. The next step is the launch of the BMW iX3 model in 2020, a model with a fully electric drivetrain. By 2023, we will offer a total of 25 electrified models, more than half of them pure electric. One model is the BMW iNEXT (production start in 2021), which combines electric and Level 3 autonomous driving, high-end connectivity and the interior of the future in a single vehicle for the first time – thereby creating a whole new experience of mobility.</p> <p>A quarter of the vehicles we sell in Europe should be electrified by 2021; a third in 2025 and half in 2030. That is why we are relying on flexible platforms, where customers can choose their drive train (BEV, PHEV,</p>

		<p>diesel or petrol) to suit their preference. Flexibility is our strategy for ramping up electromobility, not stand alone electric platforms. All this results e.g. in the reduction of CO2 emissions of our newly sold vehicles in Europe (EU-28) by 42.4 % between 1995 and 2019. Until 2020 our goal is to reduce CO2-emissions by at least 50%. CO2-targets are monitored in vehicle markets to reach the increasingly strict regulatory requirements as well as our own ambitious standards. Expanding the charging infrastructure is a fundamental condition for the breakthrough of electromobility. In founding the IONITY joint venture, the BMW Group together with other OEMs is setting the course for creating a high-performance rapid charging network for electric vehicles in Europe.</p>
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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)	Responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify Chief Development Officer, Member of the Board of Management of BMW AG, responsible for Development	Both assessing and managing climate-related risks and opportunities	More frequently than quarterly
Other C-Suite Officer, please specify Chief Production Officer, Member of the Board of Management of BMW AG, responsible for Production	Both assessing and managing climate-related risks and opportunities	Half-yearly

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 answer explains (i) where in the organization the position lies, (ii) what the rationale and responsibilities are and (iii) how climate change (CC) related issues are assessed and monitored.

A. “Chief Development Officer”:

(i) The Member of the Board of Management of BMW AG responsible for Development (MBoMD) leads the R&D department. He is accountable for all decisions for the R&D department, based on the strategic orientation and decision framework stipulated at Board of Management (BoM) meetings being the highest body.

(ii) The MBoMD is responsible for all the activities in the R&D department. A key issue is energy consumption and CO₂-emissions of BMW Group's worldwide vehicle fleet. Therefore, a key process entails us defining specific CO₂-targets for each product line and each new vehicle project in order to achieve our strategic targets on vehicle fleet CO₂-emissions as well as all regulatory requirements worldwide. Our Strategy unit is responsible for monitoring and further developing these targets.

The "Complete Vehicle Architecture" unit within the R&D department coordinates the development and implementation of fuel-saving technologies in the individual vehicle projects. This ensures that the market-specific fleet requirements are taken into consideration in the very early stages of vehicle development and are subject to Efficient Dynamics (ED) measures during the development process. Under the term ED, we have been successfully working on reducing fuel consumption and vehicle emissions through the development of highly efficient combustion engines, electrification respectively plug-in hybrid vehicles (PHEV) and battery electric vehicles (BEV) or e.g. lightweight construction. Because of the importance of the R&D department, oversight over CC related issues was assigned to the MBoMD. The top decision making bodies such as the "development circle" inside the R&D department are led by the MBoMD. Decisions binding for the R&D department are made there as e.g. efficient dynamics measures to reach the vehicle specific CO₂-emission targets.

(iii) The MBoMD monitors CC related issues through the top decision making bodies described above (development circle). All technical issues and all vehicle projects as well as e.g. strategic questions about electrification or digital services are discussed there. Decisions on e.g. strategic targets on vehicle fleet CO₂-emissions to be made in the BoM are analyzed technically and aligned with representatives of the corresponding departments.

B. "Chief Production Officer":

(i) The Member of the Board of Management of BMW AG production (MBoMP) leads BMW Group Production. He is accountable for all decisions for worldwide production, based on the strategic orientation and decision framework stipulated at BoM meetings being the highest body.

(ii) We are facing the challenge of conserving resources and tackling CC, also very relevant for our production processes. We require a reliable supply of resources for the production of our vehicles, and the energy we consume generates emissions. Therefore, the responsibility for CC also relies with the MBoMP. One major responsibility is the achievement of the energy and CO₂-targets for the BMW Group production network decided by the BoM. For energy efficiency our target is a 45% improvement (2006-2020). For CO₂ our target is to reduce the absolute CO₂-emissions in the production network by 20% (2015-2020) and to purchase 100% of electricity from renewable sources by 2020. The Strategy unit is responsible for monitoring and further developing yearly targets consistent with the overall 2020 targets. Together with the planning departments for the production technologies within the production department, the contribution for resource efficiency of the production sites respectively the technologies are defined and measures are agreed in terms of a target roadmap until 2020. In a similar way a target roadmap for CO₂-efficiency and purchase of green electricity is worked out. Both have flexibilities until 2020 but are fixed for the reporting year as agreed targets.

(iii) The top decision making body for production that also monitors CC related issues is the "production circle", led by the MBoMP. Decisions binding for production are made there as e.g. yearly targets or technical measures. As an example the target for energy efficiency in 2019 was aligned end of 2018 between the planning departments, the production sites as well as BMW Group's Strategy unit and decided in the "production circle". Management and control of

resource consumption along with identification of potential risks for target achievement form an integral part of environmental management at our plants. The steering function of our international environmental network controls these measures. In case half year target monitoring shows deviations, counter measures are defined and decided in the "production circle" to guarantee target achievement.

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	Sustainability, including climate-related aspects, has been integrated at all corporate levels of the BMW Group since 2009 as a strategic objective based on specific targets and metrics. Sustainability is therefore an explicit component of the company's management system. This means that sustainability as a corporate objective is broken down to the level of business areas and divisions. As a result, the personal targets set for managers include sustainability aspects and criteria which have an effect on their performance-based remuneration.

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	The compensation of the CEO has two components: Fixed remuneration consists of a base salary (paid monthly) and other remuneration elements as the use of company cars. The variable remuneration comprises a bonus, a Performance Cash Plan (PCP) and share-based remuneration components. The bonus is made up of two components, a corporate earnings-related bonus (30%) and a personal performance-related bonus (70%). The personal performance-related bonus is derived in terms of a performance factor. The Supervisory Board sets the performance factor on the basis of its assessment of the

			<p>contribution of the CEO to sustainable and long term oriented business development over a period of at least three financial years. The following citation of our annual report p. 213 explains the criteria for the performance factor: "The criteria include in particular innovation (economic and ecological, for example in the reduction of carbon dioxide emissions), the Group's market position compared to its competitors, customer focus, ability to adapt, leadership, corporate culture, promotion of compliance and integrity, contribution to the Group's attractiveness as an employer, progress in implementing the diversity concept, and activities that foster corporate social responsibility."</p>
<p>Board/Executive board</p>	<p>Monetary reward</p>	<p>Emissions reduction target</p>	<p>The compensation of Board of Management members has two components: Fixed remuneration consists of a base salary (paid monthly) and other remuneration elements as the use of company cars. The variable remuneration comprises a bonus, a Performance Cash Plan (PCP) and share-based remuneration components. The bonus is made up of two components, each equally weighted, namely a corporate earnings-related bonus (30%) and a personal performance-related bonus (70%). The personal performance-related bonus is derived in terms of a performance factor. The Supervisory Board sets the performance factor on the basis of its assessment of the contribution of the relevant Board of Management member to sustainable and long term oriented business development over a period of at least three financial years. The following citation of our annual report p. 213 explains the criteria for the performance factor: "The criteria include in particular innovation (economic and ecological, for example in the reduction of carbon dioxide emissions), the Group's market position compared to its competitors, customer focus, ability to adapt, leadership, corporate culture, promotion of compliance</p>

			and integrity, contribution to the Group's attractiveness as an employer, progress in implementing the diversity concept, and activities that foster corporate social responsibility."
Executive officer	Monetary reward	Emissions reduction target	Every Board of Management member agrees with its executive officers corporate and divisional targets in terms of balanced scorecards. Examples for divisional targets in the area of climate change are: CO2-emission reductions of the BMW Group fleet; emission, waste, and energy reduction targets for each production site and for the central departments as well as targets regarding external sustainability ratings such as Dow Jones Sustainability Index, FTSE4Good Index, and Carbon Disclosure Project. Achieving these targets is directly linked to the variable income component.
Management group	Monetary reward	Emissions reduction target	Executive officers agree detailed targets with their respective management group. As an example Senior Vice President "Corporate Strategy", agrees with Head of sustainability and environmental protection detailed targets. Some examples are: <ul style="list-style-type: none"> - Further development and implementation of the sustainability strategy in all divisions; - Integration of objectives for the corresponding year in the objective management process for plants; - Assurance of the target achievement concerning sustainability ratings such as Dow Jones Sustainability Index, FTSE4Good Index, and Carbon Disclosure Project; - Organization of the implementation and maintenance of the BMW Group wide standardized environmental management system of which one element is our database Ecofacts for all environmental data; - Support and further development of the external international sustainability network. Another example are targets agreed between plant managers and their management group for resource efficiency

			(e.g. energy consumption per vehicle produced). Achieving these targets is directly linked to the variable income component
Energy manager	Monetary reward	Efficiency project	Energy management staff has targets corresponding to energy and CO2 emission reduction, depending on their position. These targets are linked to the variable part of their remuneration. The percentage amount in general decreases (in relation to fix parts of remuneration) with decreasing responsibility. Energy managers located in our production sites worldwide as well as in central departments have various targets corresponding to climate change. They have to meet detailed targets derived from the divisional targets measured in balanced scorecard terms (at Group level). One target is for example 45% less energy consumption per vehicle produced (2006-2020). This target is broken down to all production sites with various energy managers having their responsibilities and, respectively, their targets. Achieving these targets is directly linked to the variable income component.
Environment/Sustainability manager	Monetary reward	Efficiency target	Environmental and sustainability managers e.g. in our production sites have targets corresponding climate change, depending on their position. These targets are linked to the variable part of their remuneration which in general decreases (in relation to fix parts of remuneration) with decreasing responsibility. Detailed targets are derived from the divisional targets measured in balanced scorecard terms (at Group level). Examples are: <ul style="list-style-type: none"> - 25% less CO2 in the fleet of new vehicles (2008-2020) - 45% less energy consumption per vehicle produced (2006-2020) - Targets regarding external sustainability ratings such as Dow Jones Sustainability Index, FTSE4Good Index, and Carbon Disclosure Project.

			Achieving these targets and the implementation of measures are directly linked to the variable income component.
All employees	Monetary reward	Efficiency project	The BMW Group has implemented a worldwide employee's idea management system a long time ago. In addition to the permanently active online supported suggestion scheme campaigns have been running to specific subjects, for example energy saving measures. In 2019 about 2,300 ideas were put into practice, resulting in savings of € 62.7 million, partially resulting lower levels of energy consumption and CO2-emissions. Implemented improvement ideas result in a premium paid to the employee, which is proportional to the amount of qualitative benefits (e.g. improved air quality or ergonomics) as well as cost savings.
All employees	Non-monetary reward	Efficiency project	(Sustainability and carbon saving related) Target achievement is one main criterion for the annual, individual performance appraisal and therefore does not only influence the pay out of the personal bonus but the future career of each individual as a whole.

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	2	In line with Group's internal management system, the outlook of BMW annuals report covers a period of one year.

			Opportunities and risks are assessed in the internal risk report and in the risk report of the annual report with respect to a period including the current business year and the two following years.
Medium-term	2	6	BMW Groups corporate planning considers two time periods, the so called "Long-term planning" and the "prolonged long-term planning. Our "Long-term planning" includes the detailed planning of the next six years following the current business year. We understand this as medium term horizon in the sense of CDP.
Long-term	6	12	BMW Groups corporate planning considers two time periods, the so called "Long-term planning" and the "prolonged long-term planning. Our "prolonged long-term planning" includes the timespan of an additional six years. We understand this as long term horizon in the sense of CDP.

C2.1b

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

The scope of climate change risks and opportunities (CCR&O) identification and management includes BMW Group wide direct physical risks and opportunities (R&Os) as well as indirect R&Os, e.g. from regulation and changing consumer behavior. The results of the environmental risk management process are part of the regular reporting to the board of management / supervisory board, at least twice a year and regularly for risks with significant impact.

i) Definition of substantive financial or strategic impacts:

Substantial financial or strategic impact is defined as risks with medium and high risk amounts. Risk/opportunity is defined as any event which might occur with a certain probability that could have a negative/positive impact on the achievement of targets. Main targets are: Growth, profitability, efficiency and sustainable levels of business. Materiality for prioritization is measured as amount of risk (average negative impact on earnings), including climate change related risks, for profit/loss and cash flow as well as image/reputation by the magnitude of impact and likelihood of occurrence. The amount of risks is classified as low (0-50 Mio. €), medium (>50-400 Mio. €) and high (>400 Mio. €).

ii) Quantifiable indicators to define substantive financial or strategic impact

The amount of risks is classified as low (0-50 Mio. €), medium (>50-400 Mio. €) and high (>400 Mio. €). CCR&Os are allocated to categories (regulatory, reputational, shifts in customer demand, operational, physical). Risk catalogues help the risk management network representatives to reflect/categorize and aggregate all CCR&Os. All locations (plants, logistic issues etc.) are considered as well as risks in the supply chain. Important weather related risks considered are flooding, tornados, hail or interruption of supply chains due to climate changes/availability of water. Assessment, evaluation and prioritization of CCR&Os is supported by a team of risk/insurance managers and external expertise (e.g. Allianz, Munich Re). Physical risks are covered by insurances and are part of the annual reassessment with our insurance companies. Risks reported to the centralized risk management from the network are aggregated/prioritized and reported to the board of management/supervisory board. In strategic planning material short to long term CCR&Os are reflected.

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

i) Process to identify substantive climate-related risks and opportunities

The BMW Group considers our worldwide operations within the identification process of risks/opportunities driven by climate parameters. On a market level, climate change related risks and opportunities (CCR&Os) are ongoing monitored with a short, medium and long-term time horizon.

The results of the environmental risk management process are part of the regular reporting to the board of management / supervisory board, at least twice a year and regularly for risks with significant impact.

BMW Group's process of assessing, identifying, monitoring and steering CCR&O is part of A) the enterprise risk management process (ERMP), integrated in B) the Strategy & Structure Circle resp. Board of Management (BoM) & part of C) the management process established to ensure the reduction of CO₂ emissions of BMW Group's vehicle fleet.

A) ERMP comprises early identification of R&Os, their measurement, management and monitoring in a decentralized structure. Within this internal risk management network covering all organizational levels dedicated managers are responsible for reporting and managing CCR&O. The results of the ERMP are reported to a steering committee which prioritizes R&Os (CCR&O) reported to the Board of Management.

B) In the Strategy & Structure Circle (consisting of the top mgmt. of the company divisions) tasks and measures for the climate protection strategy of the BMW Group are discussed and proposed to the Board of Management, setting the strategic course including sustainability issues.

C) The fleet CO₂ strategy, corresponding targets for each vehicle project and their fulfilment are set and monitored by corporate planning, which reports directly to the Board of Management. CO₂ targets are refined and adjusted in line with new regulations and alterations in demand and offer of new cars.

Assessment of CCR&Os at plant level and relevant central department units is carried out in terms of the ERMP by the responsible network managers. Audits for ISO14001, in place in all plants and relevant central units, verify our “on-site” CCR&O assessment and monitoring processes regularly.

These processes ensure that we identify substantive climate-related risks which are defined as risks with medium (>50-400 Mio. €) and high risk amounts (>400 Mio. €).

ii) Case study for physical risks:

Physical risks from weather extremes

For production a major physical risk could arise from weather extremes such as extreme temperatures that could cause interruptions, e.g. due to water scarcity.

BMW Risk Management uses a comprehensive risk catalogue which covers potential CCR&O and thus ensures that significant CCR&O are assessed, reported and validated in the BMW Group risk management process. In the internal risk catalogue CCR&O of “acute physical” and “chronic physical” are included in the risk category “external/global environment; environment; natural risks”, CCR&O of “upstream” are also included in the risk category “product development and manufacturing; procurement / purchasing /foreign production”. Risks related to water depend mainly on local conditions. BMW Group uses a tailor-made natural catastrophes risk analysis tool to evaluate our/supplier locations worldwide. Depending on the exact geographical position all risks are analyzed for hazards like flood, storm, extreme temperatures etc.

To mitigate production risks and leverage opportunities BMW Group’s Strategy unit is developing measures with affected departments. Resulting strategic options and measures are put forward to the Board of Management for decision. The Strategy & Structure Circle consists of the top management of the company’s divisions and prepares the decisions made by the Board of Management.

Specific examples are targets for resource efficiency (e.g. a 45% reduction in energy or water consumption from 2006 to 2020), targets for the use of renewable energies or implementation of environmental management systems in all sites worldwide.

Physical risks in supply chain

Similar physical risks could arise in BMW Groups supply chain. Due to our global supplier network (about 4500 Tier 1 suppliers of production material and an exponentially increasing number of Tier n suppliers) supply shortages could arise in several regions worldwide and affect BMW Group sites.

We apply a three step risk management and mitigation approach: Identification and analysis of locations of potential high-risk suppliers using a risk filter (and further tools), media screening and an industry-wide questionnaire (step 1).

Execution of audits and assessments on the basis of the results of the industry-wide

questionnaire as well as agreement on corrective measures (e.g. in case potential production material suppliers have not already implemented a certified environmental management system) (step 2).

Review and certification of selected supplier locations using the industry-wide sustainability questionnaire, independent sustainability audits or BMW Group sustainability assessments, supplier training as well as performance monitoring of /engagement with key suppliers/supply chains (e.g. through CDPs supply chain program) (step 3).

iii) Case study for transitional risks

Transitional risks can derive from regulation or leverage opportunities for new products, e.g. from upcoming regulations or shift in consumer preferences.

BMW Group’s Strategy unit is responsible for monitoring and further developing targets on vehicle fleet CO2-emissions to meet all regulatory requirements worldwide as well as to shape transformation with attractive, electrified products and innovative mobility services. These targets and corresponding measures together with an assessment of financial implications are aligned within the affected departments and discussed in the Product & Customer Circle (senior vice president level) and then brought to the board of management as highest body for decision.

The “Complete Vehicle Architecture” unit within the R&D department coordinates the development and implementation of fuel-saving technologies in the individual vehicle projects to achieve the CO2-targets and to leverage business opportunities with new products and services.

For example, as a result of this management process it was decided to launch three further models featuring hybrid technology, namely the BMW X1, the X2 and the BMW 3 Series Touring. Two additional all-electric models are added with the MINI Cooper SE and the BMW iX3. By 2023, the BMW Group will offer a total of 25 electrified models, more than half of them pure electric.

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	<p>Relevance: Climate-related risks from current regulation are generally relevant for BMW Group and the Automotive Industry as a whole. More specifically, the tightening of current climate-related regulation can include risks for BMW.</p> <p>Company specific example of risk type: A company specific example is the introduction of increased taxation schemes. Taxation is directly related to the total cost of ownership (TCO) for the customer. If the vehicles of a car manufacturer are especially negatively affected by an increased taxation scheme this will</p>

		<p>impact the purchase decision. The risks are sector specific, but possess an increased risk level for the BMW Group as premium car manufacturer (e.g. cars with larger engine sizes).</p> <p>E.g. in the French bonus/malus taxation scheme the values increased again in 2020 when compared to 2018 (e.g. the malus for a vehicle emitting more than 185 g CO₂/km (WLTP: 212g CO₂/km) increased from 10,500 € in 2018 to 20,000€ in 2020).</p> <p>Another example is that a couple of EU-markets focus their incentives on BEV and no longer on PHEVs (e.g. France, UK) with potential negative impact on our future PHEV sales (2019: 86,947 PHEV worldwide).</p> <p>In a similar way nearly all of our worldwide passenger car sales are affected by emission taxation and regulation schemes. If these are changed with negative impacts on sales figures as this could e.g. be the case for our PHEV offers it might result in a decrease in sales volume. E.g., a drop in sales of 1% might have an estimated impact between 150 and 250 Mio. € Gross profit, depending on the models affected.</p> <p>Inclusion: BMW Risk Management uses a comprehensive risk catalogue with experts of the risk categories responsible for validation of their risk categories. The risk catalogue also covers potential climate related risks and thus ensures that significant climate related risks are assessed, reported and validated in the BMW Group risk management process. In the internal risk catalogue climate-related risks of “current regulation” are included in the risk categories “external/global environment; new regulations” for tightening of current regulation or “product development and manufacturing; product introduction” if current regulation exposes risks in the homologation and production of vehicles.</p>
<p>Emerging regulation</p>	<p>Relevant, always included</p>	<p>Relevance: Climate-related risks from emerging regulation are generally relevant for BMW Group and the Automotive Industry as a whole.</p> <p>Company specific example of risk type: The introduction of new climate-related regulation, mostly for CO₂ or local emissions can include risks for BMW. For example, local restrictions affecting product usage in specific sectors may limit our sales in individual markets.</p> <p>More specifically we face risks as provider of premium mobility. Regulators could propose uneven load distribution to meet regional fleet targets. At the same time BMW Group as premium manufacturer has to meet high quality and comfort demands of their customers. A deciding factor in achieving e.g. a post 2021 target of EU28 is the</p>

		<p>success of e-mobility. However, the framework conditions have not yet been solidified in the majorities of states and cities. The uncertainty of regulations regarding incentives for the accelerated introduction of alternative drive vehicles and the available charging infrastructure have major influence on the volatility of the e-mobility business case. The development of market shares for battery electric and plug-in hybrid electric vehicles are not yet easily predicted. The uncertainty about stronger limits in the future and the possibility of low emission zones with stricter limits constitutes a risk. This may affect local demand for our vehicles and hence have a negative impact on sales, margins and, possibly, the residual value of these vehicles. E.g. a drop in sales of 1% might have an estimated impact between 150 and 250 Mio. € Gross profit, depending on the models affected.</p> <p>Inclusion: BMW Risk Management uses a comprehensive risk catalogue with experts of the risk categories responsible for validation of their risk categories. The risk catalogue also covers potential climate related risks and thus ensures that significant climate related risks are assessed, reported and validated in BMW Groups risk management process. In the internal risk catalogue climate-related risks of “emerging regulation” are included in the risk categories “external/global environment; new regulations” for new regulation which limit the use of BMW Group vehicles or “product development and manufacturing; product introduction” if emerging regulation exposes risks in the homologation and production of vehicles.</p>
Technology	Relevant, always included	<p>Relevance: Climate-related risks from Technology are generally relevant for BMW Group and the Automotive Industry as a whole.</p> <p>Company specific example of risk type: Climate change (CC) is a driving force for transformation of the automotive industry. Electrification is a priority area in our Strategy NUMBER ONE > NEXT, which provides us with a strategic roadmap up to 2025. We are closely monitoring technological improvements, in particular in the development of battery cells. A potential risk could be that competitors gain a competitive advantage by finding better technology solutions. Further risk could emerge from the complexity of such new technologies and its handling which could lead to increased development/quality costs. However, at the end of 2019, our vehicle portfolio included 12 all-electric or electrified models in various segments. In 2019 we sold 146,160 BEVs and PHEVs, about 6% of our total sales volume, and led e.g. the German market for electrified vehicles and ranked second in Europe. Due to our strong position in electro mobility and corresponding</p>

		<p>technologies we see CC driven technological changes as an opportunity rather than a risk. To sustain our leading role, we concentrate all our technological expertise relating to battery cells at a new competence center in Munich (Germany), where we began pooling our many years of experience and comprehensive expertise in 2019. The centre aims to make advances in battery cell technology and fully penetrate production processes. We intend to double the energy density of our battery cells by 2030 and thus increase the range for our customers. The new competence centre represents the entire value chain of the battery cell technology – from R&D, through to the composition and design of the battery cells. The BMW Group is investing a total of € 200 million in the Competence Centre and employees 200 people here.</p> <p>Inclusion: BMW Risk Management uses a comprehensive risk catalogue with experts of the risk categories responsible for validation of their risk categories. The risk catalogue also covers potential climate related risks and thus ensures that significant climate related risks are assessed, reported and validated in the BMW Group risk management process. In the internal risk catalogue climate-related risks of “technology” are included in the risk category “product development and manufacturing” for risks in the homologation process and necessary changes for the production planning of vehicles.</p>
<p>Legal</p>	<p>Relevant, always included</p>	<p>Relevance: Climate-related legal risks are generally relevant for BMW Group and the Automotive Industry as a whole. Potential risks in that category are related to compliance with the law - a basic prerequisite for our success. Applicable law provides the binding framework for the BMW Group’s worldwide activities. As a result of its global operations, we are exposed to various legal risks, including those related to climate-related regulations.</p> <p>Company specific example of risk type: A Compliance Management System is in place at BMW Group to ensure that the representative bodies, managers and staff consistently act in a lawful manner (Annual Report 2019, p.208-10). A company specific example for this risk type related to climate change is the discussion around diesel engine exhaust emissions and its future. Since 2015, the discussion has led to ongoing criticism, especially in Europe & the USA. In the course of this discussion, the impression was often created that almost all manufacturers had manipulated exhaust values. At the BMW Group, there are no activities or technical provisions that influence the test mode for recording emissions. We have a corresponding Compliance Management Systems to ensure that legal requirements are met and risks e.g. from legal prosecutions</p>

		<p>related to individual or organizational misbehavior towards emissions regulations are minimized. In 2020, the new function Technical Compliance was established to manage especially these risks. Our personnel expenses (2019: 12,451 million €) cover many full time employees being part of our worldwide compliance system.</p> <p>We believe modern diesel cars continue to have a future. Diesel engines emit 15% less CO₂ on average than petrol engines and can thus make an important contribution to achieving national and international CO₂ reduction goals. Also, our new vehicle fleet in Europe had an average fuel consumption of 5.0 litres of diesel or 6.0 litres of petrol per 100km (2019).</p> <p>Inclusion: BMW Risk Management uses a comprehensive risk catalogue with experts of the risk categories responsible for validation of their risk categories. The risk catalogue also covers potential climate related risks and thus ensures that significant climate related risks are assessed, reported and validated in the BMW Group risk management process. In the internal risk catalogue climate-related risks of "legal" are included in the risk category "litigations and contractual or compliance cooperation's violation".</p>
Market	Relevant, always included	<p>Relevance: Climate-related market risks are generally relevant for BMW Group and the Automotive Industry as a whole.</p> <p>Company specific example of risk type: More specifically changes in customer behavior, which can also be brought about by changes in attitudes, values, environmental factors and fuel or energy prices or political and public discussions can pose risks to BMW Group. A company specific example is around the political and public discussion on diesel engines. In the course of this discussion, the impression was often created that almost all manufacturers had manipulated exhaust values. At the BMW Group, there are no activities or technical provisions that influence the test mode for recording emissions.</p> <p>We offer our customers the Power of Choice. That means, customers choose the vehicle segment that best suits their living environment – we provide the right drivetrain to go with it. The popular BMW X3 is a good example of this. Four different drivetrain variants will be offered: efficient diesel and petrol, plug-in hybrid and pure electric. Mobility needs will continue to vary around the world and from region to region – in some cases, significantly. Diesel engines e.g., being one of the optional drivetrains BMW offers, emit 15% less CO₂ on average than petrol engines. Modern Euro 6 diesel vehicles and further electrification will be crucial in achieving national and international CO₂ reduction goals.</p>

		<p>However, the political and public discussions on diesel engines caused considerable uncertainty among customers and therefore adversely affect demand for diesel vehicles. BMW and MINI diesel sales were declining as of December 2019: in Germany, sales decreased by 2.6% year-on-year, by 13.9% in Europe, and by 14.1% worldwide. Over the same period, sales of electrified drive trains increased in Germany by about 58%, in Europe by about 18% and worldwide by 2.7%.</p> <p>Inclusion: BMW Risk Management uses a comprehensive risk catalogue with experts of the risk categories responsible for validation of their risk categories. The risk catalogue also covers potential climate related risks and thus ensures that significant climate related risks are assessed, reported and validated in the BMW Group risk management process. In the internal risk catalogue climate-related risks of “market” are included in the risk category “customer (market, after sales and product related services”).</p>
<p>Reputation</p>	<p>Relevant, always included</p>	<p>Relevance: Climate-related reputation risks are generally relevant for BMW Group and the Automotive Industry as a whole. Climate-related reputation risks are often closely linked to other climate-related risks.</p> <p>Specific example: Introduction of new climate-related regulation, mostly for CO2 or local emissions, can induce reputation risks specific for the BMW Group as premium manufacturer. We have to meet high quality and comfort demands of our customers. Regulators could propose uneven load distributions to meet regional fleet targets. If we would not be able to comply with CO2-emission targets as e.g. post 2021 EU28 CO2-emission targets (2019: about 40% of BMW Group cars are sold in EU 28) we could face negative press with corresponding negative impact on our reputation and customer churn in addition to potential penalties. Consequently, benefits on continental or national levels might drop, resulting in an impact on the overall annual result. E.g., a drop in sales of 1% might have an estimated impact between 150 and 250 Mio. € Gross profit, depending on the models affected.</p> <p>However, BMW Group increases continuously the CO2 efficiency of its vehicles. Since 2007 BMW Group’s Efficient Dynamics (ED) is a comprehensive technologic approach. It includes efficient dynamics technologies such as highly-efficient automobiles with gradually refined combustion engines, lightweight construction, improved aerodynamics and coordinated energy management as well as Plug-in hybrids and battery electric vehicles.</p> <p>Inclusion: BMW Risk Management uses a comprehensive risk catalogue with</p>

		<p>experts of the risk categories responsible for validation of their risk categories. The risk catalogue also covers potential climate related risks and thus ensures that significant climate related risks are assessed, reported and validated in the BMW Group risk management process including their reputational effects. Additional to financial risks, significant reputational risks (including those stemming from financial risks) are reported at least twice a year to the risk management steering committee and the board of management. These include risks related to climate.</p>
Acute physical	Relevant, always included	<p>Relevance: Acute climate-related physical risks are generally relevant for BMW Group and the Automotive Industry as a whole. Especially if the number of natural catastrophes rises, BMW Group could be affected both on the demand and production side.</p> <p>Specific example: On the one hand natural disasters could have a lasting negative impact on the global economy and international capital markets. As another example related production stoppages and downtimes represent risks which the BMW Group addresses through appropriate precautions. These risks vary widely with the degree of damage. E.g. a tornado could damage the BMW Group plant Spartanburg (USA) and cause a breakdown of production up to 12 months. This would represent a damage in the amount of up to 5 billion €. However, due to our flexible production system we can shift volumes between plants and/or we can catch up lost volumes in the affected plant itself. In combination with our worldwide insurance solution possible financial implications can be reduced to a large extend.</p> <p>Inclusion: BMW Risk Management uses a comprehensive risk catalogue with experts of the risk categories responsible for validation of their risk categories. The risk catalogue also covers potential climate related risks and thus ensures that significant climate related risks are assessed, reported and validated in the BMW Group risk management process. In the internal risk catalogue climate-related risks of “acute physical” are included in the risk category “external/global environment; environment; natural risks”.</p>
Chronic physical	Relevant, always included	<p>Relevance: Chronic climate-related physical risks are generally relevant for BMW Group and the Automotive Industry as a whole. If economic and living conditions worsen, e.g. through water shortages, BMW Group could be affected both on the demand and production side.</p> <p>Specific example:</p>

		<p>On the one hand worsening living and economic conditions and potential international conflicts arising out of consequential migration movements could have a lasting negative impact on the global economy and international capital markets. As another example production stoppages and downtimes e.g. due to water shortages represent risk, even though BMW Group production sites are planned accordingly to avoid such risks.</p> <p>These risks vary widely with the interruption duration. E.g. a one week breakdown of production of our Rosslyn site (South Africa) located in a region with water stress could lead to an estimated impact between 10 and 15 Mio. € Gross profit (inherent risk before mitigation). However, due to our flexible production system we can shift volumes between plants and/or we can catch up lost volumes in the affected plant itself. In combination with our worldwide insurance solution possible financial implications can be reduced to almost zero.</p> <p>Inclusion: BMW Risk Management uses a comprehensive risk catalogue with experts of the risk categories responsible for validation of their risk categories. The risk catalogue also covers potential climate related risks and thus ensures that significant climate related risks are assessed, reported and validated in the BMW Group risk management process. In the internal risk catalogue climate-related risks of “chronic physical” are included in the risk category “external/global environment; environment; natural risks”.</p>
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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

Emerging regulation

Mandates on and regulation of existing products and services

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

i) General Description: Emission regulations (e.g. EU28, USA or China) are implemented and challenge car manufactures to adapt their products to meet these standards (lower emission figures) over time, e.g. the EU CO₂-Regulation demands a value of 95 gCO₂/km for the year 2021. Further, the trend towards megacities and the overall traffic and emission situation within those cities will probably lead to a growing number of low emission zones in urban areas, in which only vehicles, that meet strict emission requirements, will be allowed to enter. For car manufacturers these regulatory risks may inhibit the need for significant short-term investments to avoid risks such as payments of penalties or effects on local demand for the BMW Group vehicles up to loss of allowances to offer individual mobility at all (strict emissions zones), with negative impact on sales or margins of these vehicles.

(ii) Company specific: The risks from air pollution limits exist for all members of the automotive sector. BMW Group faces risks as provider of premium mobility: Regulators (e.g. in EU, USA, China) could propose uneven reduction requirements to meet regional fleet targets. BMW Group as premium manufacturer has to meet high quality and comfort demands of their customers. To achieve e.g. the 95g/km target of EU28 we need a significant share of electrified vehicles. However, the framework conditions for e-mobility have not yet been solidified in the majorities of states and cities. The uncertainty of regulations regarding incentives for the accelerated introduction of alternative drive vehicles (granting super credits for fleet limits, user benefits in urban areas, taxation etc.) and the available charging infrastructure have major influence on the volatility of the e-mobility business case and vehicle sales. Furthermore, short term regulatory changes against our expectations such as tightened emission limits or introduction of new low emission or prohibited zones could reduce the product portfolio in some world regions offered to customers. Those effects entail the risk of a decline in vehicle sales and margins.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

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

150,000,000

Potential financial impact figure – maximum (currency)

250,000,000

Explanation of financial impact figure

Nearly all of our worldwide passenger car sales are affected by emission taxation and regulation. If the taxation or regulation is changed on a short notice (1-2 years) adversely to expectations it might result in a decrease of sales volume. Consequently, benefits on continental or national levels might drop, resulting in an impact on the overall annual result. E.g., BMW sales totalled to 2,538,367 units in 2019. A drop in sales of 1% might have an estimated impact between 150 and 250 Mio. € Gross profit, depending on the models affected.

The figures depend on the regional changes in taxation and regulations and the models hereby affected.

Cost of response to risk

6,419,000,000

Description of response and explanation of cost calculation

CASE STUDY: Details of BMW's response to the risk

Emission regulations are implemented and challenge car manufactures to adapt their products to meet these standards (lower emission figures) over time. Further, the trend towards megacities and the overall traffic and emission situation within those cities will probably lead to a growing number of low emission zones in urban areas, in which only vehicles, that meet strict emission requirements, will be allowed to enter.

Regulations are monitored on a regular basis.

We anticipate uncertainty in future taxation systems by increasing the CO₂ efficiency of our vehicles. BMW Group's Efficient Dynamics (ED) is a comprehensive technologic approach. It includes efficient dynamics technologies (e.g. gradually refined combustion engines) as well as PHEVs and BEVs.

In order to cope with regulations BMW Group invests into R&D to increase CO₂-efficiency. CO₂ management is included in the corporate strategy (target setting, monitoring) and the product development process. We invest major budgets in CO₂-reduction ED technologies each year. For example, the BMW 520d and 520d Touring models were launched with 48-volt technology in 2019. The mild hybrid technology with a 48-volt electrical system will be gradually rolled out for our diesel and petrol engines in all series. This will help to further reduce the CO₂ emissions of our conventional drive vehicles by 5 to 7%.

Furthermore, we invest a significant share of the R&D expenditure in PHEVs/BEVs. Our portfolio will contain 25 electric vehicles in 2023, more than half being BEVs. We reached our target in 2019 for half a million BMW Group BEVs/PHEVs on the road. In 2019, BMW launched three further models featuring hybrid technology, namely the BMW X1, the X2 and the BMW 3 Series Touring. The MINI Cooper SE, an all-electric model, is available for order since its launch in 2019. The next step is the launch of the BMW iX3 model in 2020, a model with a fully electric drivetrain. E.g. in EU28 we reduced fleet CO₂-emissions by 42.2% between 1995 and 2019.

Explanation: COST OF MANAGING THE RISK

The cost of management is set equal to R&D expenditures in 2019 (6.419 billion €). Due

to competitive advantage issues we are not able to give here exact numbers but state that ED technologies / electrification took a significant share of the 2019 R&D expenditure.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Market

Changing customer behavior

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

(i) General Description: Additional regulations focus on the taxation of the vehicles in the markets. Taxation is directly related to the total cost of ownership (TCO) for the customer. If the vehicles of a car manufacturer are especially negatively affected by an increased taxation scheme this will impact the purchase decision.

The primary market risk driver is therefore a CO₂-regulation induced customer preference.

(ii) Company Specific: The risks are sector specific, but possess an increased risk level for the BMW Group as premium car manufacturer (e.g. cars with larger engine sizes). If the BMW Group products are negatively affected by an increased taxation scheme this will impact the purchase decision. Examples for the BMW Group on vehicle level: the values of the French bonus/malus scheme valid in 2020 increased again when compared to previous years (e.g. the malus for a vehicle emitting more than 185 g CO₂/km (WLTP 212g CO₂/km) increased from 10.500 € in 2018 to 20.000€ in 2020). For the future we expect further tightening of such systems. A couple of EU-markets focus their incentives on BEV and no longer on PHEVs (e.g. France, UK). A concrete example is the UK Plug-in grant that has been removed in October 2018, leading to a noticeable decrease in PHEV sales in this market. For the BMW Group the compliance with existing legislation and regulation is a basic requirement for the sale of vehicles and profitability of the company. The BMW Group specific risks regarding emission regulation have been minimized by BMW Groups anticipation of future limits and the implementation in the Efficient Dynamics strategy. This resulted in the actual product portfolio with highly efficient vehicles in the premium segment. Nevertheless, the uncertainty about future tax schemes negatively affecting the BMW Group portfolio constitutes a risk to the BMW Group.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

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

150,000,000

Potential financial impact figure – maximum (currency)

250,000,000

Explanation of financial impact figure

Nearly all of our worldwide vehicle sales are affected by emission taxation / regulation. If taxation is changed on a short notice (1-2 years) adversely to expectations it might result in a decrease of sales volume because e.g. taxation is directly related to the total cost of ownership (TCO) for the customer. If the vehicles of a car manufacturer are especially negatively affected by an increased taxation scheme this will impact the purchase decision.

Consequently, benefits on continental or national levels might drop, resulting in an impact on the overall annual result. E.g., BMW sales totalled to 2,538,367 units in 2019. A drop in sales of 1% might have an estimated impact between 150 and 250 Mio. € Gross profit, depending on the models affected. The figures depend on the regional changes in taxation and regulations and the models hereby affected.

Cost of response to risk

6,419,000,000

Description of response and explanation of cost calculation

CASE STUDY: Details of BMW's response to the risk

Additional regulations focus on the taxation of the vehicles in the markets. Taxation is directly related to the total cost of ownership (TCO) for the customer. If the vehicles of a car manufacturer are especially negatively affected by an increased taxation scheme this will impact the purchase decision. Taxations are monitored on a regular basis. We anticipate uncertainty in future taxation systems by increasing the CO2 efficiency of our vehicles. BMW Group's Efficient Dynamics (ED) is a comprehensive technologic approach. It includes efficient dynamics technologies (e.g. gradually refined combustion engines) as well as PHEVs and BEVs.

In order to cope with regulations BMW Group invests into R&D to increase CO2-efficiency. CO2 management is included in the corporate strategy (target setting, monitoring) and the product development process. We invest major budgets in CO2-

reduction ED technologies each year. For example, the BMW 520d and 520d Touring models were launched with 48-volt technology in 2019. The mild hybrid technology with a 48-volt electrical system will be gradually rolled out for our diesel and petrol engines in all series. This will help to further reduce the CO₂ emissions of our conventional drive vehicles by 5 to 7%.

Futhermore, we invest a significant share of the R&D expenditure in PHEVs/BEVs. Our portfolio will contain 25 electric vehicles in 2023, more than half being BEVs. We reached our target in 2019 for half a million BMW Group BEVs/PHEVs on the road. In 2020 BMW will launch three further models featuring hybrid technology, namely the BMW X1, the X2 and the BMW 3 Series Touring. Two additional all-electric models will be added with the MINI Cooper SE and the BMW iX3. E.g. in EU28 we reduced fleet CO₂-emissions by 42.2% between 1995 and 2019.

Explanation: COST OF MANAGING THE RISK

The cost of management is set equal to R&D expenditures in 2019 (6.419 billion €). Due to competitive advantage issues we are not able to give here exact numbers but state that ED technologies / electrification took a significant share of the 2019 R&D expenditure.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

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

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

(i) Clear Description: Climate change causes a higher frequency of temperature extremes and extreme weather events (e.g. floods, hail, tornados and hurricanes). Those extremes may lead to damaged production sites, damaged transportation infrastructure or disruptions in production capacity due to affected energy structures or shortages in energy or water availabilities.

(ii) Company specific: Production sites of BMW Group in vulnerable regions are affected. This is for example of particular concern for the production sites in the USA (South Carolina), South Africa, India or Brazil as well as partner plants, e.g. in Egypt, Malaysia and Vietnam (e.g. temperature extremes and extreme dryness). These sites

represent about 20% of the total BMW Group vehicle production volume. The BMW Group faced several damages due to extreme weather events in the last years. In succession BMW was under pressure to reproduce the ordered vehicles. A feasibility study was carried out for evaluation of natural risks (including extreme weather events) regarding all BMW productions sites worldwide. For example, our production site in Spartanburg (U.S.) could be particularly affected by the higher frequency of tornados.

Time horizon

Short-term

Likelihood

Very unlikely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

5,000,000,000

Explanation of financial impact figure

These vary widely with the degree of damage. E.g. a tornado could damage plant Spartanburg (USA) and cause a breakdown of production up to 12 months. In 2019, 411,620 units were produced at this site. Depending on the damage lost revenue would be between 0 and 5 billion € for this plant.

However, due to our flexible production system we can shift volumes between plants and/or we can catch up lost volumes in the affected plant itself. In combination with our worldwide insurance solution possible financial implications can be reduced to a large extend.

Cost of response to risk

210,000,000

Description of response and explanation of cost calculation

CASE STUDY: Details of BMW's response to the risk

Climate change causes a higher frequency of temperature extremes and extreme weather events (e.g. floods, hail, tornados and hurricanes). Those extremes may lead to damaged production sites, damaged transportation infrastructure or disruptions in production capacity due to affected energy structures or shortages in energy or water availabilities.

BMW Group uses a tailor-made natural catastrophes risk analysis tool. Depending on individual vulnerability, exact geographical position and elevation all relative risks (in %)

are analyzed for hazards like flood, storm, extreme temperatures etc. Each existing & new location is analyzed and mitigation measures are taken.

Specific analyzing tools include a site selection tool. All results are considered for choosing new locations and defining mitigation measures. Vulnerability to direct physical climate risks are evaluated at 100% of production sites & preparedness plans exist. E.g. in the planning of our new plants in Brazil and Mexico, risks of flooding after hard rain are included. E.g., for Spartanburg, a plan to minimize damages in case of extreme weathers exists (e.g. removal of vehicles from danger zones). For remaining risks tailor-made insurance contracts covering risks at our locations worldwide. Complementary we increase energy or water efficiency in our production network to increase resource independency. Since 2006 we reduced energy consumption per vehicle produced by 40.4% and water consumption by 28.8%.

Explanation: COST OF MANAGING THE RISK

The cost of managing the risk contain: Insurance premiums for our locations including the production facilities and supply chain interruptions, which were below 50 Mio. € (2019). Tool development and personnel costs of risk engineers made several 100,000 €. Resource efficiency investments were 159 million €.

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Upstream

Risk type & Primary climate-related risk driver

Acute physical

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

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

(i) Clear Description: Climate change causes a higher frequency of temperature extremes and extreme weather events (e.g. floods, hail and hurricanes). Those extremes may lead to damaged supply plants, which in turn may lead to supply chain interruptions and thus shortages in supply for BMW Group.

(ii) Specific: BMW's supply chain in vulnerable regions is affected by changes in physical climate parameters. BMW Group production sites are supplied with production materials from local suppliers as well as from suppliers located all over the world. E.g. local suppliers of our site in Spartanburg (South Carolina) could be affected by a

tornado with corresponding interruptions in material supply. In a similar way other sites in the BMW Group production network could be affected by supply chain interruptions from suppliers located in vulnerable regions of the world.

Depending on the importance and substitutability of a certain component, malfunctions of the supply chain for a single part can lead to failures or even loss of production at BMW production sites. Similar to the events in Japan in 2011, incidents induced by climate change can lead to immense shortfalls of supply. As potential consequence operation of one or more BMW Group production sites must stop, e.g. a one-week breakdown could have a negative impact of up to 400 Mio. € Gross profit.

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

0

Potential financial impact figure – maximum (currency)

400,000,000

Explanation of financial impact figure

Climate change causes a higher frequency of temperature extremes and extreme weather events (e.g. draughts, floods) which could lead to supply chain interruptions. Depending on the importance and substitutability of a certain component, malfunctions of the supply chain for a single part can lead to failures or even loss of production at BMW production sites. As potential consequence operation of BMW Group production sites must stop, e.g. one week breakdown could have a negative impact of up to 400 Mio. € Gross profit assuming that the entire production worldwide is impacted. In 2019, this would have affected 2,564,025 units worldwide. Therefore, we arrived at an estimated financial impact between 0 and 400 Mio. €.

Cost of response to risk

51,000,000

Description of response and explanation of cost calculation

CASE STUDY: Details of BMW's response to the risk

Climate change causes a higher frequency of temperature extremes and extreme weather events (e.g. draughts, floods) which could lead to supply chain interruptions. BMW Group uses a tailor-made natural catastrophes risk analysis tool to evaluate supplier sites. Risks are analyzed for hazards like flood, storm etc. On basis of individual risk parameters each (own and supplier) location worldwide can be analyzed. A clear internal process was introduced. Fall backs and contingency plans have been developed. Insurances cover relevant remaining risks.

Specific analyzing tools are used, e.g. a site selection tool. All results are considered for choosing specific suppliers /supplier locations and to define mitigation measures with suppliers. To minimize shortages, supplier's production locations are considered before nomination. We developed fall back and contingency plans in case of a shortfall of critical parts. Flexible production structures allow us to respond to business interruptions caused by physical climate drivers. E.g. if the X3 production in Spartanburg (USA) would be shut down due to a local supplier we can e.g. shift volumes to plant Rosslyn (South Africa) or Shenyang (China).

Tailor- made "state-of-the-art" insurance contracts cover known remaining risks for interruptions of the supply chain.

Explanation: COST OF MANAGING THE RISK

The cost of managing the risk contain: Insurance premiums for supply chain interruptions and BMW Group locations including the production facilities were below 50 Mio. €. Some FTEs analyze & manage supply chain risks from climate change (about 1 Mio. € personnel costs).

Comment**Identifier**

Risk 5

Where in the value chain does the risk driver occur?

Upstream

Risk type & Primary climate-related risk driver

Chronic physical

Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

(i) Clear Description: Changes in physical climate parameters can induce changes in natural resources and therefore the availability of input materials.

(ii) Specific: The availability of input materials for BMW's suppliers such as water and

energy can decrease. As a consequence, the price for these goods could rise and impose additional costs to BMW's suppliers and in consequence to BMW Group. Energy is a significant input factor for BMW Groups supply chain. Life cycle assessments show that the energy needs in the whole BMW Group supply chain for vehicle production are about 86,000,000 MWh in 2019. If the energy costs increase e.g. in average by 5% in the whole supply chain, additional costs could be between 100 and 200 million €.

Time horizon

Short-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

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

100,000,000

Potential financial impact figure – maximum (currency)

200,000,000

Explanation of financial impact figure

Changes in physical climate parameters can induce changes in the availability of natural resources. The price of water and energy can increase. If the risk materializes via suppliers and would increase in average the energy costs in the whole supply chain in the magnitude of e.g. 5%, this would represent an increase of purchasing costs between 100 and 200 million € depending upon the affected regions. To calculate the impact we multiplied an average energy price estimation with the total energy consumption worldwide (86 million MWh).

The figure depends on the severity of the physical change parameters and its effects on the availability and pricing of natural resources.

Cost of response to risk

531,000

Description of response and explanation of cost calculation

CASE STUDY: Details of BMW's response to the risk

Changes in physical climate parameters can induce changes in natural resources and therefore the availability of input materials. Risks of scarcity of natural resources are most directly tackled by maximizing resource efficiency in the supply chain and jointly

developing solutions, e.g. for re-using and recycling materials.

Resource efficiency is accessed e.g. via the CDP supply chain programme (over 78% of production-relevant procurement volume in 2019, identified potentials are addressed/improvements are discussed on top management level in supplier performance reviews.

We support shared learning within our supply chain, e.g. through our forum “Learning from the Supplier”. Our Supplier Innovation Awards incentivize especially innovative supplier achievements. Trainings on climate change risks/natural hazards raise awareness among the purchasers and suppliers.

Furthermore, life Cycle Engineering helps to achieve substantial improvements from one vehicle generation to the next. E.g. targets for the share of recycled materials are set to support circular economy, CO₂- as well as cost-efficiency. E.g. up to 20% of the thermoplastic materials in our vehicles are now made from recirculates and high-strength cast aluminum parts consist of up to 50% of secondary aluminum.

Explanation: COST OF MANAGING THE RISK

The cost of managing the risk contain: The CDP supply chain programme costs approximately 31,000€ in 2019. The Supplier Innovation Awards total costs were above 1 Mio €. They take place every two years, this is why we split the costs in half (500,000 € per annum). Several full time employees work on sustainability and climate change in R&D and purchase department.

Comment

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

(i) Clear Description: The automobile industry is highly affected by future standards and regulations. Especially manufacturers who implemented sustainability strategies at a later stage possibly face high development costs to fulfil future requirements. In contrast early adapters may earn a premium on relatively lower running development costs but also might be able to profit from higher sales due to an earlier penetration of the market.

(ii) Company specific: As a result of our Efficient Dynamics strategy launched already in 2000 the BMW Group fulfils all relevant requirements from standards and regulation and is in good position in comparison to other premium manufacturers. This position provides an important opportunity to the company as it is key to the fulfilment of international agreements, air pollution limits, product efficiency regulation, etc. In 2019 sales volume increased by 2.2% when compared to 2018. A contribution is a 2.7% increase in sales volume of plug-in hybrid electric vehicles (PHEV) and battery electric vehicles (BEV). We sold 146,160 PHEV and BEV worldwide. In Europe BMW Group leads the market for PHEV and BEV. This in turn forms the basis for continuing to invest, e.g. in further efficiency measures, new products and e-mobility to address proactively future regulatory requirements. In 2019, we reached our aim to have half a million electrified BMWs and MINIs on the roads. In 2023 our portfolio will incorporate 25 electrified models (more than half fully electric). We expect a share of BEVs/PHEVs of 15-25% in 2025. Therefore, BMW Group will be able to handle future requirements and maintain a competitive advantage in terms of regulatory requirements.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

150,000,000

Potential financial impact figure – maximum (currency)

250,000,000

Explanation of financial impact figure

It is difficult to estimate the financial implications of this opportunity as we cannot foresee the constantly changing regulations for our relevant markets and the impact of changing customer needs. Based on historical information about our customers' behavior regarding technological changes we expect a rise in future sales. Compared to competitors we had a rise in sales (BMW sales units totaled to 2,538,367 units in 2019) due to our efficient dynamics strategy of at least 1% corresponding to approximately 150 to 250 Mio. € Gross profit annually, depending on the vehicles affected.

Cost to realize opportunity

6,419,000,000

Strategy to realize opportunity and explanation of cost calculation

CASE STUDY: Details of BMW's response to the opportunity

A competitive advantage is the result of anticipating regulation and changing customer demands in the innovation management

BMW Group invests into R&D to increase CO₂-efficiency. CO₂ management is included in the corporate strategy (target setting, monitoring) and the product development process (implementation of measures). BMW Group's Efficient Dynamics (ED) strategy is a comprehensive technologic approach. It includes efficient dynamics technologies (e.g. gradually refined combustion engines) as well as PHEVs and BEVs.

Company-specific examples) We invested major budgets in CO₂-reduction ED technologies each year. For example, the BMW 520d and 520d Touring models were launched with 48-volt technology in 2019. The mild hybrid technology with a 48-volt electrical system will be gradually rolled out for our diesel and petrol engines in all series. This will help to further reduce the CO₂ emissions of our conventional drive vehicles by 5 to 7%.

We invest a significant share of the R&D expenditure in PHEVs/BEVs. Our portfolio will contain 25 electric vehicles in 2023, more than half being BEVs. We reached our target in 2019 for half a million BMW Group BEVs/PHEVs on the road. In 2019, BMW launched three further models featuring hybrid technology, namely the BMW X1, the X2 and the BMW 3 Series Touring. The MINI Cooper SE, an all-electric model, is available for order since its launch in 2019. The next step is the launch of the BMW iX3 model in 2020, a model with a fully electric drivetrain. E.g. in EU28 we reduced fleet CO₂-emissions by 42.2% between 1995 and 2019.

Explanation: Cost to realize the opportunity

Our cost to realize the opportunity is set equal to R&D expenditures in 2019 (6.419 billion €). Due to competitive advantage issues we are not able to give here exact numbers but state that ED technologies / electrification took a significant share of the 2019 R&D expenditure.

Comment

Identifier

Opp2

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

(i) Clear Description: Carbon Taxes impose higher costs for car pool owners. Consequently, car pool owners could decide to switch to new and more efficient cars. The switch to new and more efficient cars provides opportunities for manufacturers of these cars. E.g. in the French bonus/malus taxation scheme the values increased again in 2020 when compared to 2018 (e.g. the malus for a vehicle emitting more than 185 g CO₂/km (WLTP: 212g CO₂/km) increased from 10,500 € in 2018 to 20,000€ in 2020). For the future we expect further tightening of such systems.

(ii) Company specific: A major market of the BMW Group is the management of car fleets. Due to the Efficient Dynamics strategy, BMW Group implemented fuel efficiency technology packages in the standard configuration in all vehicles and launched already the BMW i8, the BMW X1, X2, X3, X5, the 2 / 3 / 5 / 7 series models and a MINI Countryman model with plug-in-hybrid powertrain. Due to this strategy BMW Group has the broadest offer of electrified vehicles (PHEV, BEV) among its competitors. The switch of customers to new and more efficient cars provides opportunities for BMW Group. Due to the broad range of efficient fleet cars as well as PHEV and e-vehicle offerings BMW Group is likely to be a beneficiary of the described process. E.g. in Germany BMW Group was market leader and ranked second in Europe in 2019 for electrified vehicles.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

65,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

BMW Group provides financing for fleet customers and fleet management under the brand “Alphabet” in 19 countries. In addition, international customers are serviced by Alphabet cooperation partners in numerous other countries.

The financial impact is given by higher sales due to competitive advantage from an increased fuel and carbon efficiency and decreased total cost of ownership. Sales increase, including effects from our competitive positioning in fuel efficiency, is about 65 million € annually. This is reflected e.g. by a 3% increase in the number of fleet contracts for BMW Group vehicles during the financial year 2019.

Cost to realize opportunity

6,419,000,000

Strategy to realize opportunity and explanation of cost calculation

CASE STUDY: Details of BMW’s response to the opportunity

Early identification of changing consumer behavior and development of CO₂-efficient products were essential to gain a competitive advantage with fleet customers being ownership cost and CO₂-emission aware clients.

We invest into R&D to increase CO₂-efficiency. CO₂ management is included in the corporate strategy (target setting, monitoring) and the product development process (implementation of measures). BMW Group’s Efficient Dynamics (ED) strategy is a comprehensive technologic approach. It includes ED technologies (e.g. gradually refined combustion engines) as well as PHEVs and BEVs.

Company-specific examples) E.g. Direct injection in combination with variable valve control in all 3/4/6/8/12 cylinder gasoline engines or Auto Start Stop leads to high CO₂ efficiency. We offer plugin hybrid drivetrains for the 2, 3, 5, 7 Series, the X1, X2, X3, X5 and the MINI Countryman as well as in the BMW i8 and as BEV the BMW i3 and the MINI Cooper SE. Our portfolio will contain 25 electric vehicles in 2023, more than half being BEVs. Alphabet offers BMW i3 BEVs as well as e.g. 2, 3, 5 or 7 series PHEV models and introduced these vehicles into its Corporate Car Sharing offer AlphaCity.

Explanation: Cost to realize the opportunity

Cost of management is set equal to R&D expenditures in 2019 (6.419 billion €). Due to competitive advantage issues we are not able to give here exact numbers but state that ED technologies / electrification took a significant share of the 2019 R&D expenditure.

Comment

Identifier

Opp3

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

(i) Clear Description: Changes in consumer behavior may occur due to rising consumer awareness on the subject of sustainability including climate change and rising costs for fuel use (fuel price, carbon taxes, and city tolls). Consumers with higher preferences for ecology and cost-efficiency may shift the focus on the CO₂-efficiency of products as well as the ecological reputation of the company offering the products. The shift of focus towards CO₂ efficiency and sustainability provide opportunities (e.g. increased sales and new customers) for car manufactures with respective technologies and reputation.

(ii) Company specific: Particularly in the premium car sector the effect of brand reputation is essential. BMW Group offers CO₂-efficient cars and is sector leader in various key performance indicators regarding the sustainability of its production. We have been introducing consumption- and emission reducing technologies with the technology package "Efficient Dynamics". Our progress in this field is receiving recognition from customers and has thereby given the BMW Group a competitive edge, particularly in markets where a CO₂-based vehicle tax is in place as in many countries of EU28. This is e.g. reflected by our market leadership in Europe for plug-in hybrid vehicles (PHEV) and battery electric vehicles (BEV). Furthermore, services improving the eco-efficiency of driving, such as traffic intensity monitoring or the choice of drive modes such as EcoPro or applications easing the interconnection with other mobility services as public trains, can improve the ecological footprint of the customer.

Therefore, changing consumer behavior offers opportunities for the BMW Group (e.g. increased sales and new customers). An additional profitable line has been created by offering innovative mobility services. E.g. our premium car-sharing services SHARE NOW, a joint venture with Daimler AG, had several million customers in 27 cities and 14 countries used with a total of 3,505 electric cars in the fleet. Also, due to the digital parking service PARK NOW, also part of the joint venture with Daimler AG, a number of customers running into the middle double-digit million range in more than 1,346 cities were able to find and pay for parking spaces more quickly and easily.

BMW Group plans to sustain that competitive advantage and further explore the described opportunities in the future.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

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

150,000,000

Potential financial impact figure – maximum (currency)

250,000,000

Explanation of financial impact figure

The BMW Group has early established a competitive advantage in the segment of premium cars based on Efficient Dynamics. Information about customer behavior regarding technological changes points to a rise in future sales. Compared to competitors our sales rose due to our Efficient Dynamics strategy by at least 1% corresponding to approximately 150 to 250 Mio. € Gross profit annually, depending on the vehicles affected. New forthcoming technical features may lead to a further rise of that figure.

Cost to realize opportunity

6,419,000,000

Strategy to realize opportunity and explanation of cost calculation

CASE STUDY: Details of BMW's response to the opportunity

With rising awareness of ecologic issues BMW Group can profit from a change of consumer demand by investing in CO2 efficient products and services. The achievements in fuel-efficiency have given us a competitive advantage. The efficient dynamics (ED) strategy addresses CO2 efficiency in our vehicles. Our mobility services (e.g. the car sharing offers SHARE NOW) or connectivity services (e.g. real time traffic information or PARK NOW helping drivers to find free routes/parking places) are key areas to address changing customer needs.

Company-specific examples) (1) ED technologies: E.g. direct injection & variable valve control in all gasoline engines or Auto Start Stop lead to high CO2 efficiency. (2) We offer PHEV models (2, 3, 5, 7 Series, the X1, X2, X3, X5, the MINI Countryman, BMW i8) and as BEV the BMW i3 and the Mini Cooper SE. We lead e.g. the BEV/PHEV German market and ranked second in Europe.

(3) Services: E.g. o our premium car-sharing services SHARE NOW, a joint venture with Daimler AG, had several million customers in 27 cities and 14 countries used with a total of 3,505 electric cars in the fleet. Also, due to the digital parking service PARK NOW, also part of the joint venture with Daimler AG, a number of customers running into the middle double-digit million range in more than 1,346 cities were able to find and pay for parking spaces more quickly and easily.

With the investment fund BMW i Ventures (500 Mio. € venture capital) we invest in startups in areas like mobility services and e-mobility.

Explanation: Cost to realize the opportunity

Cost of management is set equal to R&D expenditures in 2019 (6.419 billion €). Due to competitive advantage issues we are not able to give here exact numbers but state that ED technologies / electrification / development of services took a significant share of the 2019 R&D expenditure.

Comment

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Markets

Primary climate-related opportunity driver

Other, please specify

Increased capital availability

Primary potential financial impact

Increased access to capital

Company-specific description

(i) Clear Description: The number of sustainable investment funds operating in Europe and US is growing. Private investors look upon sustainability ratings as indicator for future performance and therefore may grant credits at lower interest rates. Companies with a good sustainability rating could therefore profit from those lower interest rates and have a competitive advantage against other companies.

(ii) Company specific: Many ratings and awards attest the BMW Group sustainability leadership. Efficient technologies, solutions for sustainable mobility, and clean production are just some of the aspects that ensure the leading role of the BMW Group regarding sustainability. Market research and media analyses show that the corporate image of the BMW Group is influenced very positively by its sustainability performance, thus increasing its attractiveness for potential investors. The reputation is directly influencing our credit rating and thus our funding costs for the financial service business. The BMW Group has a long-term credit rating of "A2" by Moody's and A by "Standard & Poor's" – which is the best rating for an European OEM and the second best rating of all OEMs worldwide. We are since many years one of the leading companies in the sustainability ratings CDP and DJSI. In 2019, the BMW Group was the only German automobile manufacturer to be listed once again in the DJSI "World" and "Europe" and

is the only company in the automotive industry that has been continuously listed on the index since the very beginning.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

100,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Our excellent sustainability reputation is directly influencing our credit rating and thus our funding costs for the financial service business (e.g.: a potential advantage could be -0,10%-points interest rate relative to our competitors, which equals approximately 100 million € income).

Cost to realize opportunity

12,451,000,000

Strategy to realize opportunity and explanation of cost calculation

CASE STUDY: Details of BMW’s response to the opportunity
 Ecological reputation relies on the ecological performance of BMW Group and its products. Among other objectives, to maintain BMW’s good reputation regarding sustainability we invest in efficient technologies, solutions for sustainable mobility and clean production. Accompanying sustainability performance communications are essential to keep investors informed about progress.

Company-specific examples) Basis for our reputation are the results achieved in product and production efficiency. BMW efficient dynamics technologies and a broad range of PHEV in our main product lines and BEV (2019: 146,160 PHEVs/BEVs sold) as well as mobility services add to the substances behind our reputation. Likewise contributes our “Clean Production” approach to reduce negative impacts on the environment (e.g. - 71.4% in CO2 emissions per vehicle produced since 2006).

We improve image and reputation by transparent communication e.g. through our annual report & the sustainable value report, ratings such as DJSI / CDP or investor relation meetings and conferences.

Explanation: Cost to realize the opportunity
 Improving resource & CO2-efficiency in our operations / of our products is integral part when developing & realizing solutions to meet our customer's needs. People are behind all that which is why we set management costs equal to personnel expenses (12,451 million € in 2019). These contain also several FTEs (e.g. in Investor Relations) to realize a transparent communication to all stakeholders.

Comment

C3. Business Strategy

C3.1

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

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

C3.1a

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

Yes, qualitative and quantitative

C3.1b

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

Climate-related scenarios and models applied	Details
Other, please specify <ul style="list-style-type: none"> • Environmental profit and loss estimate 	Description of (a) scenario identification, (b) time horizon and company relevance and (c) areas considered: (a) We performed an environmental profit and loss calculation for one of our best selling cars (3 series). Based on the economic model of multiregional input- output analysis as well as quality-assured data of international environment and resource statistics we analyzed GWP, water depletion as well as airborne pollutants (e.g. PM10/PM2.5, NMVOC, NOx, SO2 or NH3) and land use as impact categories. From these, following the corresponding impact pathways until the so called "endpoints" human health, impact on nature and human made environment (Eco toxicity, human toxicity, damage to human made environment such as buildings) we derived price tags caused by these impacts (external costs). Scenario analysis is done by considering CO2-price scenarios (the CO2 price is the dominating factor for external costs) as well as degrees of internalization through (future)

	<p>regulations and estimate impacts on our business model.</p> <p>(b) The time horizon is in particular 2030, but is also varied. Company relevance arises from our core business of producing and selling vehicles and motorcycles which cause CO2-emissions along the whole life cycle. Among others, this time horizon is relevant as it corresponds to the time horizon of current use-phase regulations in lead markets.</p> <p>(c) Areas considered are in particular BMW Groups own operations, the use phase of our products and our supply chain.</p> <p>Specific description of the scenario analysis regarding its (a) results, (b) usage in strategy/business development and (c) influence on strategy/business development (CASE STUDY)::</p> <p>(a) By calculating external costs different impacts categories can be compared and their relative relevance can be assessed. A result of the analysis was that for BMW Group the by far most dominant impact category is CO2 emissions followed by airborne pollutants (e.g. PM10/PM2.5, NMVOC, NOx, SO2 or NH3) and water depletion.</p> <p>(b) From these price tags our focus of our strategy Number ONE NEXT on GWP and airborne pollutants and, with minor impact, worldwide water depletion have been confirmed. Furthermore, we got insights into price tags from external costs which could materialize through regulations in operational costs of BMW Group and its supply chain as well as e.g. in additional costs of ownership for our customers. However, strategic decisions respectively business decisions are not made by just considering one framework such as scenario analysis based on E P&L.</p> <p>(c) Increasing CO2-efficiency of our products as well as of our production network are key areas we address to reduce the impact category GWP and like this anticipate future regulation. The results of the scenario analysis influenced the following parts of our strategy:</p> <p>-Products: We are proceeding in our efficient dynamics strategy and further increase efficiency of conventional cars, roll out PHEVs / BEVs in a broad range of models, develop hydrogen solutions and develop sustainable mobility services. Our target: Emissions reduction by 25% in CO2 emissions of our worldwide fleet from 2008 to 2020 and a one third share of BEVs and PHEVs of new sales in 2025.</p> <p>-Production: We set as target to reduce absolute 2015 production site CO2-emissions by -20% until 2020. We aim to reduce CO2 emissions of all BMW Group locations to zero until 2050. Since 2017 all European production sites purchase electricity which comes to 100% from renewable sources. From 2020 on, the BMW Group will only purchase electricity from renewable sources, an important step towards our 2050 target.</p>
<p>Other, please specify</p>	<p>Description of (a) scenario identification, (b) time horizon and company relevance and (c) areas considered:</p>

<p>Future regulatory requirements</p>	<p>(a) We simulate the average CO₂ emissions of our future fleet (based on long range planning), considering future powertrain mix (conventional powertrains as well as shares of PHEV (Plug-In hybrid electric vehicles) / BEV (battery electric vehicles) powertrains) and corresponding capital expenditures/capital allocation against upcoming regulations on climate change via scenario analysis, assuming e.g. fleet emission limits in main markets such as EU28, USA or China after 2020.</p> <p>(b) We consider regulation scenarios until 2030 and expect that governments will further intensify limit regulations based on existing and future scientific analyses, as well as what is technologically possible. These future limits are expected to be very ambitious and will entail considerable investment and development work for manufacturers. This time horizon is relevant as it corresponds to the time horizon of current regulation in lead markets.</p> <p>(c) The scenario analysis is related to the use phase of our new vehicle fleet in the corresponding market.</p> <p>Specific description of the scenario analysis regarding its (a) results, (b) usage in strategy/business development and (c) influence on strategy/business development (CASE STUDY):</p> <p>(a) The key result is: BMW Groups needs to further invest into electrification to achieve compliance with the simulated regulation scenarios. In all markets for all future fuel efficiency levels under discussion future target compliance is heavily depending on the market success of electro mobility. Market success depends on several factors such as attractive products as well available charging infrastructure and supporting policies for the ramp up.</p> <p>(b) This result significantly influences our e-mobility strategy. BMW Group contributes to market success of e-mobility by offering attractive BEV and PHEV to its customers. We will offer 25 electrified vehicles already in 2023 – two years earlier than originally planned. We expect to see a steep growth curve towards 2025: Sales of our electrified vehicles should increase by an average of 30 percent every year. Expanding the charging infrastructure is fundamental for the breakthrough of electro mobility. BMW contributes to the development of the charging infrastructure. From 2015 to 2019, we were active in over 50 projects for improving the charging infrastructure. E.g. our ChargeNow service currently provides access to around 270,000 public charging points from different providers worldwide (2018: 223,000). As another example BMW Group and other carmakers together founded the IONITY JV, which aims to build up a high-performing fast-charge network across Europe along important traffic corridors. A total of 202 of the 400 IONITY rapid charging stations planned by 2020 have already been installed. Positive political framework conditions can further support the process. This has become clear in fast-growing markets for electro mobility, such as Norway and California. As part of the political dialogue, we advocate for measures to promote electro mobility, whether by financial support or non-monetary packages (for example the use of bus lanes and/or introduction of dedicated lanes, preferential parking).</p>
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	<p>(c) Under the term Efficient Dynamics, the BMW Group has been successfully working on reducing fuel consumption and vehicle emissions. We are proceeding in our efficient dynamics strategy and further increase efficiency of conventional cars, roll out PHEVs / BEVs in a broad range of models, develop hydrogen solutions and develop sustainable mobility services. As an example we reduced CO2 emissions in newly-sold vehicles in EU28 by around 42.4% between 1995 and 2019 and were in 2019 market leader of electrified vehicles (BEV, PHEV) in Germany and ranked second in the EU28.</p>
<p>2DS IEA B2DS IEA Sustainable development scenario</p>	<p>Description of (a) scenario identification, (b) time horizon and company relevance and (c) areas considered:</p> <p>(a) We analysed the BMW Group CO2 emissions for our own operations within the methodology as outlined by the technical paper “SECTORAL DECARBONIZATION APPROACH (SDA): A method for setting corporate emission reduction targets in line with climate science” of the Science Based Targets Initiative respectively the specifications as given in the Nature Climate change letter “Aligning corporate greenhouse-gas emissions targets with climate goals” (Authors: Oskar Krabbe, Giel Linthorst, Kornelis Blok, Wina Crijns-Graus, Detlef P. van Vuuren, Niklas Höhne, Pedro Faria, Nate Aden and Alberto Carrillo Pineda). We did our analysis on the basis of an Excel calculation from the consultancy ECOFYS for our production emissions where general available data respectively general assumptions as for the increase of premium vehicle production were used.</p> <p>(b) In a second step we adjusted the general assumption internally (we did not make the data transparent to ECOFYS) to our concrete data from planning until 2020 to assess our existing target of reducing absolute 2015 production site CO2-emissions by -20% until 2020 against the 2 degree scenario, as well as to consider target levels for 2030, which are highly relevant to our climate strategy.</p> <p>In fact for target setting for 2030 and beyond, B2DS scenarios and scenarios compatible with a 1.5°C world are more relevant for BMW Group than 2DS.</p> <p>C) The area considered within this approach is emissions from our production network respectively from all BMW Group locations.</p> <p>Specific description of the scenario analysis regarding its (a) results, (b) usage in strategy/business development and (c) influence on strategy/business development (CASE STUDY):</p> <p>(a) Based on the intensity target curve corresponding to the carbon budget of the International Energy Agency (IEA) industry sector “Other Industries” we calculated a company specific target curve. We found that the target value of our 2020 target for scope1 and scope 2 emissions is well below the science based targets emission curve for 2DS.</p> <p>(b) When considering energy efficiency and CO2 targets for the BMW Group operations until 2030 and beyond we took into account the results of this</p>

	<p>scenario analysis (target requirements from the 2 degree scenario) as well as Below Two Degree (B2DS) scenarios and scenarios compatible with a 1.5°C world from the Science Based Target initiative (SBTi).</p> <p>(c) For example we set as target to reduce absolute 2015 production site CO2-emissions by -20% until 2020. New targets defined for the BMW Group operations until 2030 will even overshoot requirements of 1.5°C scenarios. Latest until 2050 we aim to reduce CO2 emissions of all BMW Group locations to zero. The scenario analysis directly influenced the decision to set these targets.</p> <p>Since 2017 all European production sites purchase electricity which comes to 100% from renewable sources. From 2020 on, the BMW Group will only purchase electricity from renewable sources, an important step towards the 2050 target.</p> <p>When deciding for new production sites and technologies, energy efficiency and emissions is always assessed. New technologies have to contribute to our targets for energy efficiency and CO2 reduction.</p>
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C3.1d

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

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	<p>Description: BMW's strategy and its TIME HORIZONS (a+b) and most SUBSTANTIAL STRATEGIC DECISIONS (c)</p> <p>Description: The strategic approach in the new strategy NUMBER ONE > NEXT is to leverage innovative technologies, digitalization and sustainability. It is part of our culture and anchored in our processes to mitigate climate risks and explore opportunities arising from the global efforts of combating climate change (CC). This process influenced e.g. our strategic approach to e-mobility. E-vehicles have zero local emissions, along with the potential of significantly reducing the emission of CO2 over the whole product life cycle.</p> <p>a) Our short term strategy and targets aim towards mitigating CO2 emissions from product, accounting for indirect risks and opportunities from regulations and changing consumer behavior. We further develop the Efficient Dynamic (ED) technology package to meet fleet</p>

		<p>emission targets worldwide. We intend to set standards in e-mobility. By 2021, we aim to sell roughly one quarter of vehicles electrified.</p> <p>b) Our long term strategy and targets: We are proceeding in our ED strategy: Further increase efficiency of conventional cars, roll out PHEVs / BEVs in a broad range of models, develop hydrogen solutions & develop sustainable mobility services. Our target: CO2 Emissions reduction by at least 25% of our fleet from 2008 to 2020 and e.g. one third share of BEVs and PHEVs of new sales in 2025 in the EU.</p> <p>c) CASE STUDY: Most substantial strategic decisions influenced by climate-related risks and opportunities The climate-related opportunities of changing consumer behavior and regulatory risks regarding our products highly affected the following decisions in 2019.</p> <ul style="list-style-type: none"> - R&D expenditures of 6.42 billion € to develop models with further increased efficiency, PHEVs, BEVs & mobility services. - Launch of the electrified MINI^[SEP]Cooper SE, which has^[SEP]a range of 242 to 270 km according to the NEDC. - Launch of the BMW 520d and 520d Touring models with 48-volt technology - Launch of the BMW X3, our first model that offers a choice between a conventional, PHEV or BEV engine (as of 2020) - Launch of the joint venture YOUR NOW between BMW AG and Daimler AG, combining existing on-demand mobility offerings in the areas of car sharing, ride-hailing, parking, charging and multi- modality, with e.g. car sharing serving as an enabler for electric vehicles.
<p>Supply chain and/or value chain</p>	<p>Yes</p>	<p>Description: BMW`s strategy and its TIME HORIZONS (a+b) and most SUBSTANTIAL STRATEGIC DECISIONS (c)</p> <p>The BMW Group is fully committed to ecological and social sustainability along the entire value chain incl. the reduction of CO2 emissions. Our clean production philosophy contributes to the global mitigation efforts by reducing environmental impacts of the production and the procurement. Risks as higher prices for CO2-emissions (e.g. through trading schemes) further motivate our efforts to maximize energy efficiency and increase the use of renewable energy.</p> <p>a) Our short term strategy and targets:</p>

		<ul style="list-style-type: none"> - By 2020, the BMW Group will have significantly increased supply chain transparency and resource efficiency. - By 2020, we aim that 60% of our suppliers participating in the CDP Supply Chain Programme have at least a B rating in the CDP scoring system. - By 2020, we are aiming to reach 100% renewable energy powered plants worldwide. <p>b) Our long term strategy and targets aim to further improve global mitigation:</p> <ul style="list-style-type: none"> - Reduce absolute 2015 production site emissions by -20% until 2020 and aim to reduce CO2 emissions of all our locations to zero until 2050. - To counter direct physical risks we take measures, e.g. include vulnerability risks in planning of new production sites and selection of suppliers. - When reviewing existing targets until 2020 and developing new targets for CO2 efficiency in production we check for consistency with Science Based Targeting (B2DS). <p>c) CASE STUDY: Most substantial strategic decisions in the supply chain influenced by climate-related risks and opportunities were:</p> <ul style="list-style-type: none"> - Establishment of CO2 indicators as a criterion for supplier nomination. - Agreement with our High Voltage System (HVS) cell suppliers for our next generations HVS cells to use 100% renewable electricity for cell production. - Hedge further material supply chains that are particularly associated with environmental & social risks (e.g. graphite or lithium) and drive active transformation through standardisation and enabling measures on local and site level.
Investment in R&D	Yes	<p>Description: BMW`s strategy and its TIME HORIZONS (a+b) and most SUBSTANTIAL STRATEGIC DECISIONS (c)</p> <p>Climate change is influencing our industry with the need to decrease emissions, the trend to electro mobility and mobility services. R&D is therefore of key importance for the BMW Group as a premium provider within the transformation of the industry. With its Strategy NUMBER ONE > NEXT, the BMW Group is focusing on electric mobility, digitalization and autonomous driving.</p> <p>a) Our short term strategy and targets: By offering sustainable individual mobility BMW mitigates</p>

		<p>climate-related physical risks and develops business opportunities. We are proceeding in our ED strategy: Further increase efficiency of conventional cars, roll out PHEVs/BEVs in a broad range of models, develop hydrogen solutions & develop sustainable mobility services. Our target: Emissions reduction by at least 25% in CO2 emissions of European fleet from 2008 to 2020 and e.g. one third share of BEVs and PHEVs of new sales in 2025 in the EU.</p> <p>b) Our long term strategy and targets We stress test via scenario analysis our planning of product offers, sales volumes and R&D investments against upcoming regulations on climate change, taking into account the ambition from the COP21 agreement.</p> <p>c) CASE STUDY: Most substantial strategic decisions in R&D influenced by climate-related risks and opportunities were:</p> <ul style="list-style-type: none"> - At 31 December 2019, more than 15,700 people in 12 countries were working in the BMW Group's global research and innovations network. R&D expenditures were € 6,419 million (2018: € 6,890 million). One key development: building a broad drive technology base so that in the coming years we can offer innovative solutions for the different mobility needs. E.g. the BMW iX3 in 2020 and the iNext in 2021 will introduce the 5th generation of our electric drive, uncoupling the vehicle architecture from the drivetrain technology. - Another key development direction relates to individual mobility services, e.g. our car sharing services, which are one enabler for electric vehicles. In 2019, several million customers in 27 cities and 14 countries used the car-sharing service SHARE NOW, a joint venture with Daimler AG, with a total of 3,505 electric cars in the fleet.
Operations	Yes	<p>Description: BMW's strategy and its TIME HORIZONS (a+b) and most SUBSTANTIAL STRATEGIC DECISIONS (c)</p> <p>Our company is facing the challenge of conserving resources and tackling climate change. This is also very relevant for our production processes. We continuously increase our energy efficiency and minimize CO2 from our production. We enable our plants to flexibly produce all types of drivetrains. Like this we offer an electrified powertrain portfolio to reduce CO2 emissions over lifecycle and meet customer's needs. These measures meet the</p>

		<p>needs of our customers and stakeholders and prepare for new legal requirements.</p> <p>a) Our short term strategy and targets To improve global mitigation we continue reducing CO2 emissions through further increase of energy efficiency, utilization of combined heat and power plants (CHP) and increase of the share of electricity from renewable sources. By 2020, our target is 100% renewable electricity in our plants worldwide. To counter direct physical risks we take measures, e.g. include vulnerability risks in planning of new production sites and selection of suppliers. To counter regulatory risks / risks from changing consumer behaviour we enable our production sites to flexibly produce all types of powertrains.</p> <p>b) Our long term strategy and targets Our target to further improve global mitigation: Reduce absolute 2015 production site emissions by -20% until 2020 and aim to reduce CO2 emissions of all our locations to zero until 2050. We stress test via scenario analysis our planning of product offers, sales volumes and correspondingly plan production capacities worldwide to produce the right mix of types of vehicles/ powertrains (BEV, PHEV, ICE powertrains) against upcoming regulations on climate change, taking into account the ambition from the COP21 agreement.</p> <p>c) CASE STUDY: Most substantial strategic decisions for operations influenced by climate-related risks and opportunities were:</p> <ul style="list-style-type: none"> - We are to launch the iX3 in 2020 and prepared our sites to offer then all powertrain systems to our customers. - We continuously improve process efficiency and invest in more efficient technologies in order to achieve our 45% resource efficiency improvement goal by 2020 (base: 2006) - We have established environmental management systems at all of our existing production plants and plan to install them at all future locations.
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C3.1e

(C3.1e) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	<p>Revenues</p> <p>Indirect costs</p> <p>Capital expenditures</p> <p>Acquisitions and divestments</p> <p>Access to capital</p> <p>Assets</p> <p>Liabilities</p>	<p>1) CASE STUDY for “Revenues”:</p> <p>a) Climate-related risks and opportunities have influenced our financial planning: In the BMW Group, the drive for sustainable mobility pushes us to develop innovative technologies with direct impact on our revenues. We set ourselves ambitious goals for increasing the efficiency of our drivetrain systems as well as to develop battery electric vehicles and Plug-In electric vehicles and like this reducing CO2-emissions. Since 2007, Efficient Dynamics technologies are standard. These include efficient engines/ gearboxes, optimized aerodynamics, intelligent energy management, light-weight design, tires with reduced rolling resistance, energy recovery, ECO PRO driving mode, active coasting and proactive driving assistant or 48-volt recuperation Systems and Auto Start Stop function. We offer connectivity services e.g. to find the fastest or the most efficient routes and simplify the search for a parking place. We have more than 10 PHEV models (in 2, 3, 5 and 7 Series, X1, X2, X3 and X5, the MINI Countryman & the BMW i8) and are active in 74 markets worldwide.</p> <p>b) Time horizons covered by the financial planning</p> <ul style="list-style-type: none"> - In 2019 BMW launched three further models featuring hybrid technology (BMW X1, X2 and the BMW 3 Series Touring) as well as the additional all-electric model MINI Cooper SE. In 2020, BMW iX3 will be launched, another fully electric drivetrain. - A quarter of the vehicles we sell in Europe should be electrified by 2021; a third in 2025 and half in 2030. This means electric drivetrains for many high volume models. - In 2019 we sold 146,160 BEVs respectively PHEVs contributing to the BMW Group revenues. In fact, BMW Group has in this fast growing segment already a much larger market share than in traditional drivetrains. The company led e.g. in the reporting year the German market for electrified vehicles, ranked second in Europe and is a key driver of electromobility. - The competitive edge achieved through this is one of the reasons why the BMW Group had its eighth consecutive record year of sales in 2019 globally. This shows the impact on our revenues. <p>2) CASE STUDY for “Indirect costs”:</p> <p>a) Climate-related risks and opportunities have influenced our financial planning: Our company is facing the challenge of conserving resources and tackling climate change. This is also very relevant for our production processes. For this reason, we continuously increase our energy and resource efficiency and minimize CO2 and pollutant emissions from our production in our worldwide production network. These measures help us reduce production costs and prepare for new legal requirements. Like this climate change is a driving force for efficiency increase and</p>

	<p>therefore cost savings.</p> <p>b) Time horizons covered by the financial planning</p> <ul style="list-style-type: none"> - By 2020, the BMW Group`s target is to reduce its resource consumption (energy, water, waste for disposal, solvents) per vehicle produced by 45% (base year 2006). Since 2006, in vehicle production, the BMW Group has reduced its energy consumption per vehicle by 40.4% and its water consumption by 28.8%. CO2 emissions per vehicle produced were reduced by 71.4%. Since 2006, due to our efficient use of resources and here in particular energy, we made cost savings totalling € 159 million which is a low impact on our operating costs. <p>3) CASE STUDY for “Capital expenditures”:</p> <p>a) Climate-related risks and opportunities have influenced our financial planning: A major factor in the success of the BMW Group is its consistent focus on the future. Shaping individual mobility and finding innovative solutions today for the needs of tomorrow is a key driving force for the BMW Group. Research and development (R&D) is therefore of key importance for the BMW Group as a premium provider.</p> <p>b) Time horizons covered by the financial planning:</p> <ul style="list-style-type: none"> - In 2019, the R&D expenditure were € 6,419 million (2018: € 6,890 million). A significant share of the R&D expenditures is spent for electrification of the product range across all brands. - In 2019 BMW launched three further models featuring hybrid technology (BMW X1, X2 and the BMW 3 Series Touring) as well as the additional all-electric model MINI Cooper SE. In 2020, BMW iX3 will be launched, another fully electric drivetrain. This means electric drivetrains for many high volume models. - In 2019, we sold 146,160 BEVs & PHEVs contributing to the BMW Group revenues. In fact, BMW Group has in this fast growing segment already a much larger market share than in traditional drivetrains. The company led e.g. in the reporting year the German market for electrified vehicles, ranked second in Europe and is a key driver of electromobility - We have more than 10 PHEV models (in 2, 3, 5 and 7 Series, X1, X2, X3 and X5, the MINI Countryman & the BMW i8) and are active in 74 markets worldwide. - We reached our aim to sell half a million electrified BMWs and MINIs on the roads by the end of 2019. A quarter of the vehicles we sell in Europe should be electrified by 2021; a third in 2025 and half in 2030. Over the next few years, we will see different types of drivetrains on the roads. - A high level of capital expenditures are for preparing our sites for this diversity by creating flexible architectures and plants. This will allow us to produce models with efficient combustion engines alongside electric vehicles and plug-in hybrids. From 2020 on, the use of scalable modular electric construction kits will enable us to fit all model series with any type of drivetrain. This will make us extremely flexible, whichever way demand develops.
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		<p>4) Acquisitions, Access to capital, Assets & Liabilities</p> <p>Climate-related risks and opportunities have influenced our financial planning in the following elements:</p> <p>1) Acquisitions: through the IONITY joint venture, creating rapid charging network for electric vehicles in Europe as well as the joint venture with Great Wall to produce future fully-electric models of the MINI brand</p> <p>2) Access to capital: through our leading position in sustainability ratings (CDP, DJSI)</p> <p>3) Assets: low & zero carbon technologies impacting our intangible assets (technology & knowhow), climate-related risk analysis impacting the choice of new sites</p> <p>4) Liabilities: e.g. through loans for climate-related investments.</p> <p>For details on these 4 elements, please see the section Further Information (C-FI).</p>
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C3.1f

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

C4. Targets and performance

C4.1

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

Both absolute and intensity targets

C4.1a

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

Target reference number

Abs 1

Year target was set

2015

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Base year

2015

Covered emissions in base year (metric tons CO₂e)

1,267,485

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

82

Target year

2020

Targeted reduction from base year (%)

20

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

1,013,988

Covered emissions in reporting year (metric tons CO₂e)

767,584

% of target achieved [auto-calculated]

197.2019392734

Target status in reporting year

Achieved

Is this a science-based target?

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

Please explain (including target coverage)

BMW Groups target is to reduce total CO₂ emissions of its production network from 2015 to 2020 by 20%.

Scope of target: The target includes the BMW vehicle production network (including the Chinese JV). From the 2015 emissions figures we got as percentage of emissions in scope 82% (Exclusions: Emissions from the BMW Group owned vehicle fleet and airplanes, central administration and R&D Munich (Germany), motorcycle plant Berlin (Germany) as well as International R&D offices, BMW Group owned branches and other buildings). In 2019, total emissions in our production network amounted to 767,584 tonnes of CO₂, a 39.4% decrease in overall CO₂ emissions when compared to 2015 (marked based calculation for Scope₂ emissions). This means that we already achieved our 2020 target. Increase of energy efficiency was one key factor. Our target is to reduce energy consumption per vehicle produced by 45% between 2006 and 2020. By 2019 we achieved a 40.4% reduction. Supply of energy from renewable sources was another key element. In 2019 we purchased for vehicle production about 1,800 GWh of electricity, heat and cooling from renewable sources, among other things via certificates of origin.

All European production sites are delivered with green electricity. In Spartanburg (USA) we replaced around 50% of our natural gas needs by utilizing landfill gas. Until 2020, we

want to continue to expand electricity supply from renewable sources at our plants outside of Europe.

Remark: We analysed the BMW Group CO₂ emissions within the methodology as outlined by the technical paper “SECTORAL DECARBONIZATION APPROACH (SDA): A method for setting corporate emission reduction targets in line with climate science” of the Science Based Targets Initiative respectively the specifications as given in the Nature Climate change letter “Aligning corporate greenhouse-gas emissions targets with climate goals” (Authors: Oskar Krabbe, Giel Linthorst, Kornelis Blok, Wina Crijns-Graus, Detlef P. van Vuuren, Niklas Höhne, Pedro Faria, Nate Aden & Alberto Carrillo Pineda). We did our analysis on the basis of an Excel calculation from the consultancy ECOFYS for our production emissions using our planning until 2020 to find that the target value for scope1 & scope 2 emissions is well below the science based targets emission curve.

Target reference number

Abs 2

Year target was set

2015

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 1+2 (market-based)

Base year

2015

Covered emissions in base year (metric tons CO₂e)

1,440,000

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

94

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)

897,966

% of target achieved [auto-calculated]

37.64125

Target status in reporting year

Underway

Is this a science-based target?

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

Please explain (including target coverage)

We are pursuing our vision of a CO₂-free energy supply of BMW Group and aim to reduce CO₂ emissions of all BMW Group locations to zero until 2050. The absolute target Abs1 for the BMW Group production network is a major, joining the RE100 initiative of the Climate Group at the COP21 in Paris and commit to purchase 100 % renewable electricity in the future a further step to achieve the target Abs2 (for details of our renewable energy target within the RE100 initiative please see C4.2a). Since Abs1 as well as the renewable energy target in C4.2a are interim targets to achieve Abs2, measures in 2019 are the same as described there. Procedure: On the way to 100% renewable energy supply of our locations BMW Group takes a holistic approach. Top priority is given to systematic reduction of energy consumption, as energy savings are always the best alternative, both for the environment and for our business. To cover the remaining energy requirements, we are expanding our own renewable energy generation systems and are increasingly drawing power from local renewable sources. The renewable energy target in C4.2a addresses only CO₂-emissions from purchased electricity. Abs1 includes also emissions from heat supply as well as from fuel combustion inside the BMW Group. On a mid to long-term perspective we see the potential to replace in an economically reasonable way fossil fuels by renewable fuels (e.g. biogas) and are doing this e.g. in Spartanburg (USA) with landfill gas. Scope of target: The emissions in Scope include all BMW Group locations including the Joint Venture locations in China. It excludes emissions from company owned vehicles and airplanes. From the 2015 emissions figures we get as percentage of emissions in scope 94%.

Remark: To calculate the % of emissions in scope we included in the denominator emissions from company owned cars and planes since these are BMW Group Scope 1 & Scope 2 emissions. In the method as outlined by the technical paper "SECTORAL DECARBONIZATION APPROACH (SDA): A method for setting corporate emission reduction targets in line with climate science" of the Science Based Targets Initiative these two categories belong however to other industry sectors. For our own sector, which belongs in the actual methodology to "Other Industries", the target Abs2 means zero net CO₂ emissions which is a science based target.

C4.1b

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

Target reference number

Int 1

Year target was set

2008

Target coverage

Company-wide

Scope(s) (or Scope 3 category)

Scope 3: Use of sold products

Intensity metric

Grams CO₂e per kilometer

Base year

2008

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

182

% 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 (%)

25

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

136.5

% change anticipated in absolute Scope 1+2 emissions

% change anticipated in absolute Scope 3 emissions

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

140

% of target achieved [auto-calculated]

92.3076923077

Target status in reporting year

Underway

Is this a science-based target?

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

Please explain (including target coverage)

The BMW Group has committed itself to a long term reduction target for the fleet tailpipe emissions. The target refers to the Copenhagen Conference where the BMW Group communicated to reduce these emissions by 25% until 2020. The 25 % reduction is to be achieved by continuous development of our Efficient Dynamics (ED) strategy. Since 2007 our ED is a comprehensive technologic approach for the consistent reduction of fuel consumption and emissions in the standard configuration of all cars of the BMW Group. It includes both highly-efficient automobiles with gradually refined combustion engines and all-electric cars and low-emission plug-in hybrids. ED technologies include e.g. efficient engines, optimized aerodynamics, intelligent energy management, light-weight design or Auto Start Stop function. Our future is electric. We have already more than 10 PHEV models (in 2, 3, 5 and 7 Series, X1, X2, X3 and X5, the MINI Countryman & the BMW i8) and are active in 74 markets worldwide. In 2019, we sold 146,160 electrified vehicles worldwide (BEVs: 59,213; PHEVs: 86,947), a further increase in volume by 2.7% compared to 2018, and led e.g. in 2019 the market for electrified vehicles in Germany and ranked second in Europe.

Our fleet averaged CO₂ emissions per kilometer calculated from the core market values EU28, USA, China, Japan and Korea were 140 g CO₂/km. This means a 0.7% reduction of fleet averaged CO₂ emissions of 2019 when compared to 2018.

We set clear goals for sustainable mobility: We reached our aim of half a million electric vehicles and plug-in hybrids on the roads by the end of 2019. 25 electrified models already in 2023, more than half of them pure electric, and an expected one-third share in our newly sold vehicle fleet in 2025.

Remark: Due to the uncertainties from the corona pandemic an estimation of “% change in anticipated on absolute Scope 3 emissions” cannot be stated reliably, as the retail volume 2020 would be needed to calculate this figure.

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

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

2015

Target coverage

Company-wide

Target type: absolute or intensity

Intensity

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)

MWh

Target denominator (intensity targets only)

megawatt hour (MWh)

Base year

2015

Figure or percentage in base year

42

Target year

2020

Figure or percentage in target year

67

Figure or percentage in reporting year

84

% of target achieved [auto-calculated]

168

Target status in reporting year

Achieved

Is this target part of an emissions target?

Relation of this target to Abs1 & Abs2: This target addresses only CO₂-emissions from purchased electricity. Abs1 includes also emissions from heat supply as well as from fuel combustion inside the BMW Group. Abs2 goes on a mid to long term perspective far beyond these two targets. On a mid to long-term perspective we see the potential to replace in an economically reasonable way fossil fuels by renewable fuels (e.g. biogas) to achieve CO₂ neutral operations. Where available BMW Group has such solutions already in place: We operate one combined heat and power plants (in Spartanburg USA) with landfill gas. Our site in Rosslyn (South Africa) is supplied with electricity generated with biogas (source: cattle farm).

Is this target part of an overarching initiative?

RE100

Please explain (including target coverage)

In 2015 BMW Group joined the RE100 initiative of the Climate Group at the COP21 in Paris and committed to purchase 100% of electricity from renewable sources for its operations and to develop a pathway to achieve this. We set as an interim target to purchase more than two third of our electricity from renewables by 2020. The present target corresponds to this interim target. In 2019 we already achieved a 84% share of electricity purchased from renewable sources for our worldwide operations. Increase of energy efficiency was one key factor. The target is to reduce energy consumption per vehicle produced by 45% between 2006 and 2020. By 2019 we achieved a 40.4% reduction. Supply of energy from renewable sources was another key element. In 2019 we purchased e.g. for vehicle production about 1,800 GWh of electricity, heat and cooling from renewable sources, among other things via certificates of origin. All European production sites are delivered with green electricity. Until 2020, we want to continue to expand electricity supply from renewable sources at our plants outside of Europe.

Scope of target: The emissions in Scope include all BMW Group locations and the production sites in China. The electricity purchased in 2015 for the BMW Group production network (including China), for the corporate functions, development and administration in Munich (Germany) and for the motorcycle plant in Berlin (Germany) of 2,485,881 MWh makes about 95% of BMW Groups whole electricity purchased. The base year electricity consumption is derived by dividing 2,485,881 MWh by 0.95 and rounding.

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

2017

Target coverage

Company-wide

Target type: absolute or intensity

Absolute

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

Engagement with suppliers

Other, please specify

Suppliers participating in the CDP Supply Chain programme achieve at least a B rating

Target denominator (intensity targets only)

Base year

2017

Figure or percentage in base year

25

Target year

2025

Figure or percentage in target year

60

Figure or percentage in reporting year

34

% of target achieved [auto-calculated]

25.7142857143

Target status in reporting year

Underway

Is this target part of an emissions target?

No this target is not part of an emissions target.

However, the BMW Group has set a broad range of sustainability goals. These include our aim that 60% of our suppliers participating in the CDP Supply Chain programme achieve at least a B rating latest by 2025.

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

In 2019, a total of 199 of our suppliers (2018: 190) reported on their resource efficiency via the CDP Supply Chain Programme. These suppliers account for 78% of the purchase volume of the BMW Group (2018: 75 %).

It is our aim that 60 % of our suppliers participating in the CDP Supply Chain programme achieve at least a B rating by 2025.

As in the previous year our evaluated suppliers, including the 24 companies that entered the programme in 2019, achieved an average score of C. 34 % achieved a rating of B and higher (2018: 30 %). There have been significant improvements with suppliers who have been reporting for at least three years. We regard this as evidence that the

programme is well established at the companies which have been participating for longer periods and that it yields the expected results.

Participating suppliers reduced their CO₂ emissions by 32 million t in 2019 (2018: 39 million t). This was mainly due to one larger divestment, renewable energy projects and an increase in energy efficiency.

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 CO ₂ e savings in metric tonnes CO ₂ e (only for rows marked *)
Under investigation	288	
To be implemented*	111	24,684
Implementation commenced*	27	3,423
Implemented*	144	31,125
Not to be implemented	6	

C4.3b

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

Initiative category & Initiative type

Energy efficiency in buildings

Lighting

Estimated annual CO₂e savings (metric tonnes CO₂e)

7,558

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

961,517

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

4,322,640

Payback period

4-10 years

Estimated lifetime of the initiative

16-20 years

Comment

We replace conventional lightning in BMW Groups production network with LED lightening step by step. In 2019 as additional BMW Group location we have equipped our production site Spartanburg (USA) with LED lightening. This reduces electricity consumption by about 14,000 MWh per year.

We calculate Scope2 emission reductions throughout 4.3 using the “location-based” method in accordance with GHG Protocol Scope 2 Guidance: Overall third-party electricity and heat purchased is calculated using emission factors from the Association of the German Automotive Industry (VDA). Due to our high percentage of electricity from renewable sources (84% of pure green electricity) this is more appropriate to make CO2 reductions from energy efficiency measures visible.

Initiative category & Initiative type

Energy efficiency in production processes
Waste heat recovery

Estimated annual CO2e savings (metric tonnes CO2e)

1,109

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

384,846

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

590,000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

In BMW Groups foundry in our engine production site in Landshut (Germany) we implemented measures to use the waste heat of the exhaust air from the melting furnaces to preheat the aluminum ingots in preheating chambers. This reduces natural gas consumption by about 6,100 MWh per year.

Initiative category & Initiative type

Energy efficiency in production processes
Waste heat recovery

Estimated annual CO2e savings (metric tonnes CO2e)

1,055

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

445,533

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

1,325,000

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

In BMW Groups foundry in our engine production site in Landshut (Germany) we implemented a heat recovery system to use the waste heat from the melting furnaces to preheat the incoming fresh air. This reduces natural gas consumption by about 5,800 MWh per year.

Initiative category & Initiative type

Energy efficiency in production processes
Combined heat and power (cogeneration)

Estimated annual CO2e savings (metric tonnes CO2e)

784

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

189,222

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

400,000

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

In BMW Groups engine production site in Landshut (Germany) we changed the heating of air running through our ventilation system from direct burning of natural gas to heated water coming from our combined heat and power system. This reduces natural gas consumption by about 4,300 MWh per year.

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

1,180

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

623,940

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

396,000

Payback period

<1 year

Estimated lifetime of the initiative

16-20 years

Comment

In BMW Groups vehicle production site Regensburg (Germany) within the implementation activities for the Integrated Paint Process (IPP) which, contrary to conventional paint processes, omits the application and drying of a filler layer, we were able to close down a no longer needed filler line. This reduces electricity consumption

by about 500 MWh and natural gas consumption by about 2,000 MWh.

We calculate Scope2 emission reductions throughout 4.3 using the “location-based” method in accordance with GHG Protocol Scope 2 Guidance: Overall third-party electricity and heat purchased is calculated using emission factors from the Association of the German Automotive Industry (VDA). Due to our high percentage of electricity from renewable sources (84% of pure green electricity) this is more appropriate to make CO2 reductions from energy efficiency measures visible.

Initiative category & Initiative type

Energy efficiency in production processes
Waste heat recovery

Estimated annual CO2e savings (metric tonnes CO2e)

304

Scope(s)

Scope 1

Voluntary/Mandatory

Voluntary

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

328,800

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

1,254,000

Payback period

4-10 years

Estimated lifetime of the initiative

11-15 years

Comment

In BMW Groups vehicle production site Oxford (UK) recovered heat from the Regenerative Thermal Oxidizer (RTO) process in the paint shop to burn VOC from vehicle painting is passed into the boiler house and distributed to different consumers. This reduces natural gas consumption in the boiler house by about 1,700 MWh.

Initiative category & Initiative type

Energy efficiency in production processes
Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

756

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

285,600

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

711,833

Payback period

1-3 years

Estimated lifetime of the initiative

16-20 years

Comment

In BMW Groups engine production site Steyr (AT), by optimizing the speed control of the vacuum pump as well as of the booster pump we increased energy efficiency in the process of cleaning engine components necessary during the mechanical production. This reduces electricity consumption by about 1,400 MWh per year.

We calculate Scope2 emission reductions throughout 4.3 using the “location-based” method in accordance with GHG Protocol Scope 2 Guidance: Overall third-party electricity and heat purchased is calculated using emission factors from the Association of the German Automotive Industry (VDA). Due to our high percentage of electricity from renewable sources (84% of pure green electricity) this is more appropriate to make CO2 reductions from energy efficiency measures visible.

Initiative category & Initiative type

Energy efficiency in production processes

Other, please specify

Energy efficiency measure

Estimated annual CO2e savings (metric tonnes CO2e)

18,379

Scope(s)

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

20,122,563

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

64,683,422

Payback period

1-3 years

Estimated lifetime of the initiative

11-15 years

Comment

In 2019 further 137 measures lead to a reduction of additional 18,379 t CO₂ per year. Due to this large number we concentrated above on 7 exemplary measures with high efficiency improvements. Instead of adding further 137 entries which would be similar to the above ones, with decreasing contributions to CO₂ reduction, we add here only one additional entry. This entry collects all the additional measures from our worldwide continuous improvement process and investments in specific efficiency measures for existing technologies. Most of the additional measures optimise the production process, the operating time or production window. Some of measures are the change from conventional light to LED light.

We calculate Scope2 emission reductions throughout 4.3 using the "location-based" method in accordance with GHG Protocol Scope 2 Guidance: Overall third-party electricity and heat purchased is calculated using emission factors from the Association of the German Automotive Industry (VDA). Due to our high percentage of electricity from renewable sources (84% of pure green electricity) this is more appropriate to make CO₂ reductions from energy efficiency measures visible.

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

Method	Comment
Internal price on carbon	Climate change and rising energy prices demand efficient energy usage as well as the increased use of alternative energy sources. Our target is to be leading in the usage of renewable energies. Furthermore, achievements will not only improve the company's environmental impact assessment but, due to increasing energy prices, also the company's profitability. This drives investment to reduce carbon emissions and thereby avoids rising costs for energy and expected costs for CO ₂ -emissions due to "Cap and trade", carbon taxes, etc. Investments are internally assessed with an integrated catalogue of measurements for quality, productivity and efficiency. This catalogue also accounts for an internalization of external CO ₂ costs, e.g. from carbon trading schemes, on an investment level.
Compliance with regulatory requirements/standards	Compliance with regulatory requirements and standards is one of the basic prerequisites for the success of the BMW Group. Current law

	<p>provides the binding framework for our wide range of activities around the world. Markets such as the US, Japan, Korea, China and Europe are introducing increasingly strict carbon emissions performance requirements for vehicles. The increasing number of regulations and standards drives investment in emissions reduction activities and thereby fosters innovation.</p>
Internal finance mechanisms	<p>The integration of environmental aspects in the early stages of major investment decisions increases the profitability of these projects. Considering the costs of carbon emissions in the planning phase of investment decisions increases the incentive to implement emissions reduction activities. Costs of carbon emissions are included in profitability calculations and are reflected in the return on investment.</p>
Employee engagement	<p>With the aim of establishing sustainability even more thoroughly in all areas of the company, a number of sustainability and environmental protection training courses have been established. Examples: Sustainability topics and the relevance of resource efficiency is addresses at the introductory event for new employees as well as in courses of our trainees. During 2019, the range of training courses on offer for our employees were expanded for key strategic areas, such as electric mobility. Another example are the annual environmental protection and health and safety courses. Ideas developed are implemented within our employee's idea management system which was established a long time ago. In addition to the permanently active online supported suggestion scheme, campaigns have been running to specific subjects as for example energy saving measures. In 2019 about 2,300 ideas were implemented which address among others also sustainability issues like energy and water savings.</p>
Internal incentives/recognition programs	<p>The strategic approach in the new strategy NUMBER ONE > NEXT is to leverage innovative technologies, digitalization and sustainability to deliver unique customer experiences. It is part of the BMW Group culture and anchored in our processes to mitigate climate risks and explore opportunities arising from the global efforts of combating climate change. Corporate sustainability measured in balanced scorecard terms (at Group level) is included as a formal corporate objective since 2009. Detailed targets are then derived for each of the divisions within the Group in the area of climate change. Those targets are for example a 25% reduction in fleet averaged CO2 emissions of new vehicles (2008-2020) and 45% less energy consumption per vehicle produced (2006-2020). Management bonus payments (all management positions) are directly linked to the fulfilment of corporate and divisional targets. The proportion of variable remuneration to total remuneration increases commensurate to the position within the corporate hierarchy.</p>

C4.5

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

Yes

C4.5a

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

Level of aggregation

Company-wide

Description of product/Group of products

Low carbon products contribute to the transition of a low carbon economy. BMW Group interpretation is, that only battery electric vehicles (BEV) and plug-in hybrid vehicles (PHEV) (xEV's) belong to this category. In addition to the i3 and the i8 model, introduced in 2013 respectively 2014, currently we have already more than 10 PHEV models (in 2, 3, 5 and 7 Series, X1, X2, X3 and X5, the MINI Countryman & the BMW i8). We are active in 74 markets worldwide, more than any other new or traditional premium manufacturer and were e.g. in 2019 market leader for electrified vehicles in Germany and ranked second Europe.

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

Low-carbon product

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

Other, please specify

Impact of electro mobility

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

5.8

Comment

To get a rough estimate of the total emissions avoided per year we calculate averaged fleet emissions of our xEV fleet in the EU28 in 2019 and compare it to EU28 fleet emissions without xEV's. We calculate one main market (about 40% of our retail volume) because fleet emissions of xEV's and conventional cars depend on the test cycles in the corresponding legislation. We multiply the difference of 105 g CO₂/km with an averaged mileage of 15,000 km per year and the whole Volume of xEV's worldwide of 146,160 units to find about 230,000t CO₂ avoided in 2019.

The percentage of total revenues from Climate Change Products in 2019 is calculated as follows. To estimate the percentage of revenue for Low Carbon Products we divided the number of "Low carbon products" of 146,160 vehicles by the total vehicles sold (2,538,367) and get 5.8%.

Level of aggregation

Company-wide

Description of product/Group of products

The use of all BMW Group cars sold in 2019 enable our customers to reduce CO₂ emissions, both compared to the use of comparable products of competitors as well as compared to older BMW Group vehicles which are to be replaced. Starting in 2007 we step by step introduced Efficient Dynamics (ED) technologies in the standard configuration. We continuously improve and extend the ED technology package to bring down the CO₂ emissions from vehicle generation to vehicle generation. We offer the BEV i3 plug-in drive trains in the 2, 3, 5 and 7 Series, the X1, X3, X5 and the MINI Countryman and sold 146,160 PHEVs and BEVs (xEVs). By 2023, we plan to offer 25 electrified models, of which more than half will be BEVs. We expect e.g. in EU28 a xEV one-third share in 2025. We were e.g. able to reduce CO₂ emissions of our newly sold vehicles in Europe (EU-28) by around 42.4% between 1995 and 2019. The fleet averaged CO₂ emissions per kilometre worldwide in 2019 calculated from the core market values EU28, USA, China, Japan and Korea were 140 g CO₂/km (2018: 141 g CO₂/km) when taking into account properly the new EU28 test cycle reporting requirements in both years.

Other examples how our products & services contribute to avoid GHG emissions are our Car Sharing services SHARE NOW or features such as ConnectedDrive or ECO PRO mode:

- (1) In 2019 our premium car-sharing services SHARE NOW, a joint venture with Daimler AG, had several million customers in 27 cities and 14 countries used with a total of 3,505 electric cars in the fleet.
- (2) Connected Drive is a package of intelligent technologies that interconnect the driver, vehicle occupants, the vehicle itself and the environment. Contributions are made e.g. by identifying the fastest and most efficient routes or simplifying the search for a parking place – an activity that currently still accounts for about 30 % of city traffic.
- (3) All BMW models come standard with a Drive Performance control for activating the ECO PRO mode. Depending on individual driving style, the ECO PRO mode allows additional fuel savings of about 15%. As this mode is not activated in the usual test cycles, the full fuel savings are realized only in real day-to-day driving.

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

Use phase fuel consumption

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

88

Comment

To get a rough number we proceed as for “Low Carbon Products” and calculate the total CO₂ emissions avoided in 2019 for EU28 (about 40% of retail volume). Each model equipped with the newest Efficient Dynamics technology package saves annually a certain amount of fuel when compared to its predecessor (we compare the fuel consumption in the New European Driving Cycle and assume cars to be driven by 15,000 km each year on average). Summing up the fuel saving of all vehicles with the efficient dynamics technology package sold in Europe (EU28) but not taking into account the BEV’s and PHEV’s sold in 2019 gives a total amount of gasoline and diesel saved. Applying the emissions factor of 2.38 CO₂e per litre for vehicles with gasoline engines and 2.66 kg CO₂e per litre (diesel engines) and a GWP of CO₂ emissions equal to 1, the total amount of 212,000 metric tons CO₂e avoided is derived. We extrapolate emissions avoided worldwide by dividing the EU28 figure by 40% and find round about 530,000 t CO₂. Since we estimate in this category avoided emissions by third parties we add to the avoided emissions worldwide from conventional cars the avoided emissions from low carbon products to find about 760,000 t CO₂ avoided. The percentage of total revenues from Products in 2019 which avoid emissions is calculated as follows: To estimate the percentage of revenue for products & Services avoiding emissions we divide the revenues from the automotive segment by the total revenue of the BMW Group and find 88%.

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, 1990

Base year end

December 31, 1990

Base year emissions (metric tons CO₂e)

246,060

Comment

Scope 2 (location-based)

Base year start

January 1, 1990

Base year end

December 31, 1990

Base year emissions (metric tons CO₂e)

489,063

Comment

Scope 2 (market-based)

Base year start

January 1, 1990

Base year end

December 31, 1990

Base year emissions (metric tons CO₂e)

489,063

Comment

C5.2

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

European Union Emission Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for installations

European Union Emissions Trading System (EU ETS): The Monitoring and Reporting Regulation (MMR) – General guidance for aircraft operators

ISO 14064-1

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)

642,259

Comment

C6.2

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

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

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

Reporting year

Scope 2, location-based

1,420,172

Scope 2, market-based (if applicable)

302,574

Comment

Market-based emissions were calculated in accordance with the GHG Protocol Scope 2 Guidance. Landfill gas and wood pellets used in our operations as well as electricity from renewable energy sources has been multiplied with an emission factor of zero when calculating the BMW Group CO₂ emissions. We applied our supplier's electricity labelling in Germany plus updated VDA factors.

Location-based emissions were calculated by multiplying the third-party electricity and heat purchased with the newest VDA factors (VDA: German Automotive Association).

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

Some international R&D offices, BMW Group owned branches and other buildings.

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

These emissions are estimated to account for less than 5% of our total CO₂e emissions. By assessing and managing our CO₂ emissions, we are driven by materiality. We therefore focused first on our vehicle production sites where about 90% of emissions occur. Next largest amount of emissions stem from administration and R&D located in Munich as well as from the motorcycle production sites. These are included in our CDP response since 2015 and are externally verified by PWC since 2016. The same is true since 2018 for administration and R&D of BMW Groups Joint Venture BBA in Shenyang, China. We consider emissions from other international R&D offices, BMW Group owned branches and other buildings as to be not relevant because they account for less than 5% of total emissions but collection would cause disproportionately high costs since various locations distributed around the world contribute (disadvantageous cost/benefit relation).

Source

CO₂e emissions from VOC and N₂O.

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

These emissions in CO₂ equivalent account for <1 % of our total CO₂ equivalent emissions. By assessing and managing our CO₂ emissions, we are driven by materiality. Due to the very small percentage these emissions are therefore not listed in our sustainable value report 2019 and the annual report 2019. To be consistent with the already published data we omit them here too.

Remark: Nevertheless, reduction of VOC is an important target but not due to its carbon potential but its effects on human health. We set as target a reduction of VOC emissions per vehicle by 45% between 2006 and 2020. Between 2006 and 2019 solvent emissions were already reduced by 66.1%.

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

18,505,921

Emissions calculation methodology

(i) Types and sources of data: The BMW Group analyses the environmental impact over the entire product life cycle and monitors the respective targets with the well-established instrument of life cycle analysis (LCA; ISO 14040/ISO 14044) using the commercial life cycle inventory GaBi4. Main input for the LCAs are detailed, car model specific material inventories, containing weights and material compositions of all parts. Emission figures are derived from processing procedure models, data as well as emission factors of GaBi4. Global warming potentials (GWP) applied are from the Institute of Environmental Sciences (CML) of the university Leiden (Netherlands). Emissions from purchased goods and services are one contribution to the overall emission figure calculated from the LCAs which can be separated. To calculate the emission figure we used in addition exact volumes of all vehicles respectively model types produced in 2019.

(ii) Data quality: The data quality of our product specific material inventories and therefore the basis of our calculations are assessed to be high. Limitations in exactness come from two sources: (1) Use of industry average processing models and average data of GaBi4, necessary as the BMW Group depends on information from members of the supply chain who do not yet report their Scope 1 & 2 emissions to provide exact figures. (2) BMW Group prioritized the main models (1, 3, 5, 7, X3, X5, i3) in analyzing full scale LCAs. Other sale figures are attributed to the most comparable model to calculate total CO₂ emission from purchased goods and services. The data as well as the emission figure has been checked by PwC in limited assurance. (iii) Methodologies, assumptions, allocations: Based on detailed material inventories we calculated the

LCAs of the BMW 1, 3, 5, 7, X3, X5 Series and i3 with the life cycle inventory GaBi4 and the CML GWPs and extracted the emission figures of the purchased goods and services. We then allocated all vehicles produced in 2019 to the model which fits best. Multiplying the number of assigned vehicles with the emission figure of the corresponding model we calculated as sales weighted emission figure 18,505,921 metric tons CO₂e for purchased goods and services.

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

100

Please explain

Capital goods

Evaluation status

Not relevant, explanation provided

Please explain

BMW Group focuses on scope 3 emission categories which are identified as relevant according to the following two criteria: Share in total BMW Group scope 3 emissions and influence of BMW Group on emission reductions. We do not regard this scope3 category to be of particular relevance because of our limited influence on these suppliers. The corresponding emissions are estimated to be below 5% of our total scope3 emissions in 2019. The selection of new equipment or buildings focuses on the use phase (increased resource efficiency, minimized CO₂ emissions). Our influence on operations and therefore on CO₂ emissions of these kinds of suppliers is less than e.g. for suppliers of production material where we often have closely collaborated for many years. Nevertheless, measures to improve CO₂ emissions performance are the same applying for all direct and indirect suppliers which are described in more detail in C12.1a (e.g. contractually fixed requirement to install an environmental management system).

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

Evaluation status

Not relevant, explanation provided

Please explain

BMW Group focuses on scope 3 emission categories which are identified as relevant according to the following two criteria: Share in total BMW Group scope 3 emissions and influence of BMW Group on Emission Reductions. According to our estimates the scope 3 emissions of "Fuel-and-energy-related activities" are below 1% of total BMW Group scope 3 emissions. Furthermore, BMW Group cannot directly influence the efficiency losses in energy grids and transport. Consequently, the scope 3 category "Fuel-and-energy-related activities" is not of substantial relevance. To get a rough estimate of the scope 3 emissions of "Fuel-and-energy-related activities" we used fuel and country specific CO₂ emission factors for indirect emission (provided by GEMIS, VDA emission

factors and IEA CO₂ emissions from fuel combustion 2006). These emission factors were multiplied with real activity data on the fuel input of BMW Group.

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

1,570,397

Emissions calculation methodology

(i) Types and sources of data: Real activity data in tons transport capacity per kilometer was used to calculate CO₂ emissions for upstream transportation and distribution. Total transport capacity (inbound and outbound) in 2019 was 42,123 million tkm. With the 2019 system boundaries, we have reached an estimated coverage of about 90 % of the CO₂ emissions from logistics. The scope currently comprises: Inbound volumes (material supplies to plants and spare parts delivery) for BMW and MINI vehicles in Germany, UK, USA, South Africa, China, Thailand, India and CKD/SKD locations as well as for delivery of spare parts to the parts supply center in Dingolfing (Germany). Outbound volumes (vehicle distribution of vehicles and spare parts) are included up to arrival at the distribution centers in the markets worldwide as well as for some markets up to arrival at the dealerships. Emission factors for freight by road (about 73 g CO₂/tkm), train (between 14 and 23 g CO₂/tkm depending on the train type), air (570 respectively 733 g CO₂/tkm depending on the airplane type) and ship (about 10 g CO₂ /tkm for container carriers and 33 g CO₂ /tkm for car carriers) are used according to direct reporting of CO₂ factors by transport companies and Tremod. (ii) Data quality: The data quality is assessed to be high as real activity data was used. The data as well as the emission figure has been checked by PwC in limited assurance. (iii) Methodologies, assumptions, allocations: CO₂ emissions are calculated in accordance with DIN EN 16258. Transport capacities for road, rail, air and sea transport were measured. Limitations in scope are described under (i). For each transport capacity average emission factors described under (i) were multiplied with transport capacities. Other assumptions than average emissions were not made.

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

100

Please explain

Waste generated in operations

Evaluation status

Not relevant, explanation provided

Please explain

BMW Group focuses on scope 3 emission categories which are identified as relevant according to the following two criteria: Share in total BMW Group scope 3 emissions and influence of BMW Group on Emission Reductions. According to our estimates the scope 3 emissions of “Waste generated in operations” are below 0.1% of total BMW Group scope 3 emissions. In consequence this category is not of substantial relevance. However, due to our strong commitment to recycling and closed loops with many initiatives implied already in recent years total waste for disposal was reduced to 9,749 tons in 2019 (–78.4% since 2006) which is equivalent to a reduction in scope3 emissions in this category.

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO₂e

129,646

Emissions calculation methodology

(i) Types and sources of data: CO₂ emissions from Business travel are calculated from real activity data in regard to destinations, transport kilometers and the mode of transport used. Business travel in scope covers more than 90% of the total BMW Group business travel. Air travel is based on data from sold tickets respectively passenger miles booked with Bavaria-Lloyd Reisebüro GmbH (German and Austrian entities), global business travel is based on data delivered from the international BMW Group offices. Travel with rental cars is based on data of all bookings (national and international) within the BMW accounts with Sixt and AVIS. Travel by train is considered without Germany (our German rail business travel is CO₂ neutral). To calculate the emission figure from these data we used the publicly available “GHG Protocol tool for mobile combustion. Version 2.6”. The emission factors of this tool come from the UKs DEFRA, the US EPA and the IPCC 2006 Guidelines for National Greenhouse Gas Inventories.

(ii) Data quality: The data quality is assessed to be high as real activity data was used. A few markets send only a list of destinations. In this case we calculated the corresponding distances by our own. The data as well as the emission figure has been checked by PwC in limited assurance.

(iii) Methodologies, assumptions, allocations: In a few markets we had to calculate the travel distances from the delivered lists of destinations. We allocated the business travel respectively the distances travelled to the categories of each mode of transport as given by the GHG Protocols mobile combustion tool (e.g. domestic, short or long haul air travel with economy, business or first class). We put in the distances into the mobile combustion tool (excel based). The emission figure for business travel of 129,646 metric tons CO₂e is calculated automatically by this tool.

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

146,298

Emissions calculation methodology

(i) Types and sources of data: To calculate CO₂-emissions from employee commuting BMW Group relies on real activity data for trips to and from destinations for 62% of employees of the BMW Group. The travel data was aggregated to the following modes: "Car kilometers", "public transport kilometers", "plant bus kilometers" and "bicycle" respectively "foot kilometers". These activity data were multiplied with corresponding emission factors: For the total sum of kilometers driven with the employee cars we used 182 g CO₂ / km, for the total sum of kilometers travelled via public transportation we used 75 g CO₂ / km and for the total sum of kilometers driven with the plant buses we used 742 g / km. The average emission factors for car travel and public transport were taken from the ifeu institute and Tremod. For plant busses we gathered information on the fuel consumption directly from the bus companies and used the diesel emission factor of 2.66 kg CO₂ per litre. The mileage was assessed by census at the production sites. (ii) Data quality: The data quality is assessed to be high as real activity data was used. The data as well as the emission figure has been checked by PwC in limited assurance. (iii) Methodologies, assumptions, allocations: For the activity data census were carried out in recent years and further validated by comparisons with parking spot use, public transport job ticket holders, plant bus registrations and the number of available parking spots for bicycles.

Further assumptions based on the census were: 1.08 BMW employees travelled on average per car and the average daily distance was 27 km. The average public transport distance was 20 km and the average plant bus distance was 44 km. Finally, the bicycle and pedestrian average distance was 4 km. To calculate the emission figure we summed up the kilometers travelled by the employees in each mode in 2019 and multiplied with the corresponding emission factors. Finally, the so obtained emission figure is divided by 0.61 (61% of employees are covered by the real activity data) to extrapolate the emissions from employee commuting for the whole BMW Group.

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

61

Please explain

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

BMW Group focuses on scope 3 emission categories which are identified as relevant according to the following two criteria: Share in total BMW Group scope 3 emissions and influence of BMW Group on Emission Reductions. Emissions from upstream leased assets belonging to our production network are included in our scope 1 and scope 2 emission figures. In addition to this, leased assets worldwide such as office buildings not included in scope 1 and scope 2 make a negligible contribution when compared to our total scope 3 emissions. Therefore, emissions from upstream leased assets are of minor relevance.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

BMW Group focuses on scope 3 emission categories which are identified as relevant according to the following two criteria: Share in total BMW Group scope 3 emissions and influence of BMW Group on Emission Reductions. The scope 3 category "Downstream transportation and distribution" is assessed to be close to 0 and so to be of no relevance: According to the GHG Protocol "Downstream transportation and distribution" is defined as "Transportation and distribution of products sold by the reporting company between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company)". Transportation of our products to pick-up of customer in either BMW Group owned or BMW Group franchised dealerships is paid for by BMW Group and therefore included in the scope 3 category "Upstream transportation and distribution". Retail and Storage of our products is also accordingly accounted for in either scope 1+2 (BMW Group owned dealerships) or in the scope 3 category "Franchises".

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

BMW Group focuses on scope 3 emission categories which are identified as relevant according to the following two criteria: Share in total BMW Group scope 3 emissions and influence of BMW Group on Emission Reductions. BMW Groups core business, premium mobility products and services are consumer goods, which are not further processed. We sell small amounts of engines / powertrains to other companies resulting in negligible emissions from further processing. Consequently, the scope 3 category "Processing of sold Products" is not relevant for BMW Group.

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

53,421,006

Emissions calculation methodology

(i) Types and sources of data: The emission figure is based on real activity data of the main sales markets Europe (EU28), USA, China Japan and Korea, covering about 88% of our worldwide sales. By law we have to know the exact average CO2 emission figure of each car and, in consequence, for the fleet of new vehicles sold in the corresponding market (e.g. 127 g CO2 / km in EU28 in 2019 when taking into account properly the new EU28 test cycle as well as reporting requirements in place since 2019 as described in footnote 1 on p. 41 in

https://www.bmwgroup.com/content/dam/grpw/websites/bmwgroup_com/responsibility/downloads/en/2020/2020-BMW-Group-SVR-2019-Englisch.pdf), accounting for different driving cycles depending on the country and according to national legislation.

Furthermore, we used the sales volumes of 2019 in these markets as well as the total sales volume of 2,538,367 vehicles. (ii) Data quality: Due to the regulated and standardized measurement of the CO2 emissions in driving cycles of the corresponding markets, data quality is assessed to be high. The data as well as the emission figure has been checked by PwC in limited assurance. (iii) Methodologies, assumption, allocations: To calculate total emissions from the use of sold products additional assumption is an average mileage of 150,000 km over life time. We multiplied the average fleet emissions (g CO2 / km) of the above mentioned markets with the corresponding sales volumes to get a sales volume weighted average emission figure. Multiplying this figure with the average mileage of 150,000 km and the total worldwide sales volume gives the total emissions from the use phase of our cars sold in 2019.

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

100

Please explain**End of life treatment of sold products****Evaluation status**

Relevant, calculated

Metric tonnes CO2e

1,269,018

Emissions calculation methodology

(i) Types and sources of data: BMW Group analyses the environmental impact over the entire product life cycle and monitors the respective targets with the well-established instrument of life cycle analysis (LCA; ISO 14040/ISO 14044) using the commercial life cycle inventory GaBi4. Main input are detailed, car model specific material inventories,

containing weights and material compositions of all parts. Emission figures are derived from processing procedure models, data as well as emission factors of GaBi4. GWPs applied are from the Institute of Environmental Sciences (CML) of the university Leiden (Netherlands). Emissions from end of life treatment of sold products are one contribution to the overall emission figure calculated from the LCAs which can be separated. To calculate the emission figure we used in addition exact volumes of all vehicles respectively model types produced in 2019. (ii) Data quality: The data quality of our product specific material inventories and therefore the basis of our calculations is assessed to be high. Limitations in exactness come from two sources: (1) Use of industry average processing models and average data of GaBi4. (2) BMW Group prioritized the main models (1, 3, 5, 7, X3, X5, i3) in analyzing full scale LCAs. Other sales figures are attributed to the most comparable model to calculate total CO₂ emission from end of life treatment of sold products. The data as well as the emission figure has been checked by PwC in limited assurance. (iii) Methodologies, assumption, allocations: Based on detailed material inventories we calculated the LCAs of the BMW 1, 3, 5, 7, X3, X5 Series and i3 with the life cycle inventory GaBi4 and the CML GWPs. When modelling the end of life treatment we follow the standard processes as given by the EU directive for end-of-life vehicles (2000/53/EC) as well as the directive (2005/64/EC). When calculating the emission figures we did not account for “credits” from energy recovery or recycling. We extracted the emission figures of the end of life treatment of sold products from the LCAs. We then allocated all vehicles sold in 2019 to the model which fits best. Multiplying the number of assigned vehicles with the emission figure of the corresponding model we calculated as sales weighted emission figure 1,269,018 metric tons CO₂e from the end of life treatment of sold products in 2019.

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

Please explain

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

BMW Group focuses on scope 3 emission categories which are identified as relevant according to the following two criteria: Share in total BMW Group scope 3 emissions and influence of BMW Group on Emission Reductions. Scope 3 emissions from downstream leased assets stem from Alphabet, which is a multi-marque fleet funding company, part of the BMW Group, currently operating in 19 countries. To calculate a total emission figure we have to exclude from the total volume of lease contracts the leased cars of the BMW Group since these are already included in the calculation of the use phase emissions. Emissions from vehicles of other brands contribute to the whole Scope3 emissions <1%. Furthermore, BMW Group has limited influence on the fuel efficiency of

vehicles from other OEMs as well as on customer's preferences. Therefore, we consider this category as "not relevant, explanation provided".

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

BMW Group focuses on scope 3 emission categories which are identified as relevant according to the following two criteria: Share in total BMW Group scope 3 emissions and influence of BMW Group on Emission Reductions. According to our estimates the scope 3 emissions of "Franchises" are below 2% of total BMW Group scope 3 emissions. Furthermore, BMW Group has limited influence on BMW Group dealerships, for which we do not have operational control. Nonetheless, we started raising awareness of resource- and CO₂-matters amongst our international, independent dealer network, by launching a sustainability initiative within the sales & marketing division of the BMW Group, also involving the country representatives. Part of this initiative is a worldwide dealer competition on 'sustainability leadership' amongst our entire dealer network. Due to the relative small amount of total scope 3 emissions in the category "Franchises" and limits to our operational influence we assess "Franchises" as not of particular relevance concerning BMW Groups scope3 emissions. To get a rough estimate of the scope 3 emissions of "Franchises" we calculated the intensity figure for CO₂ emissions/per automobile sold in BMW Group owned dealerships in Germany, relying on directly monitored information on CO₂-emissions. This intensity figures were then multiplied with global retail figures, excluding the retails of BMW Group owned dealerships, to estimate the total CO₂-emissions of BMW Groups independent global dealership network. We acknowledge limited accuracy due to the assumptions of "new vehicles sold" as CO₂-intensity for total dealership CO₂ emissions.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

BMW Group focuses on scope 3 emission categories which are identified as relevant according to the following two criteria: Share in total BMW Group scope 3 emissions and influence of BMW Group on Emission Reductions. According to our estimates the scope 3 emissions from "Investments" are significantly below 1% of the total BMW Group scope 3 emissions. Due to the low amount of emissions in relation to the total BMW Group scope 3 emissions the scope 3 category "Investments" is not of substantial relevance. To estimate the emissions, we analyzed in a first step all assets and identified those with material emissions (companies in the transportation or production sector, BMW Group share >5%). The joint venture BMW Brilliance Automotive Ltd. (Shenyang, China) is a major example which however is already included in BMW Groups Scope 1 & 2 emissions. SGL Carbon Fibers LLC (Delaware, USA) is another example. We then estimated roughly from energy data and the newest VDA emission factors corresponding CO₂ emissions.

Other (upstream)

Evaluation status

Please explain

Other (downstream)

Evaluation status

Please explain

C6.7

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

No

C6.10

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

Intensity figure

0.000009067

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

944,833

Metric denominator

unit total revenue

Metric denominator: Unit total

104,210,000,000

Scope 2 figure used

Market-based

% change from previous year

21.6

Direction of change

Decreased

Reason for change

Increased CO₂ efficiency due to emission reduction activities caused the decrease in CO₂ emissions / revenue by 21.6% when compared to the 2018 figure of 0.000011567 (Remark: Prior year's revenue figures adjusted due to a change in accounting policy in connection with the adoption of IFRS16. In addition, figures for the prior year have been adjusted due to changes in presentation of selected items, which are not material overall. The 2018 value is changed compared to the one given in the last years CDP response. In the Annual Report 2019 total revenue of 2018 was adjusted to a value of 96,855,000,000 €. Please see footnote 1 on p.5 of the BMW Group Annual Report 2019)

The intensity figure is calculated by dividing emissions from production, administration and company owned vehicles and planes by revenue. In particular increase in energy efficiency as well as use of environmentally friendly and economically sustainable energy resources and purchase of electricity produced from regenerative sources helped to reduce the CO₂ emissions in production and administration in 2019 by 15.66%.

Intensity figure

0.3

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

697,024

Metric denominator

vehicle produced

Metric denominator: Unit total

2,337,697

Scope 2 figure used

Market-based

% change from previous year

25

Direction of change

Decreased

Reason for change

Increased CO₂ efficiency due to emission reduction activities caused the decrease in CO₂ emissions / vehicles produced in the BMW Group production network without volumes of partner plants by 25% when compared to the 2018 figure of 0.40 although the volume of vehicles produced has increased more than 3%.

The intensity figure is calculated from Scope 1 and Scope 2 CO₂ emissions from vehicle production, without motorcycles, minus CHP (combined heat and power plants) losses

divided by the total number of vehicles produced, incl. BMW Brilliance Automotive Ltd. joint venture, Shenyang / CN, not including the vehicles from the Magna Steyr and Nedcar contract production plants.

In particular increase in energy efficiency as well as use of environmentally friendly and economically sustainable energy resources and purchase of electricity produced from regenerative sources helped to reduce the CO₂ emissions in production in 2019 by 25%.

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 CO ₂ e)
Germany	472,050
China	42,141
United States of America	50,411
United Kingdom of Great Britain and Northern Ireland	50,334
South Africa	9,960
Austria	9,394
India	64
Thailand	22
Brazil	2,057
Mexico	5,826

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 CO ₂ e)
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BMW Group production network	506,149
Company owned vehicles	85,667
BMW Business Aviation	6,098
Central Administration & Research and Innovation Centers	44,345

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

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

	Gross Scope 1 emissions, metric tons CO ₂ e	Comment
Transport OEM activities	506,149	Emissions from our production network (car and motorcycle production).

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)	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)
Germany	589,180	33,389	1,251,561	1,093,725
China	454,648	68,603	666,008	494,931
United States of America	149,641	149,578	303,405	0
United Kingdom of Great Britain and Northern Ireland	64,660	0	217,712	217,712
South Africa	69,070	51,004	62,507	16,350
Austria	50,168	0	215,196	215,196
Mexico	31,399	0	56,170	56,170
India	3,415	0	2,042	2,042
Thailand	2,703	0	5,007	5,007
Brazil	5,288	0	20,182	20,182

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 CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)
BMW Group Production Network	1,252,396	275,373
Central Administration & Research and Innovation Centers	167,776	27,201

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

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

	Scope 2, location-based, metric tons CO ₂ e	Scope 2, market-based (if applicable), metric tons CO ₂ e	Comment
Transport OEM activities	1,252,396	275,373	Emissions from our production network (car and motorcycle production).

C-TO7.8

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

Activity

Light Duty Vehicles (LDV)

Emissions intensity figure

0.00014

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

53,421,006

Metric denominator

p.km

Metric denominator: Unit total

380,760,000,000

% change from previous year

-0.7

Vehicle unit sales in reporting year

2,538,367

Vehicle lifetime in years

15

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

10,000

Load factor

1

Please explain the changes, and relevant standards/methodologies used

Changes: Since 2007 BMW Group's Efficient Dynamics (ED) is a comprehensive technologic approach for the consistent reduction of fuel consumption and emissions in the standard configuration of all cars of the BMW Group. It includes highly-efficient cars with gradually refined combustion engines and BEVs / PHEVs. In 2019 we offered plug-in hybrid drivetrains for the 2, 3, 5 and 7 Series, the X1, X2, X3, X5, the MINI Countryman and the BMW i8 as well as the BEV BMW i3 and the MINI Cooper SE. In 2019, we sold 146,160 electrified vehicles worldwide (BEVs: 59,312 und PHEV: 86,947), a 2.7% increase compared to 2018, and led e.g. in 2018 the German market for electrified vehicles and ranked second in Europe. Worldwide fleet average CO₂ emissions per kilometer fell by 0.7% to 140 g CO₂/km (2018: 141 g CO₂/km), mainly due to this increase.

Standards / Methodologies: The emission figure is based on data of the main markets Europe (EU28), USA, China, Japan and Korea, covering about 88% of our worldwide sales. By law we have to know the exact average CO₂ emission figure of each car and for the fleet of new vehicles sold in the corresponding market, accounting for different driving cycles depending on the country and according to national legislation. The emissions intensity figure of 140 g CO₂ / km (which equals to 0.000140 t CO₂ / km) is calculated by multiplying the average fleet emissions (g CO₂ / km) of the above mentioned markets with the corresponding sales volumes to get a sales volume weighted average emission figure. To calculate total emissions additional assumption is an average kilometrage of 150,000 km over life time (10,000 km per year, 15 years of life time). Multiplying the sales volume weighted average emission figure by 150,000 km and the total worldwide sales volume of 2,538,367 vehicles gives the total emissions from the use phase of our cars sold in 2019 of 53,421,006 t CO₂. We use 1 as load factor. This is consistent with worldwide regulations as well as with the world wide fuel economy figure as presented in company communications and our sustainability report. Furthermore, we do not have precise information about the load factor of our vehicles

due to customer's privacy.

C7.9

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

Decreased

C7.9a

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

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	177,068	Decreased	15.8	<p>In 2019 the amount of electricity from renewable sources delivered to the BWM Group locations was increased resulting in a 177,068t CO2 decrease when compared to 2018 and, correspondingly, to a 15.8% decrease $(-15.8\% = (-177,068 / 1,120,325) * 100)$ with the 2018 Scope1&2 emissions of 1,120,325 t CO2.</p> <p>In 2019 again 100% of the BMW Group European sites were delivered with electricity from renewable sources.</p> <p>In particularly the 100% green energy supply in our production sites in Shenyang / CN and, to a smaller extend, in San Luis Potosi / MX, led to a significant reduction in CO2 emissions of 216,236 tonnes due to the replacement of electricity produced from energy sources with a high CO2 content (in particular coal) with green electricity. However, on the other hand, calculating the CO2 emission increase of the 2018 emissions due to an increase in vehicles respectively motorcycles produced within the BMW Group production network in 2019 when compared to 2018 (e.g. a 3.2% increase in vehicles produced) assuming a constant CO2 efficiency means to assume an</p>

				additional amount of green electricity, corresponding to 39,168 tonnes of CO ₂ . Therefore the CO ₂ emissions reduced in 2019 by achieving 100% green electricity also in our production sites in China and Mexico as well as in Thailand are 216,236 minus 39,268 equals 177,068 t CO ₂ .
Other emissions reduction activities	29,897	Decreased	2.7	BMW Group systematically analyses emission reduction potentials with a special focus on the production sites owned by BMW Group and realized a 2.7 % decrease in CO ₂ emissions due to emission reduction activities in 2019. This corresponds to a total decrease of 29,897t CO ₂ ($-2.7\% = (-29,897 / 1,120,325) * 100$) with the 2018 Scope1&2 emissions of 1,120,325 t CO ₂ . Implementation of 144 measures to improve energy efficiency of existing processes / technologies (e.g. paint shops) led to a decrease in CO ₂ emissions despite an increase in extreme weather situations and a slight decrease of production volume with the shift model remaining unchanged in some plants, both being effects which increase energy consumption.
Divestment				
Acquisitions				
Mergers				
Change in output	34,162	Increased	3	The increase of CO ₂ emissions from the BMW Group own operations of 3.0% due to the change in output is related to the decrease in vehicle and motorcycle production volume (e.g. a 3.0% decrease in vehicle production volume) and equals to 34,162t CO ₂ ($3.0\% = 34,162 / 1,120,325$) with the 2018 Scope1&2 emissions of 1,120,325 t CO ₂ . To calculate the CO ₂ increase from the 2019 emissions due to the change in output we assume constant CO ₂ efficiencies. Due to the significance of contract production, only vehicles manufactured at BMW production plants are taken into account when calculating

				the vehicle volume. Efficiency of contract production is assessed separately.
Change in methodology				
Change in boundary				
Change in physical operating conditions				
Unidentified				
Other	2,689	Decreased	0.24	In 2019 BMW Group continued to expand its international production network resulting in international travel activities. One example are activities in terms of the construction of our site extension in Shenyang, China. Furthermore, the variety of new models and technologies to be developed for series maturity result in testing activities and in addition in travel to e.g. suppliers with company owned cars and correspondingly in fuel consumption. CO2 emissions from BMW Group owned planes as well as vehicles have been slightly decreased by 2.689 t CO2 in 2019 when compared to 2018. This leads to a decrease in CO2 emissions of 0.24% (0.24% = 2,689 / 1,120,325) with the 2018 Scope1&2 emissions of 1,120,325 t CO2.

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	Yes
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)	HHV (higher heating value)	165,025	3,395,072	3,560,097
Consumption of purchased or acquired electricity		2,090,114	349,561	2,439,675
Consumption of purchased or acquired heat		30,078	328,914	358,992
Consumption of purchased or acquired cooling		1,123	0	1,123
Consumption of self-generated non-fuel renewable energy		1,703		1,703

Total energy consumption		2,288,043	4,073,547	6,361,590
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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	Yes

C8.2c

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

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

156,894

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

2.66

Unit

kg CO2 per liter

Emissions factor source

Internal specification (the emission factor depends e.g. on the fuel quality and therefore has to be specified)

Comment

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

206,356

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

2.38

Unit

kg CO2 per liter

Emissions factor source

Internal specification (the emission factor depends e.g. on the fuel quality and therefore has to be specified)

Comment

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

3,005,902

MWh fuel consumed for self-generation of heat

1,751,762

MWh fuel consumed for self-cogeneration or self-trigeneration

1,254,140

Emission factor

0.2

Unit

metric tons CO2 per MWh

Emissions factor source

This is an averaged emission factor for our production network. We use in our calculations country specific emissions factors from the Association of the German Automotive Industry (VDA) in its newest version. However, for oil and gas these emission factors do not vary significantly from country to country.

Comment

Fuels (excluding feedstocks)

Landfill Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

164,957

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

164,957

Emission factor

0

Unit

metric tons CO2 per MWh

Emissions factor source

We treat landfill gas used in our combined heat and power plant in Spartanburg (USA) as biogas with a corresponding Association of the German Automotive Industry (VDA) emission factor of 0.

Comment

Fuels (excluding feedstocks)

Fuel Oil Number 1

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

2,205

MWh fuel consumed for self-generation of heat

2,205

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.27

Unit

metric tons CO₂e per MWh

Emissions factor source

This is an averaged emission factor for our production network. We use in our calculations country specific emissions factors from the Association of the German Automotive Industry (VDA) in its newest version. However, for oil and gas these emission factors do not vary significantly from country to country.

Comment

Fuels (excluding feedstocks)

Jet Kerosene

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

23,715

MWh fuel consumed for self-generation of heat

0

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0.07

Unit

metric tons CO₂ per GJ

Emissions factor source

We treat landfill gas used in our combined heat and power plant in Spartanburg (USA) as biogas with a corresponding Association of the German Automotive Industry (VDA) emission factor of 0.

Comment

Fuels (excluding feedstocks)

Wood

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

68

MWh fuel consumed for self-generation of heat

68

MWh fuel consumed for self-cogeneration or self-trigeneration

0

Emission factor

0

Unit

metric tons CO₂ per MWh

Emissions factor source

We use in our calculations the emissions factor for biomass as given in the latest version of the Association of the German Automotive Industry (VDA) emissions factors.

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	530,345	530,345	44,016	44,016
Heat	2,150,133	2,150,133	54,152	54,152
Steam	0	0	0	0
Cooling	0	0	0	0

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

Unbundled energy attribute certificates, Guarantees of Origin

Low-carbon technology type

Other, please specify

Green electricity mix from solar, wind, hydropower, biomass and landfill gas

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

Germany

MWh consumed accounted for at a zero emission factor

1,066,205

Comment

In Germany, BMW Group purchased guarantees of origin for 1,066,205 MWh of 100% green electricity. RWE, the balance group manager in Germany, delivers electricity to the BMW Group locations in Germany.

Sourcing method

Unbundled energy attribute certificates, Guarantees of Origin

Low-carbon technology type

Other, please specify

Green electricity mix from solar, wind, hydropower, biomass and landfill gas

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

Austria

MWh consumed accounted for at a zero emission factor

185,118

Comment

In Austria, BMW Group purchased guarantees of origin for 185,118 MWh of 100% green electricity. ENAMO and Verbund AG are the electricity suppliers for our engine plant in Steyr (Austria). In Steyr 100% of electricity purchased is from renewable sources.

Sourcing method

Unbundled energy attribute certificates, Guarantees of Origin

Low-carbon technology type

Other, please specify

Green electricity mix from solar, wind, hydropower, biomass and landfill gas

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

United Kingdom of Great Britain and Northern Ireland

MWh consumed accounted for at a zero emission factor

217,712

Comment

In UK, BMW Group purchased guarantees of origin for 217,712 MWh of 100% green electricity. In UK Engie delivered BMW Group with 100% renewable electricity backed by Renewable Energy Guarantees of Origin (REGOs).

Sourcing method

Unbundled energy attribute certificates, International REC Standard (I-RECs)

Low-carbon technology type

Other, please specify

Green electricity mix from solar, wind, hydropower, biomass and landfill gas

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

India

MWh consumed accounted for at a zero emission factor

2,042

Comment

In India, BMW Group purchased Unbundled energy attribute certificates, International REC Standard (I-RECs) for 2,042 MWh of 100% green electricity.

Sourcing method

Unbundled energy attribute certificates, International REC Standard (I-RECs)

Low-carbon technology type

Other, please specify

Green electricity mix from solar, wind, hydropower, biomass and landfill gas

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

Thailand

MWh consumed accounted for at a zero emission factor

5,007

Comment

In Thailand, BMW Group purchased Unbundled energy attribute certificates, International REC Standard (I-RECs) for 5,007 MWh of 100% green electricity.

Sourcing method

Power purchase agreement (PPA) with a grid-connected generator with energy attribute certificates

Low-carbon technology type

Other, please specify

Green electricity mix from solar, wind, hydropower, biomass and landfill gas

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

Mexico

MWh consumed accounted for at a zero emission factor

56,170

Comment

In Mexico, BMW Group purchased Power purchase agreement (PPA) with a grid-connected generator with energy attribute certificates for 56,170 MWh of 100% green electricity.

Sourcing method

Heat/steam/cooling supply agreement

Low-carbon technology type

Biomass

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

Austria

MWh consumed accounted for at a zero emission factor

30,078

Comment

Fernwärme Steyr GmbH contractually guarantees to distribute heat generated to 100% from the Biomass-KWK-Power Plant of Bioenergie Steyer, Ramingsdorf, to the BMW AG. In 2019 the heat distributed amounted to 30,078 MWh.

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

Wind

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

Germany

MWh consumed accounted for at a zero emission factor

26,398

Comment

Electricity from four on-site wind turbines is directly used in the Leipzig plant in Germany. In 2019 the wind turbines produced 26,398 MWh of electricity.

Sourcing method

Heat/steam/cooling supply agreement

Low-carbon technology type

Other, please specify
Düker drainage pipe systems

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

Germany

MWh consumed accounted for at a zero emission factor

1,123

Comment

A total amount of 1,123 MWh of community cooling is delivered from Stadtwerke Munich (municipal utilities) to the Central Administration & Research and Innovation Center (FIZ), using nearsurface ground water.

Sourcing method

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

Low-carbon technology type

Biomass

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

South Africa

MWh consumed accounted for at a zero emission factor

16,350

Comment

In Rosslyn (South Africa) a biogas-powered twin-unit power station started operation and delivered 16,350 MWh of electricity via grid. It is operated by the new independent provider Bio2Watt. The biogas used comes from recycled waste from cattle ranches and chicken farms as well as food waste.

Sourcing method

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

Low-carbon technology type

Wind

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

China

MWh consumed accounted for at a zero emission factor

414,931

Comment

In China for our production sites in Shenyang green electricity products (e.g. green tariffs) from an energy supplier, not supported by energy attribute certificates has been signed to deliver 414,931 MWh produced from wind mills.

Sourcing method

Unbundled energy attribute certificates, International REC Standard (I-RECs)

Low-carbon technology type

Wind

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

China

MWh consumed accounted for at a zero emission factor

80,000

Comment

In China for our production sites in Shenyang Unbundled energy attribute certificates, International REC Standard (I-RECs) has been signed to deliver 80,000 MWh produced from wind mills.

Sourcing method

Unbundled energy attribute certificates, International REC Standard (I-RECs)

Low-carbon technology type

Wind

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

Brazil

MWh consumed accounted for at a zero emission factor

20,182

Comment

In Brazil for our production sites in Araquari we purchased and redeemed 20,182 MWh of I-REC standard attribute tracking certificates. This electricity was produced from wind mills.

C-TO8.5

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

Activity

Light Duty Vehicles (LDV)

Metric figure

2.04

Metric numerator

MWh

Metric denominator

Production: Vehicle

Metric numerator: Unit total

4,782,738

Metric denominator: Unit total

2,337,697

% change from previous year

-3.8

Please explain

The metric numerator is given by the energy consumption for production of the vehicles in the BMW Group production network in 2019 of 4,782,738 MWh. This metric measures the energy efficiency of the BMW Group production technologies which is why we

subtracted the losses of our own Combined Heat and Power plant installations. The metric denominator is given by 2,337,697 vehicles produced in the BMW Group owned facilities. The metric is then calculated by dividing the energy value from the vehicle production sites with the vehicle number plus the energy value from the engine production sites with the engines produced, which can be slightly different from the number of vehicles due to production of engines for our third party business. This results in 2.04 MWh per vehicle produced. In 2019, we were able to reduce energy consumption from our vehicle production by 3.8% compared to the previous year to 2.04 MWh per vehicle produced (2018: 2.12). In 2019 we implemented e.g. 144 single measures to improve energy efficiency of existing processes / technologies (e.g. paint shops). Due to these measures we were able to further improve energy efficiency despite an increase in extreme weather situations and a slight decrease of production volume with the shift model remaining unchanged in some plants.

C9. Additional metrics

C9.1

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

C-TO9.3/C-TS9.3

(C-TO9.3/C-TS9.3) Provide tracking metrics for the implementation of low-carbon transport technology over the reporting year.

Activity

Light Duty Vehicles (LDV)

Metric

Sales

Technology

Other, please specify

Number of PHEVs and BEVs (xEVs)

Metric figure

146,160

Metric unit

Units

Explanation

It is our goal to create solutions and innovations that inspire our customers. Strategy NUMBER ONE > NEXT is the path to the BMW Group's success over the long-term. It provides a roadmap for our transformation towards sustainable and digital mobility. Our

future is electric. The BMW Group develops electric vehicles that combine the advantages of sustainable mobility with a new driving experience for customers.

We have the BEV BMW i3 and Mini Cooper SE as well as the 2, 3, 5 and 7 Series, X1, X2, X3, X5, the MINI Countryman and the i8 as PHEV models.

In 2019, we sold 146,160 electrified vehicles worldwide (BEVs: 59,213; PHEVs: 86,947), a further increase in volume by 2,7% compared to 2018, and led e.g. in 2019 the German market for electrified vehicles and ranked second in Europe (2018: 142,385).

The number of BMW plug-in hybrid vehicles delivered was influenced by the 3 Series and X5 model changes as well as by the launch of the X3 in autumn 2019. The total of 86,947 BMW hybrid drive vehicles delivered to customers during the period under report was down on the very high figure achieved one year earlier (2018: 91,759 units; -5.2 %).

Please note: Delivery figures have been adjusted retrospectively going back to 2015. The basis for the adjustments is a review of sales data in prior periods for the BMW Group's most important markets (China, USA, Germany, UK, Italy and Japan). The retrospective adjustment enables better comparability.

In 2019, BMW launched three further models featuring hybrid technology, namely the BMW X1, the X2 and the BMW 3 Series Touring. The MINI Cooper SE, an all-electric model, is available for order since its launch in 2019. The next step is the launch of the BMW iX3 model in 2020, a model with a fully electric drivetrain.

The BMW Group exceeded the previously announced target of having 500,000 electrified vehicles on the road since 2013 by selling around 504,000 units.

We set clear goals for sustainable mobility: A quarter of the vehicles we sell in Europe should be electrified by 2021; a third in 2025 and half in 2030. By 2023, two years earlier than previously intended, we plan to offer at least 25 electrified models, of which more than half will be purely electric.

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

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

(C-TO9.6a/C-TS9.6a) Provide details of your organization's investments in low-carbon R&D for transport-related activities over the last three years.

Activity

Light Duty Vehicles (LDV)

Technology area

Other, please specify
 drivetrain, electrification, services

Stage of development in the reporting year

Large scale commercial deployment

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

61-80%

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

6,419,000,000

Comment

According to CDP low carbon investments contribute to ensure that the global average temperature increase above preindustrial level stays <2°C. In the transition phase efficiency increase in parallel to alternative technologies are needed to achieve this. Our R&D expenditures in 2019 were 6.4 bil € (2018: 6.9 bil €, 2017: 6.1 bil €). Part of it goes into the further development of ED technologies which are standard in our cars. These include efficient engines/gearboxes, optimized aerodynamics, light-weight design, ECO PRO mode, proactive driving assistant or Auto Start Stop function and energy recovery. E.g. 5 series models were launched with 48-volt technology in 2019. The mild hybrid technology with a 48-volt electrical system will be gradually rolled out for our diesel and petrol engines in all series to increase the recovery potential to achieve a CO2 reduction of 5-7%. We develop scalable modular electric construction kits to be able to fit all model series with any type of drivetrain. All our brands will gradually be electrified. Several models will be launched soon, e.g. in 2020 the first fully electric model from the core BMW brand, the X3, followed in 2021 by the iNEXT. In 2023 our portfolio will consist of 25 electrified models (more than half of them fully electrified) and expect a one-third share of BEVs/PHEVs in 2025 in the EU28.

Mobility services enable sustainable mobility patterns as well as connected and automated vehicles. This includes our mobility services (e.g. the car sharing offers SHARE NOW), our connectivity services (e.g. real time traffic information or PARK NOW to find free routes/parking places) and digital networking BMW Connected Services. Those services help to find e.g. the fastest/most efficient routes and simplify the search for a parking place, saving a significant amount of fuel. Sustainable mobility and autonomous driving go hand in hand. We will be launching the next major step in autonomous driving in the iNEXT in 2021. To reach our targets for automated and networked vehicles by 2021, existing alliances e.g. with MobilEye or Intel were deepened. Automated and digitally networked vehicles have the potential to significantly reduce the number of accidents, traffic congestion and reduce emissions. This applies especially when using electrification.

Activity

Light Duty Vehicles (LDV)

Technology area

Electrification

Stage of development in the reporting year

Full/commercial-scale demonstration

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

81-100%

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

Comment

According to CDP low carbon investments contribute to ensure that the global average temperature increase above preindustrial level stays below 2°C. In the transition phase efficiency increase in parallel to alternative technologies are needed to achieve this.

BMW Group invests in various ways in efficiency and new technologies, namely the investment in a new competence centre for battery cells in Munich:

The BMW Group continues to focus on the implementation of its electro-mobility strategy, with the company concentrating all its technological expertise relating to battery cells at a new competence centre. This interdisciplinary competence centre aims to advance battery cell technology and introduce it into production processes. The BMW Group is investing a total of € 200 million in the Competence Centre and employees 200 people here. The centre opened in 2019.

We will be concentrating all our in-house expertise along the battery-cell value chain at our new high-tech competence centre. International experts working in the new development labs and facilities will conduct important research to refine cell chemistry and cell design. We will focus on further improvements in battery performance, lifespan, safety, charging and also costs. By producing battery-cell prototypes, we can analyse and fully understand the cell's value-creation processes. With this build-to-print expertise, we can enable potential suppliers to produce cells to our specifications. The knowledge we gain is very important to us, regardless of whether we produce the battery cells ourselves, or not.

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

 2020-BMW-Group-SVR-2019-Englisch.pdf

 CDP Verification Template_BMW SVR 2019.pdf

 2020-BMW-Group-SVR-2019-Deutsch.pdf

Page/ section reference

Page 140-141 / Sustainable Value Report 2019, Appendix: Independent Practitioner's Limited Assurance Report (assured scope 1 emissions are found on page 70). In addition to the "Independent Practitioner's Limited Assurance Report" we attached the SVR with the independent Practitioner's Limited assurance report in German (p141-142).

In Addition we attached a "CDP Verification Template_BMW SVR 2019" from PWC to be 100% sure that CDP accepts our assurance.

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 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

 2020-BMW-Group-SVR-2019-Englisch.pdf

 CDP Verification Template_BMW SVR 2019.pdf

 2020-BMW-Group-SVR-2019-Deutsch.pdf

Page/ section reference

Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report (assured scope 2 emissions on page 70. Location based Scope 2 emissions in Footnote 5). In addition to the "Independent Practitioner's Limited Assurance Report" we attached the SVR with the independent Practitioner's Limited assurance report in German (p141-142).

In Addition we attached a "CDP Verification Template_BMW SVR 2019" from PWC to be 100% sure that CDP accepts our assurance.

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

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

 2020-BMW-Group-SVR-2019-Englisch.pdf

 CDP Verification Template_BMW SVR 2019.pdf

 2020-BMW-Group-SVR-2019-Deutsch.pdf

Page/ section reference

Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report (assured scope 2 emissions are found on page 70). In addition to the "Independent Practitioner's Limited Assurance Report" we attached the SVR with the independent Practitioner's Limited assurance report in German (p.141-142).
 In Addition we attached a "CDP Verification Template_BMW SVR 2019" from PWC to be 100% sure that CDP accepts our assurance.

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 transportation and distribution

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

 2020-BMW-Group-SVR-2019-Englisch.pdf

 CDP Verification Template_BMW SVR 2019.pdf

 2020-BMW-Group-SVR-2019-Deutsch.pdf

Page/section reference

Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report (assured scope 3 emissions for upstream and distribution are found on page 70.). In addition to the "Independent Practitioner's Limited Assurance Report" we attached the SVR with the independent Practitioner's Limited assurance report in German (p. 141-142).
 In Addition we attached a "CDP Verification Template_BMW SVR 2019" from PWC to be 100% sure that CDP accepts our assurance.

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Business travel

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete


Type of verification or assurance

Limited assurance

Attach the statement

 2020-BMW-Group-SVR-2019-Englisch.pdf

 CDP Verification Template_BMW SVR 2019.pdf

 2020-BMW-Group-SVR-2019-Deutsch.pdf

Page/section reference

Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report (assured scope 3 emissions for business travel are found on page 70.). In addition to the "Independent Practitioner's Limited Assurance Report" we attached the SVR with the independent Practitioner's Limited assurance report in German (p. 141-142).

In Addition we attached a "CDP Verification Template_BMW SVR 2019" from PWC to be 100% sure that CDP accepts our assurance.

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Employee commuting

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

 2020-BMW-Group-SVR-2019-Englisch.pdf

 CDP Verification Template_BMW SVR 2019.pdf

 2020-BMW-Group-SVR-2019-Deutsch.pdf

Page/section reference

Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report (assured scope 3 emissions for employee commuting are found on page 70.). In addition to the "Independent Practitioner's Limited Assurance Report" we attached the SVR with the independent Practitioner's Limited assurance report in German (p. 141-142).

In Addition we attached a " CDP Verification Template_BMW SVR 2019" from PWC to be 100% sure that CDP accepts our assurance.

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Purchased goods and services

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

 2020-BMW-Group-SVR-2019-Englisch.pdf

 CDP Verification Template_BMW SVR 2019.pdf

 2020-BMW-Group-SVR-2019-Deutsch.pdf

Page/section reference

Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report (assured scope 3 emissions for purchased goods and services are found on page 70.). In addition to the "Independent Practitioner's Limited Assurance Report" we attached the SVR with the independent Practitioner's Limited assurance report in German (p. 141-142).

In Addition we attached a "CDP Verification Template_BMW SVR 2019" from PWC to be 100% sure that CDP accepts our assurance.

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: Use of sold products

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

 2020-BMW-Group-SVR-2019-Englisch.pdf

 CDP Verification Template_BMW SVR 2019.pdf

 2020-BMW-Group-SVR-2019-Deutsch.pdf

Page/section reference

Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report (assured scope 3 emissions for the use of sold products are found on page 70.). In addition to the "Independent Practitioner's Limited Assurance Report" we attached the SVR with the independent Practitioner's Limited assurance report in German (p. 141-142).

In Addition we attached a "CDP Verification Template_BMW SVR 2019" from PWC to be 100% sure that CDP accepts our assurance.

Relevant standard

ISAE3000

Proportion of reported emissions verified (%)

100

Scope 3 category

Scope 3: End-of-life treatment of sold products

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 2020-BMW-Group-SVR-2019-Englisch.pdf CDP Verification Template_BMW SVR 2019.pdf 2020-BMW-Group-SVR-2019-Deutsch.pdf**Page/section reference**

Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report (assured scope 3 emissions for the end-of-life treatment of sold products are found on page 70.). In addition to the "Independent Practitioner's Limited Assurance Report" we attached the SVR with the independent Practitioner's Limited assurance report in German (p. 141-142)

In Addition we attached a "CDP Verification Template_BMW SVR 2019" from PWC to be 100% sure that CDP accepts our assurance

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?



 BMW-GB19_en_Finanzbericht.pdf


 2020-BMW-Group-SVR-2019-Englisch.pdf


 CDP Verification Template_BMW SVR 2019.pdf

 2020-BMW-Group-SVR-2019-Deutsch.pdf

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C7. Emissions breakdown	Year on year change in emissions (Scope 1 and 2)	ISAE3000	<p>Please read Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report where it is stated that the whole Sustainable Value Report (SVR) has been verified in limited assurance. This includes all statements as well as all figures. We report e.g. since several years year by year Scope1, 2, 3 emission figures, compare them to previous years as well as with respect to our targets. Assured Scope1 & 2 & 3 from 2015 until 2019 can be found on page 70 of the SVR 2019.</p> <p> 1, 2</p>
C7. Emissions breakdown	Year on year change in emissions (Scope 3)	ISAE3000	<p>Please read Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report where it is stated that the whole Sustainable Value Report (SVR) has been verified in limited assurance. This includes all statements as well as all figures. We report e.g. since several years year by year Scope1, 2, 3 emission figures, compare them to previous years as well as with respect to our targets. Assured Scope1 & 2 & 3 from 2015 until 2019 can be found on page 70 of the SVR 2019.</p> <p> 1, 2</p>
C8. Energy	Energy consumption	ISAE3000	<p>Please read Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report where it is stated that the whole Sustainable Value Report (SVR) has been verified in limited assurance. This includes all statements as well as all figures. We report energy consumption figures from 2015 to 2019 on p. 73 of the SVR2019.</p> <p> 1, 2</p>
C8. Energy	Renewable energy products	ISAE3000	<p>Please read Page 140-141 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report where it is stated that</p>

			<p>the whole Sustainable Value Report (SVR) has been verified in limited assurance. This includes all statements as well as all figures. We report e.g. since several years year by year Scope1, 2, 3 emission figures, compare them to previous years as well as with respect to our targets. Assured Scope1, 2, 3 emission figures from 2015 until 2019 can be found on page 70 of the SVR2019. Our market based emissions are verified and with them all renewable energy products. On SVR2019 on p. 86 we report the Share of green electricity purchased from third parties from 2015 until 2019.</p> <p> 1, 2</p>
C12. Engagement	Other, please specify Supplier engagement	ISAE3000	<p>Please read Page 141-142 / Sustainable Value Report, Appendix: Independent Practitioner's Limited Assurance Report where it is stated that the whole Sustainable Value Report (SVR) has been verified in limited assurance. This includes all statements as well as all figures. We report e.g. from p.88 to p.96 on our supply chain engagement. An overview of our stakeholder engagement can be found from p.20 to p.24.</p> <p> 1, 2</p>

 12020-BMW-Group-SVR-2019-Englisch.pdf

 22020-BMW-Group-SVR-2019-Deutsch.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

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

62

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2019

Period end date

December 31, 2019

Allowances allocated

177,319

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO₂e

396,399

Verified Scope 2 emissions in metric tons CO₂e

0

Details of ownership

Other, please specify

Own facilities operated & own aircrafts

Comment

The above mentioned allowances (177,319) are those allocated in the reporting year 2019. The difference between the verified emissions of 396,399 metric tonnes CO₂e in the reporting year and the allocated allowances in the reporting year are, depending on the country, covered either with allocated allowances from the past years which we have saved due to our CO₂ efficient operations, or with additional purchased allowances. Purchased allowances are needed although we increased energy efficiency since 2006 by 40.4% and reduced in 2019 total CO₂-emissions in production and administration, including BMW Group owned aircrafts and vehicles by 15.7 % when compared to 2018. A major reason for the need to purchase allowances is the use of cogeneration plants (combines heat and power generation) which increase over all CO₂-efficiency (Scope1 plus scope2 efficiency) and at the same time cost efficiency. For almost all of BMW Groups cogeneration plants CO₂ emissions are counted fully within the ETS (verified emissions). However, allowances are only given for heat used.

C11.1d

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

CASE STUDY

1) The strategy of BMW Group for complying with the EU ETS is first and foremost the continuous reduction of CO₂-emissions through our Clean Production strategy. BMW Group is continuously improving CO₂ emission efficiency. For example, our target is a 45% reduction of energy consumption per vehicle produced in comparison with 2006. Between 2006 and 2019 we increased energy efficiency already by 40.4%. We want to be the leading OEM in renewable energy usage in production and the value-added chain.

The BMW Group's aim is to have each production site worldwide being powered by the most ecologically and economically sustainable energy resource available. The USA plant in Spartanburg for example, covers around 50 % of its fuel needs by utilizing gas recovered from a nearby landfill site. Our target is a fully renewable energy supply (Scope 1 & 2) of all our facilities until 2050. In 2019 we made another step in this direction. Total emissions in production and administration, including BMW Group owned aircrafts and vehicles, amounted to 944,833 tons of CO₂ (2018: 1,120,325 tons). This is a further 15.7% reduction in CO₂ emissions (in 2018 we already reduced these CO₂ emissions by 1.4% when compared to 2017). Key measures to increased CO₂-efficiency in 2019 were in particular the increase in energy efficiency and adoption of our energy mix. Energy from renewable sources added in 2019 to about 2,300 GWh.

2) To ensure compliance with the EU ETS all allowances of our European production sites are pooled and handled by a central function "environmental protection and sustainability". As a benefit of our group wide targets for the production network to reduce the key indicator energy consumption per vehicle produced we profit from allowances saved through our performance in previous years. In the 3rd phase of the ETS (since 2013) EUA allocation is reserved merely for heat and will face a reduction from 80% in 2013 to 30% in 2020. The price for EUAs increased already significantly and varied in 2019 around 20€ - 25€ per tonne. We expect the price to further increase significantly in the following years which is also reflected in our business case calculations. The exposure of the BMW Group is minimized due to the advancements in resource and energy efficiency. Use of cogeneration plants cause actually the need to purchase additional allowances but contribute to our overall Scope 1 & Scope 2 CO₂- and cost efficiency and have on a midterm the potential, to reduce Scope 1 CO₂ emissions if the availability of renewable fuels improves on a larger scale in the EU. The BMW Group uses "banking of allowances" for the 3rd Phase of the ETS.

C11.2

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

No

C11.3

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

Yes

C11.3a

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

Objective for implementing an internal carbon price

- Drive energy efficiency
- Drive low-carbon investment
- Identify and seize low-carbon opportunities

GHG Scope

- Scope 1
- Scope 2
- Scope 3

Application

BMW Groups core business is the production and purchase of vehicles. The carbon price is applied Company-wide for all vehicle projects. From the EU fleet regulation until 2020 a price tag for investments in technical measures to reduce CO₂ emissions of our products (abatement costs of CO₂) in terms of opportunity costs can be derived on the basis of penalty cost. Missing the overall target by 1g leads to a price tag of 475 € per tonne and vehicle sold.

We use a bonus / malus system in all vehicle business case (BC) calculations. We defined a g CO₂/km target line. E.g. BEVs have zero g CO₂/km emissions and get a significant bonus which contributes positively to their BC. In contrary the BC of conventional cars above the target line is negatively impacted by a malus. Due to this "internal fee", investments are driven into low carbon products (BEVs, PHEVs) and efficient conventional cars.

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

475

Variance of price(s) used

A single price is used for BMW Groups core business of producing and purchasing vehicles. It is used in the business calculations of all vehicle projects.

Type of internal carbon price

Internal fee

Impact & implication

We use this price tag as "internal fee" to steer our investments into efficient dynamics technologies and low carbon products (BEVs, PHEV). To do so, we use a bonus/malus system in all vehicle business case (BC) calculations. We defined a g CO₂/km target line. E.g. BEVs have zero g CO₂/km emissions and get a significant bonus which contributes positively to their BC. In contrary, the BC of conventional cars above the target line is negatively impacted by a malus.

As a result, Efficient Dynamics technologies are standard in all BMW Group cars. These include e.g. efficient engines/gearboxes, optimized aerodynamics, intelligent energy management, light-weight design, energy recovery, ECO PRO mode, active coasting and proactive driving assistant or Auto Start Stop function. In 2019 we offered plug-in hybrid drivetrains for the 2, 3, 5 and 7 Series, the X1, X2, X3 X5, the MINI Countryman and the MINI Cooper SE as well as the battery electric vehicle BMW i3 and the plug-in

hybrid vehicle BMW i8. In 2019 BMW Group sold 146,160 electrified vehicles worldwide (BEVs: 59,312; PHEVs: 86,947). The internal fee helped to exceed our target for 2019 to have half a million electrified BMWs and MINIs on the roads by selling around 504,000. In 2019 we launched a BEV version of the MINI and in 2020 the BMW iX3 will follow. In 2025 we expect e.g. a one third share of BEVs / PHEVs in the EU28. The fleet averaged CO2 emissions per kilometer worldwide decreased from 141 g CO2/km in 2018 to 140 g CO2/km in 2019. PHEVs and BEVs contributed significantly.

Remark how the price tag is derived: Failing CO2 compliance by 1 g CO2 / km in 2020 (for the EU car fleet the limit is 95 g CO2 / km) the company must pay 95€ per 1 g CO2 / km for each vehicle sold. Using an averaged mileage of 200.000 km over vehicle lifetime, consistent with the Association of the German Automotive Industry (VDA) assumption, 1 g CO2/km corresponds over lifetime to 0.2 tons CO2. Therefore, if marginal costs per vehicle to reduce CO2 fleet emissions by another gram CO2 / km exceed $95 \text{ €} / 0.2 \text{ t} = 475 \text{ €} / \text{t}$ then opportunity costs of paying the fine would be advantageous from an economical perspective. However, paying fines instead of complying with regulations is no option for the BMW Group.

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers

C12.1a

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

Type of engagement

Engagement & incentivization (changing supplier behavior)

Details of engagement

Run an engagement campaign to educate suppliers about climate change

Climate change performance is featured in supplier awards scheme

Other, please specify

Part of the supplier nomination process

% of suppliers by number

33

% total procurement spend (direct and indirect)

88.6

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

23

Rationale for the coverage of your engagement

Rationale for the coverage of our engagement: In the period under review, we initiated the process to identify and assess sustainability risks at 3,921 nominated and potential locations of suppliers and sub-suppliers (2018: 4,168) worldwide. These suppliers were selected from our total number of suppliers of 12,000 because each of them have a significant tendering volume (each >2 Mio. € for BMW production material suppliers and >10 Mio. € for non-production material suppliers), making up approximately 90% of our total procurement spends and having the most impact on climate. The benefit cost ratio to assess the remaining high number of suppliers with the remaining 10% of our procurement spend would be disproportionate.

“% of suppliers by number”: From these numbers we find as “% of suppliers by number” assessed in the reporting year 2019 about 33% of all suppliers (3,921/12,000). This represents about 90% of our procurement spends.

“% Scope 3 emissions as reported in C6.5”: We performed an environmental profit and loss calculation for a car representative for our vehicle fleet (3 series, about 6% of sales). Based on the economic model of multiregional input- output analysis as well as quality-assured data of international environment and resource statistics we analyzed beside other impact categories GWP. Following the corresponding impact pathways until the so called “endpoints” human health, impact on nature and human made environment we derived price tags (external costs). Within the model supply chain impact has been assessed for direct suppliers (Tier 1) as well as for sub suppliers (Tier 2 – Tier n). Our Tier1 suppliers cause roughly 23% of CO2 emissions of the emissions from “Purchased goods and services” and “Upstream transportation and distribution”. The described “Engagement & incentivization” is primarily with our Tier1 suppliers. Therefore “% Scope 3 emissions as reported in C6.5” are about 23%.

Impact of engagement, including measures of success

Impact of engagement: All direct suppliers (production material), about 4,500 in 2019, and indirect suppliers with relevant contract volumes have to fill out a questionnaire. Each potential new supplier must consider our sustainability requirements in their quotation. If they don't fulfil key requirements they will not be nominated. One key contractually fixed demand is to implement a certified Environmental Management System (EMS) in accordance with ISO 14001. Therefore, one impact of engagement is that all production suppliers have implemented a certified EMS before start of production. Energy consumption and CO2 emissions have to be key improvement targets. We are member of the CDP Supply Chain Program. Suppliers who took part made up 78 % of our purchasing volume in 2019 (BMW Groups key suppliers). A competitive comparison of the scoring results is played back during annual supplier development interviews on top management level. Energy, CO2 (and water) efficiency improvements are considered there. In case performance is significantly behind our

expectations we engage to positively impact on suppliers resource efficiency, e.g. by knowledge sharing, and agree on improvement measure. We reach e.g. agreements with key suppliers to increase their share of renewable energy.

Measures of success: We expect and check installation of a certified EMS latest at start of production (SOP) and submission of a corresponding certificate. Therefore, one key performance indicator is: 100% of production material suppliers have an assured EMS latest at start of production. Energy, CO₂ (and water) efficiency trends are assessed and are part of our suppliers rating in our supplier performance and competency management system. This is assessed with respect to our own efficiency improvements (we reduced energy consumption and GHG emission per vehicle produced by 40.4% respectively 71.4 % between 2006 and 2019). Within the CDP supply chain program we measure the CDP rating (the average score of our participating suppliers is C) as well as integration of climate change measures in the strategy, targets set or share of renewable energies. We measure success against our target: 60% of our suppliers participating in the CDP Supply Chain Programme have at least a B rating in the CDP scoring system by 2025.

Comment

C12.1b

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

Type of engagement

Education/information sharing

Details of engagement

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

% of customers by number

100

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

100

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

Rationale for the coverage of our engagement:

“Size of engagement”: Climate change is an integral component of our Strategy Number ONE NEXT and considered as a key issue to be addressed. This is why we inform all of our customers (100%) through various information channels about our efforts /

achievements. Since 2007 BMW Group's Efficient Dynamics (ED) is a comprehensive technologic approach for the consistent reduction of fuel consumption and emissions in the standard configuration of cars of the BMW Group. It includes both highly-efficient automobiles with gradually refined combustion engines and all-electric cars and low-emission plug-in hybrids. ED in different levels of detail is explained on the BMW Group homepage and in main publications such as the annual report and the sustainability report, as well as in communication channels that reach big audiences (e.g. TV spots, marketing campaigns). BMW Group is obliged by many fleet customers to fill out the ECOVADIS questionnaire as a prerequisite for tendering processes or is asked via CDP supply chain to explain its approach to fuel efficiency and zero emission mobility. To our customers we explain efficient dynamics technologies or BEV/PHEV powertrains as well as e.g. connectivity services on the corresponding BMW Group pages where our customers can inform themselves about technical features of the specific vehicle under interest. On launch events, in product campaigns as well as e.g. in product marketing guidelines we address ED features. We include also environmental certificates (e.g. BMW i3/i8, 740 Li/Le iPerformance, 530 iA/530e iPerformance) containing externally audited life cycle comparisons between new models with its predecessors and between plug-in hybrid and combustion engine cars. Furthermore, ED features are included in sales catalogues at the point of sale. Because climate related information is shared via all these channels we assume that 100% of our customers can access these information. This is why we selected 100% in "Size of engagement".

"% Scope 3 emissions as reported in C6.5": In correspondence to the Size of engagement being 100% we also cover 100% of our scope3 emissions from the use phase.

Impact of engagement, including measures of success

Description: The impact of our comprehensive information to customers on our efficiency and e-mobility efforts is a higher demand for these products.

In 2019 we sold 146,160 electrified vehicles worldwide (BEVs: 59,213; PHEVs: 86,947), a 2.7% increase to 2018. We led e.g. in 2019 the market for electrified vehicles in Germany and ranked second in Europe. Average fleet CO₂ emissions per kilometer in 2019 in the core markets (EU28, USA, China, Japan and Korea) were 140 g CO₂/km. PHEV and BEV contributed significantly to this value.

The premium car-sharing services SHARE NOW, part of our joint venture with Daimler AG, had several million customers in 27 cities and 14 countries used with a total of 3,505 electric cars in the fleet. Also, due to the digital parking service PARK NOW, also part of our joint venture with Daimler AG, a number of customers running into the middle double-digit million range in more than 1,346 cities were able to find and pay for parking spaces more quickly and easily.

Measures of success: We measure market success in each market and analyze market shares, e.g. of our BEVs and PHEVs (xEVs). We measure the worldwide number of xEVs or e.g. customers of YOUR NOW, also part of the joint venture with Daimler AG. Sustainability aspects form part of the customer surveys, on products & services as well as on our sustainability performance. We conduct surveys on an annual basis for

product & service optimization according to the needs of our customers. We continuously establish customer satisfaction on the basis of uniform global standards, assessing e.g. if expectations on fuel economy or services (e.g. real time traffic information, searching services for parking place) are met. We measure sustainability performance also by rating results such as DJSI or CDP. We measure fuel economy in all main markets. Financial indicators, in particular the EBIT margin in our core automotive segment, is a measure of meeting customer’s needs.

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
Other, please specify CO2-based vehicle taxations - electromobility incentives	Support with major exceptions	(1) Name of legislation: CO2-based vehicle taxations have been introduced e.g. in 20 out of 28 EU member states as well as for example in South Africa or Singapore and are under discussion in South-Korea or China and other countries as e.g. Thailand. A focus in 2019 was our engagement about WLTP related taxation systems in the EU respectively the 20 member states with CO2 based taxation. (2) Geographies in which legislation applies: EU respectively the 20 member states with CO2 based taxations such as Germany or UK. (3) Type of engagement: The BMW Group is committed to enhance the fuel efficiency of its products and strongly supports	BMW Group strongly supports the introduction of CO2-based vehicle taxation worldwide. In our engagement we do not seek a fundamental debate about the “if” of taxation of automobiles but on alternatives “how” to do it best. We promote putting a “price tag” on CO2 use phase emissions through governments but do not support a tax on engine displacement or retail price of vehicles which does not incentivize highly efficient vehicles with innovative technologies for CO2 emission reduction within the same engine displacement class. This is giving a clear signal to customers to replace an old inefficient vehicle by a new efficient one and to comparing

		<p>the introduction of CO2-based vehicle taxation worldwide putting a price tag on CO2 emissions emitted by vehicles in the use phase but does not support a tax on engine displacement or retail price of vehicles as existent in some European countries. Beside these major exceptions already fixed in the taxation systems, which we continuously discuss, our focus in 2019 was the continuation of incentive schemes related to electro mobility, as the market success of electro mobility enables further CO2 reductions in the transport sector. As the market shares of electrified vehicles are increasing on a year to year basis still absolute sales volumes are at a low level. As a rule, the BMW Group supports promoting the purchase of electric vehicles. The right political framework, such as purchasing incentives and promoting charging infrastructure, has a decisive impact on the market success of electric vehicles. Positive development of electro mobility is happening in countries such as Norway, the UK and the USA, which do have holistic incentive schemes in place. For example, the BMW Group therefore supported the continuation of the German “Umweltbonus” and the introduction of tax benefits for company cars in 2019.</p>	<p>vehicles of one category in terms of efficiency. This is all the more important since experience in major markets like UK, France and Netherlands shows that the effect of changes in taxation is much stronger than a purely economic analysis would indicate. Additionally, we call for purchase and tax incentives for electrified vehicles to positively stimulate customer acceptance for the transition to a low carbon mobility. These incentives address the demand side to overcome the price differences of new technologies in comparison to established internal combustion engine technologies.</p>
<p>Other, please specify CO2 fleet regulation</p>	<p>Support with major exceptions</p>	<p>(1) Name of legislation: We address CO2 fleet regulations in markets such as the European Union (EU28), USA, China or South Korea. A focus in 2019 was</p>	<p>Together with other vehicle manufacturers we reached an agreement with the US state of California which aims to reduce emissions by 3.7 % per year in</p>

	<p>our engagement in the USA on the Greenhouse Gas (GHG) and Fuel Economy (FE) fleet regulation for the time period beyond 2021</p> <p>(2) Geographies in which legislation applies: The mentioned legislations apply to the United States of America.</p> <p>(3) Type of engagement: The regulations contain footprint based CO2 targets for the OEMs and revised regulations had to be developed by the federal agencies EPA (Environmental Protection Agency) for GHG and NHTSA (National Health and Traffic Safety Agency) for FE. In view of the global CO2 fleet targets, the BMW Group pursues the clear objectives of meeting limits and, where we consider it to be appropriate, surpassing these. For example, together with other vehicle manufacturers we reached an agreement with the US state of California which aims to reduce emissions by 3.7 % per year in the period between 2022 to 2026. We are planning to voluntarily align our fleet in all 50 states and apply a uniform standard in accordance with this guideline.</p> <p>We already offer our customers a broad portfolio of models that we are continually expanding. By 2023, we plan to offer 25 electrified models. More than half of them will be purely electric. As one of the market leaders for electro mobility in Europe, we find that the political factors promoting electro mobility have a considerable impact on our sales. In our view, any requirements</p>	<p>the period between 2022 to 2026. We are planning to voluntarily align our fleet in all 50 states and apply a uniform standard in accordance with this guideline.</p> <p>Nevertheless, future target compliance is heavily depending on the market success of electro mobility in the US as in other major markets.</p> <p>Customer acceptance is still at very low levels so we do not anticipate a linear market development for those vehicles. A regulatory approach for improving the e-mobility framework conditions is needed e.g. in the area of customer incentives and subsidies for charging infrastructure at federal and state level.</p>
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		<p>placed on vehicle manufacturers to reduce CO2 emissions need to be accompanied by an ambitious program to increase the demand for electrified vehicles in the market as electro mobility is the key enabler for ambitious CO2 reductions of transport in the passenger car segment. Instead, there are fragmented and largely ineffective national policies in a number of large markets.</p>	
<p>Other, please specify Low carbon mobility</p>	<p>Support</p>	<p>(1) Name of legislation: Development of framework conditions to reach the targets of the German Federal Government's National Dvpmt Plan for Electric Mobility including the target of "a million electric vehicles on the road in Germany by 2020". (2) Geographies in which legislation applies: Germany. (3) Type of engagement: We have contributed to the „National Platform Electromobility“ (NPE) and it's successor the "National Platform Mobility" (NPM), established by the German Government GG, since May 2010. The NPM, a body comprising highly reputed experts from industry, science and civil society, analyses the developments in the field electro mobility and formulates recommendation on how the targets of the "national development plan electro mobility" can be reached. A board member of the BMW Group is co-head of the working group "Framework Conditions". In April 2017 NPE published its roadmap for common standards until 2020, as basis for the further run-up of the</p>	<p>BMW Group holds the position that the goal of having "a million electric vehicles on the road in Germany by 2020" will not be met in time under the current conditions with respect to the funding volume, a delayed start of the funding program, the currently unsatisfactory status of existing public charging infrastructure and the barriers for private charging opportunities in apartment houses. We recommend addressing the areas of high priority in order to increase the market appeal of electric vehicles: a broad market penetration for electric vehicles in the business sector and support for the creation of a convenient and comfortable charging infrastructure. Many measures proposed have been adopted by the German government by early 2015 in the electro mobility law (among them are measures like special labelling, use of bus lanes, privileged parking and specific access to restricted areas) and in the governmental funding program from mid of 2016</p>

	<p>PHEV and BEV market. This roadmap addresses beside others future challenges like high power charging: Vehicles as well as infrastructure should be developed for a charging power between 150 kW up to 400 kW. The GG is continuously assessing various suggestions by the NPM and supporting a broad spectrum of projects. The BMW engagement in these projects addresses the remaining issues required prior to wide-scale market introduction: Increasing the range of vehicles through the installation of public fast-charging infrastructure, realization of High Power Charging, implementation of inductive charging and improving managed charging for the integration of renewable energy. The GG has already implemented several of the key measures proposed by the NPE within the electro mobility law (introduced in June 2015) and the charging pillar regulation following the EU directive 2014/94/EU (introduced in June 2016): Disadvantage compensation for the purchase of electric company cars, a 10-year vehicle tax exemption for electric cars, simplification of taxing monetary benefits from charging, a 300 Mio € funding of public infrastructure, a 600 Mio € direct purchase funding (in addition to the 600 Mio € funding of the industry) that was raised in 2019 by an amount of 1 bill. € for the government and the manufacturers for the years up to 2025 and a 100 Mio € program for public procurement.</p>	<p>(direct purchase incentives, funding of public charging infrastructure and public procurement program). Besides these special rights and funding programs additional legislative measures for removing the barrier to electric mobility in everyday life are proposed especially in the field of building legislation and energy cost regulation. Only if there is a holistic approach for the energy and transport sector a successful integration of electro mobility can be achieved. The speed of implementing the charging infrastructure program and though visibility towards the customer will determine the acceptance of electro mobility at the point of sale.</p>
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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

Association of the German Automotive Industry (VDA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The VDA nationally and internationally promotes the interests of the entire German automotive industry. VDA addresses a wide spectrum, including safety, quality and sustainability issues such as environmental protection in production, fuel efficiency and alternative drive technology as well as e-mobility. VDA promotes corresponding policies to these issues which reflect the opinion of the member companies about most appropriate actions and measures. An example of particular interest is the post 2020 CO2 regulation in the EU. The existing regulation is aligned solely to the technical efficiency of new cars. CO2 values on the street, however, are influenced by many different factors. These include vehicle efficiency, kilometres travelled, driving style or the CO2 content of energy carriers. A convincing and comprehensive political strategy must consider all factors. Further reduction of fleet averaged CO2-emissions is one component not in question by the VDA. However, the 95 g CO2/km target in 2020 is already only achievable with great and increasingly expensive technical efforts and, in particular for premium manufacturers, electrification. The new EU fleet targets set for 2025 and 2030 at the end of 2018 are ambitious for the automotive industry as conventional drive trains need to be replaced to a high degree by electric drive trains. In consequence cars get more expensive what could prevent clients to buy new efficient cars. The previous purely supply-side regulatory methodology must be supplemented with an overall strategy on the demand side. The idea is to reduce CO2 emissions of all road transportation, not just those from new cars. VDA advocates measures to decrease emissions of existing fleets and proposed e.g. as instrument to incentivize decarbonisation of transportation fuels the inclusion into the Emission Trading System ("Cap and Trade"). Due to price transmission this not only effects fuel producers but also incentivizes car owners to drive fuel efficient cars and to change their driving behaviour. Concerning electric mobility VDA advocates to support electric mobility. EU and local regulations should temporarily subsidize electric mobility (e.g. bonuses / tax breaks for the purchase of e-vehicles, elimination of taxes). Charging infrastructure and measures such as special parking rights should be introduced.

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

By the constant membership in the Managing Board & Presiding Board of the association and by the regular participation in all relevant working groups. BMW Group is expressing its position in all activities, thus influencing the overall position on climate change of the VDA.

Trade association

European Automobile Manufacturers Association (ACEA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

ACEA is an advocate for the automobile industry in Europe, representing manufacturers of passenger cars, vans, trucks and buses with production sites in the EU. ACEA aspires to define and advocate the common interests, policies and positions of the European automobile industry. One "industry topic" is "environment and sustainability". In this industry topic issues are addressed ranging from air quality, noise reduction or CSR in the supply chain to CO₂ emissions from cars and alternative drivetrains and e-mobility. The post 2020 CO₂ regulation in the EU is of particular interest. The current legislation is solely focused on vehicle technology. ACEA advocates for a comprehensive approach taking into account the usage of the vehicles in the existing fleet in order to accelerate further CO₂ emissions reduction. Since most CO₂ emissions from the existing fleet come from older cars which do not have the latest technologies ACEA sees fleet renewal incentives as well as incentivizing lower carbon fuels through an upstream ETS (fuel providers) as two effective tools to lowering emissions from the existing fleet. By 2021, the car industry will have reduced CO₂ emissions by almost 42% compared to 2005. Any progress beyond 95 g/km CO₂ relies heavily on growing electrification or hybridisation levels. This may not be possible considering the lack of sufficient support at EU or national levels for electrification.

ACEA supports policy measures (e.g. CO₂ based tax systems or charging infrastructure development) to achieve higher market shares of hybrid and electrically chargeable vehicles. In line with the EU climate package objectives, an overall effort from 2005 to 2030 is required at the level of -30% for non-ETS sectors from the 2005 baseline. With the 95 g/km target the European automobile industry is already overachieving relative to this objective. ACEA argues that the target levels of the new post-2020 will only be achieved by a significant shift to electro mobility which at least depends on the client acceptance level for electric mobility.

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

By the constant membership in the ACEA Board of Directors and by the regular participation in relevant working groups. BMW Group is expressing its position in all activities, thus influencing the overall position on climate change of the ACEA.

Trade association

Auto Alliance

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Alliance of Automobile Manufacturers is the leading advocacy group for the auto industry in North America and represents 77% of all car and light truck sales in the United States. The Auto Alliance promotes constructive solutions to public policy challenges that promote sustainable mobility and benefit society in the areas of environment, energy and motor vehicle safety. "Auto Issues" of particular interest are (1) fuel economy and (2) electric readiness. (1) Fuel economy: The Alliance supports a comprehensive single, national program for fuel economy and greenhouse gas emissions, including consumer support of new, fuel efficient autos, which is critical to automakers meeting the program's demanding targets. (2) Electric readiness: The Alliance promotes efforts to support mass market commercialization of e-vehicles. Long-term efforts to reduce dependency on foreign oil while also reducing transportation sector greenhouse gas emissions will require the mass market commercialization of electric vehicles. That includes technologies such as hybrid electrics, plug-in hybrid electrics, battery electrics, and fuel cell vehicles. Widespread consumer acceptance of these technologies will require that efforts be focused on important considerations such as: supporting infrastructure, incentives for consumer adoption, the alignment of regulatory efforts and the removal of market barriers.

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

By the constant membership in the Board of Directors and in the Executive Committee association and by the participation in relevant working groups. BMW Group is expressing its position in all activities, thus influencing the overall position on climate change of the Auto Alliance.

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) Methods:**

BMW Group enters into dialogue about climate change, in direct dialogues, panel discussions and in initiatives on climate change related topics. Examples in the field of e-mobility and mobility services are:

- 1) Engagement with academia, NGOs or governmental bodies on urban mobility in megacities.
- 2) We are a founding and board member of VELOZ, a Californian nonprofit partnership founded to accelerate the shift to electric cars through public-private collaboration, public engagement and policy education innovation.
- 3) Engagement with city officials, academia and local stakeholders. Collaborative projects for sustainable transformation of urban mobility addressing specific urban pain points: pilot neighbourhoods in Berlin, cross-sector alliances for scaling e-mobility in Hamburg and Munich, strategic scenario projects in Munich for collaborative development of visions and target pictures.

(ii) Topics:

The contents of our dialogue with political NGOs or scientific organizations as well as governmental bodies are national and international legislation in the context of mitigation and adaptation, CO₂-legislation and framework setting, renewables and e-mobility as well as other sustainability topics, new sustainable products, technologies and processes.

- 1) Engagement for urban mobility in megacities addressing challenges and potential solutions – e.g. e-mobility, car-sharing and other mobility services.
- 2) Veloz aims to power the electric car movement with an innovative public message about the fun, emotional and compelling benefits of driving electric. ‘Electric For All’ is California’s first large-scale consumer awareness campaign.
- 3) The two projects “Neue Mobilität Berlin” and „Model City Munich 2030“ strive to accelerate the uptake of sustainable urban mobility systems (integrated mobility systems with car sharing & e-mobility) and the collaborative development of new urban frameworks to enhance the liveability of growing cities.

(iii) Engagement nature:

Stakeholder dialogues on the topic of “Responsibility in Times of Transformation” in Tel Aviv/IL, San Luis Potosí/MX and Seoul/KR. Apart from dialogues and active participation in multi-stakeholder initiatives and conferences, our innovations demonstrate to be viable measures against climate change on a short to long-term: In conducted field trials with EVs or by series introduction of innovative solutions as well as through our CO₂ reduction and efficiency measures in our production sites worldwide. These measures are used in dialogues and stakeholder discussions as exemplary business solutions.

- 1) We hosted dedicated events or participated in large conferences to proactively discuss low carbon mobility (e.g. headline sponsor of the Sustainable Innovation Forum at the COP25 in Madrid in December 2019).
- 2) As founding and board member, we helped to shape the organization’s agenda, recruit new member organizations, provide BMW and MINI products for photo shoots and manage the direction that the organization and the digital campaign are taking.
- 3) BMW Group evaluated car dependencies of urban dwellers in several cities. Within the project “Neue Mobilität Berlin” alternative and integrated mobility supplies in joint citizen workshops have been elaborated. During the campaign „Deine Sommerflotte“ residents leave their cars, test multimodal mobility without car ownership in order to break up routines in day-to-day mobility behavior and unveil barriers for transformation processes.

(iv) Actions advocated:

Actions advocated are diverse, including provision of all our activities on future mobility solutions, e-mobility and e-mobility infrastructure. Another example are the advertisements of our business solutions to be adapted or supported e.g. by regulators or specific cities as well as by the whole transportation sector for upscaling of solutions.

- 1) We advocate for the following measures to increase the market appeal of e-vehicles: a broad market penetration for electric vehicles in the business sector and support for the creation of a convenient charging infrastructure at home, in public and at the workplace. Further actions advocated are specific lanes for electric vehicles and privileged parking.
- 2) To help California's vehicle electrification targets by 2030, the "Electric For All" campaign aims to educate and inspire drivers / riders to go electric advocating that electric cars are affordable for everyone.
- 3) An integrated mobility supply with car sharing and adequate urban framework conditions like dedication of parking space for car sharing & electric vehicles is crucial for a swift and voluntary behavior change as it provides the adopters of e-mobility and sharing an advantage compared to owners of private cars (e.g. no parking space search).

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?

BMW Group's positions regarding global legislative issues arising from our engagement with policy makers at the market level is centrally coordinated in Munich. Positions are worked out with the participation of corresponding central departments, e.g. the department within the Strategy unit responsible for monitoring and further developing CO₂ targets for each product line and each new vehicle project or the Strategy unit responsible for sustainability and environmental Protection, and market representatives, respectively.

Moreover, proposals for the executive body concerning climate relevant issues are aligned between the Vice President of Sustainability, Mobility being under the direct supervision of the chairman of the Board of management and the Vice President for Government and External Affairs before they are presented in the Structure & Strategy Circle, which prepares decisions to be made by the Board of Management. In this way all of our direct and indirect activities that influence policy are consistent with our overall climate change strategy.

The BMW Group actively engages in a proactive dialogue with policy makers on mitigation and adaptation as well as environmental legislative issues using a wide variety of communication channels. We discuss policy issues with various national and international trade organizations, NGOs, scientific institutions etc. Our Representative Offices in Berlin, Brussels, Beijing, London, Washington DC, Sacramento, Tokyo, Delhi, Singapore, Mexico, Seoul, Sao Paulo, Moscow and Thailand are focal points of direct communication with political decision-makers and NGOs. In addition to major markets with a Representative Office, the BMW Group National Sales Companies are active in establishing political contacts and engage in political dialogue in the respective markets in 43 countries. The same applies to Regional Offices serving importer markets and to our manufacturing facilities.

These structures and processes ensure that all engagement activities are in line with BMW Group climate change strategy.

C12.4

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

Publication

In mainstream reports

Status

Complete

Attach the document

 BMW-GB19_en_Finanzbericht.pdf

Page/Section reference

Sustainability: p41-42 (Financial and non-financial reporting, fleet CO2 emissions, resource efficiency, renewable energy in production and the value chain)

Governance: p199ff (Sustainability Board, Supply Chain)

Strategy: p22 (electrification for emissions-free driving), p28-29 (R&D strategy electric vehicles)

Risks&Opportunities: p. 88ff (emission regulation)

Emissions figures: p4, 41-42, 64, 70, 87, 128

Emissions targets: p21

Content elements

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Comment

Publication

In mainstream reports

Status

Complete

Attach the document

 2020-BMW-Group-SVR-2019-Englisch.pdf

Page/Section reference

p37-45: CO2 emissions, strategy, goals, targets and measures

p46-53: Electromobility strategy, goals, measures and due diligence processes

p62-96: Production and Value Creation strategy and KPIs e.g. details on CO2 emissions, energy consumption, renewable energy; supplier engagement

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.

Additional information to C3.1e:**1) CASE STUDY for “Acquisitions”: Influence of climate-related risks and opportunities of our financial planning (a) and the time horizon covered (b)**

a) Climate-related risks and opportunities have influenced our financial planning: Climate change is a driving force for transformation of the automotive industry. Electrification is a priority area in BMW Groups Strategy NUMBER ONE > NEXT, which provides us with a strategic roadmap up to 2025. China is the world's largest market for electro mobility. Following our successful strategy for expansion of the BMW Group's global production network which is production follows the market the BMW Group is in advanced discussions to ramp up the global success of its MINI brand through a new joint venture in China. A key element of the brand's continued strategic development will be local production of future battery-electric MINI vehicles. To this end, the BMW Group signed a 50:50 joint venture agreement with Great Wall Motor in the presence of Chinese Prime Minister Li Keqiang and German Chancellor Angela Merkel in Berlin. Expanding the charging infrastructure is a fundamental condition for the breakthrough of electro mobility. Positive political framework conditions can further support the process. Customers only switch to electric cars if they can rely on an adequate charging infrastructure for everyday driving and enjoy advantages in the form of privileges compared to vehicles with combustion engines.

b) Time horizons covered by the financial planning:

In founding the IONITY joint venture, the BMW Group, Daimler AG, Ford Motor Company and Volkswagen Group, including Audi and Porsche, are setting the course for creating the largest high-performance rapid charging network for electric vehicles in Europe. Construction and operation of around 400 rapid charging stations in total by 2020 are important steps to ensure electro mobility on longer distances, too, and establishing these in the market.

The BMW Group and Great Wall Motor are driving e-mobility forward by building a joint plant (construction phase is planned for 2020 to 2022) in China, where the BMW Group will produce future fully-electric models of its MINI brand. As well as production, the joint venture is also

designed to further advance development and production of MINI electric vehicles until 2030 and beyond.

2) CASE STUDY for “Access to capital”

a) Climate-related risks and opportunities have influenced our financial planning:

Climate change and scarcity of resources are big challenges our society is facing today.

Shaping individual mobility and finding innovative solutions for products and services today for the needs of tomorrow is a key driving force for the BMW Group. Key is product efficiency and electrification.

A major factor in the success of the BMW Group is its consistent focus on the future. We are one of the most profitable OEMs worldwide. Our long term thinking is recognized by capital market. Since many years we are among the leading companies in sustainability ratings (CDP, DJSI). Our sharp focus on the future, combined with solid financials, enables us to have easier access to international capital markets. The BMW Group has a long-term credit rating of “A2” by Moody’s and A by “Standard & Poor’s – which is the best rating for an European OEM and the second best rating of all OEMs worldwide.

b) Time horizons covered by the financial planning:

- We have more than 10 PHEV models (in 2, 3, 5 and 7 Series, X1, X2, X3 and X5, the MINI Countryman & the BMW i8) and are active in 74 markets worldwide. We sold in 2019 146,160 electrified vehicles and led e.g. in 2019 the German market and ranked second in Europe for electrified vehicles and are a key driver of electromobility. A quarter of the vehicles we sell in Europe should be electrified by 2021; a third in 2025 and half in 2030. Until 2023 our portfolio will consist of 25 electrified models, more than half of them pure electric.

- We continuously increase our resource efficiency & minimize CO₂ emissions from our production. Since 2006, the BMW Group reduced its energy consumption per vehicle by 40.4% and its water consumption by 28.8%. CO₂ emissions per vehicle produced were reduced by 71.4% in comparison to 2006. In 2019 all of our European production locations drew their electricity exclusively from renewable sources and our target is to achieve this worldwide until 2020.

3) CASE STUDY for “Assets”

a) Climate-related risks and opportunities have influenced our financial planning: Technical and process related knowledge and Intellectual properties, beside others in the field of future mobility solutions, has been created within a long tradition of innovation. Finding innovative solutions today for the needs of tomorrow is a key driving force for the BMW Group. R&D are therefore of key importance for us as a premium provider. R&D expenditure amounted to € € 6,419 million in 2019 (2018: € 6,890 million), increasing our knowledge in all fields of mobility and low & zero carbon technologies and thus impacting our intangible assets.

b) Time horizons covered by the financial planning:

- The high flexibility of our global production network lays the foundation for our continued growth and is therefore considered as a long term influence. The company currently operates 31 facilities in 15 countries and continue to invest both in our locations in Germany and worldwide. We are preparing our sites for the diversity in powertrain systems to allow us to produce models with efficient combustion engines alongside electric vehicles and plug-in hybrids. Sustainability criteria are part of the criteria for choosing new sites. E.g. in the planning of our new plants in Brazil & Mexico, risks of flooding after hard rain are included and managed accordingly. Depending on the location we define from the beginning mitigation measures to ensure continuous operations. This shows how climate change impacts our fixed assets.

- Our employees are a key asset and this is considered as a long term influence. Our most recent employee survey shows: 90% of our associates say they are proud to work for the BMW Group, more than 80% say they are familiar with our strategy. This shared understanding will give us even greater momentum. The BMW Group's worldwide workforce increased in 2019 to a total of 133,778 employees (2018: 134,682 employees; - ca. 0.67 %). In conjunction with the implementation of the Group's Strategy NUMBER ONE > NEXT, an increasing number of experts in future-oriented fields such as artificial intelligence and autonomous driving, electric mobility, smart production and logistics, data analysis and software development were hired.

4) CASE STUDY for "Liabilities"

a) Climate-related risks and opportunities have influenced our financial planning: Our financial liabilities serve mainly for refinancing our Financial Services segment: The BMW Group is a leading provider of financial services in the automobile sector, operating more than 50 entities and cooperation arrangements with local financial services providers and importers worldwide. The segment's main business is credit financing and the leasing of BMW Group brand cars and motorcycles to retail customers. Customers can also choose from an attractive array of insurance and banking products. Operating under the brand name Alphabet, the BMW Group's international multi-brand fleet business provides financing and comprehensive management services for corporate car fleets in 19 countries. Through Alphera, the BMW Group provides credit financing, leasing and other services to retail customers. The segment also supports the BMW Group's dealership organization, for example by financing dealership vehicle inventories. Our core business of developing, producing and selling vehicles & motorcycles is basically financed out of the cash flow of these two segments. Therefore, we actually see no significant impact from climate change on BMW Group liabilities.

However specific BMW Group activities are eligible for investment loans designed to promote sustainable development, e.g. by the KfW Förderbank which finances investments in the areas of environmental and climate protection or by the European Investment Bank EIB providing finance and expertise for sustainable investment projects that contribute to EU policy objectives. Those loans contribute to our target of having a liability structure, comprising a balanced mix of financing Instruments. Furthermore, those loans come along with favorable conditions. A specific example is the paint shop in BMW Groups new site in San Luis Potosí in Mexico financed by a KfW loan. Within R&D programs are financed by such loans to further develop efficient dynamics technologies as well as electro mobility.

b) Time horizons covered by the financial planning: Since the KfW Förderbank and the EIB are eligible for investment loans among others, the time horizon is considered of long term influence.

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	Oliver Zipse, Chief Executive Officer BMW Group (CEO)	Chief Executive Officer (CEO)