# **Volkswagen AG - Climate Change 2020**

## **C0. Introduction**

## **C0.1**

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

The Volkswagen Group with its headquarters in Wolfsburg is one of the world’s leading automobile manufacturers and the largest carmaker in Europe. The Group aspires to offer attractive, safe and eco-friendly vehicles that set the global benchmark in their respective classes. In 2019, the number of Group vehicles delivered to customers was 10,975 million (2018: 10,834 million). The share of the world passenger car market amounts to 12.1 percent (12.2 percent 2016). Group sales revenue in 2019 totaled € 252,632 million (2018: € 235,849 million), while earnings after tax amounted to € 14,029 million (2018: € 12,153 million).

The Group comprises twelve brands from seven European countries: Volkswagen Passenger Cars, Audi, SEAT, ŠKODA, Bentley, Bugatti, Lamborghini, Porsche, Ducati, Volkswagen Commercial Vehicles, Scania and MAN. The product spectrum ranges from motorcycles to low consumption small cars and luxury vehicles. In the commercial vehicle sector, the products include ranges from pick-ups, buses and heavy trucks.

In addition, the Volkswagen Group offers a wide range of financial services, including dealer and customer financing, vehicle leasing, banking and insurance activities, and fleet management. With MOIA, we have established our own company for new mobility solutions. Furthermore, the new Group subsidiary Elli (“Electric Life”) is now offering a nationwide green electricity tariff. Elli's first product is called Volkswagen Naturstrom®. The Elli company has set itself the goal of digitally connecting the topics of energy and mobility. This is based on the conviction that electric mobility is only truly sustainable if the e-vehicle is operated using energy generated without CO2.

The Group operates 123 production plants worldwide with around 671,200 employees (2018: 664,496 employees). The Volkswagen Group markets its vehicles in 153 countries.

The future program TOGETHER – Strategy 2025, the biggest change process in the history of Volkswagen, was launched in 2016. It aims to make a significant contribution to achieving a reality in which mobility has fewer negative environmental impacts, and to attaining the United Nations’ Sustainable Development Goals (SDGs). Our goal is to become a role model for environmental protection. We believe the transformation of our core business is the right way to meet these objectives. Under the new vision "Shaping mobility - for generations to come." We are providing answers to the challenges of today and tomorrow with our sharpened TOGETHER 2025+ Group Strategy in mid-2019. Our goal is to make mobility sustainable for us and for future generations.

In 2019 The Volkswagen Group has set milestones in all areas to be achieved in the coming years on the road to complete decarbonisation by 2050. Volkswagen is thus fully committed to the Paris climate agreement targets. Our 2025 target is to reduce the CO2 footprint of the vehicle fleet by 30% across the lifecycle compared to 2015. Volkswagen is therefore electrifying the vehicle portfolio, with investment in this area alone amounting to more than €33 billion by 2024. The share of electric vehicles in the Group fleet is to rise to at least 40% by 2030. At the same time, specific CO2 emissions at all plants are to be cut 50% by 2025 compared with 2010. As part of our electrification offensive, we aim to offer our customers world-wide up to 75 completely battery electric vehicles and approximately 60 hybrid models by 2029. By 2030, the Volkswagen Group aims to have electrified its entire model portfolio. As a result, the projected number of vehicles to be built on the Group’s electric platforms in the next decade will increase from 15 million to 22 million. Expanding e-mobility is an important building block on the road to a CO2-neutral balance.

In July 2020 the target validation team of the Science Based Target Initiative (SBTI) has classified our company’s scope 1 and 2 target ambition and has determined that it is in line with a well-below 2°C trajectory.

## **C0.2**

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

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

## **C0.3**

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

Argentina

Austria

Belgium

Bosnia & Herzegovina

Brazil

China

Czechia

Denmark

France

Germany

Hungary

India

Italy

Mexico

Netherlands

Poland

Portugal

Russian Federation

Slovakia

South Africa

Spain

Sweden

Switzerland

Thailand

Turkey

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

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

Light Duty Vehicles (LDV)

Heavy Duty Vehicles (HDV)

## **C1. Governance**

## **C1.1**

### **(C1.1) Is there board-level oversight of climate-related issues within your organization?**

Yes

## **C1.1a**

### **(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.**

|  |  |
| --- | --- |
| **Position of individual(s)** | **Please explain** |
| Chief Executive Officer (CEO) | The Group Board of Management also constitutes the Sustainability Board, which is the highest-ranking sustainability body in the company. The CEO chairs the Group Board of Management and as such is also chairman of the Sustainability Board. The Sustainability Board is informed by the Corporate Sustainability Steering Committee about corporate responsibility and sustainability issues (e.g. dealing with climate change risks and opportunities), as well as by the Group CO2 Steering Committee on issues related to product-level GHG emissions and efficiency at min. twice a year and takes central decisions on the described matters. As chair of the Sustainability Board, as well as the Group Board of Management, the highest-level responsibility for coordinating climate-related decisions lies with the CEO. Example of climate-related decisions: The Group Board of Management, chaired by the CEO, made several important climate-related decisions in the reporting year. This includes the extension of planned investments in low carbon mobility: The Group plans to spend nearly EUR 60 billion on the future areas of hybridization, electric mobility and digitaliszation in the next five years. This amounts to slightly more than 40% of the company’s investments in property, plant and equipment and all research and development costs during the planning period. Compared with the Group’s last so-called Planning Round, it represents an increase of around 10 percentage points. The Group intends to invest around EUR 33 billion of this figure in electric mobility alone. |

## **C1.1b**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Frequency with which climate-related issues are a scheduled agenda item** | **Governance mechanisms into which climate-related issues are integrated** | **Scope of board-level oversight** | **Please explain** |
| Scheduled – all meetings | Reviewing and guiding strategy  Reviewing and guiding major plans of action  Reviewing and guiding risk management policies  Reviewing and guiding annual budgets  Reviewing and guiding business plans  Setting performance objectives  Monitoring implementation and performance of objectives  Overseeing major capital expenditures, acquisitions and divestitures  Monitoring and overseeing progress against goals and targets for addressing climate-related issues | <Not Applicable> | The Group Board of Management is the highest internal decision-making level for environmental matters and also functions as the Group’s Sustainability Board. The Group-wide management of environmental protection is the responsibility of the respective Group Steering Committees. E.g. the steering committee Sustainability, or Environment and Energy. Other committees manage important individual aspects for our products – such as CO2 and exhaust emissions. These include the Group Steering Committee for CO2 and the Group Steering Committee for Fleet Compliance and Exhaust Emissions. The Steering Committees report to the Board of Management about several topics: reviewing the strategy 2025, the decarbonisation program, risk management, business plans, setting and tracking objectives and targets for addressing climate related issues. The members of the steering committees include executives from the corporate management, business areas and representatives of the Group Works Council and the brands. Environmental officers and experts from throughout the Group meet regularly for the Group Environmental Conference in order to optimize the environmental focus along the entire value chain. For Volkswagen, climate related issues have a very high strategic and operational significance, for example regarding regulatory requirements and the respective performance of our products and the ongoing transition process of our Group within the decarbonisation program, TOGETHER Strategy 2025 and 2025+ and the Roadmap E. Therefore, issues with relation to climate change are scheduled for all meetings (with possible exceptions in case of urgent matters). |

## **C1.2**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name of the position(s) and/or committee(s)** | **Reporting line** | **Responsibility** | **Coverage of responsibility** | **Frequency of reporting to the board on climate-related issues** |
| Other C-Suite Officer, please specify (Member of the Group Board of Management responsible for Production – corresponding to “Chief Production Officer”) | <Not Applicable> | Both assessing and managing climate-related risks and opportunities | <Not Applicable> | More frequently than quarterly |
| Environment/ Sustainability manager | <Not Applicable> | Both assessing and managing climate-related risks and opportunities | <Not Applicable> | More frequently than quarterly |

## **C1.2a**

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

I. Description of position within structure:

The Member of the Group Board of Management responsible for production (corresponding to a “Chief Production Officer”, however this terminology is not used at Volkswagen Group level) is

part of the corporate management of Volkswagen Group, as well of the Board of Management which functions as the Sustainability Board. The position is reporting directly to the CEO/Chair

of the Group Board of Management and regularly updates the Group Board of Management on issues of relevance to sustainability, environmental and energy matters.

Director Sustainability and Environmental Affairs: The Director Environmental Affairs is part of the corporate management of Volkswagen Group. The Director Environmental Affairs is

reporting to the Group Board of Management on issues of relevance to environmental and energy matters (via the above-mentioned Board member) in his function as Head of the Group

Environment and Energy Steering Committee. The Director Group Strategy and Sustainability is part of the corporate management of Volkswagen Group. He is reporting to the Group Board

of Management in his function as Head of the Group Sustainability Steering Committee, and regularly updates the Group Board of Management on issues of relevance to sustainability and

environmental matters.

II. Rationale why responsibilities for climate-related issues have been assigned to these positions:

The described positions are in charge of coordinating and steering sustainability, environmental/CO2- activities decided by the Group Board of Management, which also acts as Group

Sustainability Board. The size and diverse structure of Volkswagen Group and the importance of the topic demand for dedicated central Group functions below Board level for coordinating

and steering climate change-related activities throughout the Group’s companies, brands and regions.

III. Specific responsibilities of positions and committees:

The Member of the Group Board of Management responsible for production: The Group Sustainability and the Environment and Energy Steering Committees, which report to the Board member responsible for production and fall under his supervision, include top managers from corporate functions, as well as representatives of the Group Works Council and brands. The tasks surrounding climate change-related issues include defining strategic sustainability goals and position statements, identifying key action areas etc.. The Board member as Head of Group production and environment is responsible for all production and environmental activities, including those related to low-carbon mobility. The Group-wide management of environmental protection is the responsibility of the Board member responsible for production and the Group Environment and Energy Steering Committee, with the support of numerous specialist bodies. Responsibilities include the coordination of our brands and companies regarding the development, implementation and monitoring of environmental policies, targets and metrics, conduct of research on climate change-related topics and fostering internal communication and engagement, e.g. via the regularly held Group Environmental Conferences.

IV. How climate-related issues are monitored by the positions and committees:

The Member of the Group Board of Management responsible for production: Climate related issues are monitored by the position via regular meetings of the Group Sustainability and Environment and Energy Steering Committees and Group CO2 Steering Committee through internal and external stakeholder engagements, as well as continuous exchange (regular meeting, jour fixes etc.) with the heads of the various Group and brand research and development units and other Group functions.

## **C1.3**

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

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

## **C1.3a**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Entitled to incentive** | **Type of incentive** | **Activity inventivized** | **Comment** |
| All employees | Non-monetary reward | Efficiency project | Volkswagen sets great store by enabling its employees to come up with ideas and make suggestions for improving work organization and production processes by means of Idea Management, e.g. CO2-Efficiency. In 2019 Volkswagen employees across our German Volkswagen companies submitted a total of 25.000 suggestions for improvements helping substantially to drive up the quality of our products and the efficiency of our processes, reducing costs in the Group by a total of € 31 million. Bonuses were awarded to staff whose ideas were adopted in acknowledgement of their creativity and involvement in the company. |
| Chief Executive Officer (CEO) | Monetary reward | Emissions reduction target | The Volkswagen Group has signed off a comprehensive decarbonisation program aimed at achieving a fully CO2-neutral balance over life cycle by 2050. The 2025 target is to reduce the CO2 footprint of the vehicle fleet by 30% across the life cycle compared to 2015. We are therefore electrifying the vehicle portfolio, with investment in this area of over €33 billion by 2024. The share of electric vehicles is expected to rise to at least 40% by 2030. Specific CO2 emissions at all plants are to be cut 50% by 2025 over 2010. We align the entire Group at any stage of management with the goals of maximum energy- and resource efficiency along the whole product life cycle. Thus, we will be able to comply with market specific fuel efficiency/emission regulations, e.g. the EU limit for fleet emissions of new cars of 95 g/km CO2 by 2020/21, modified by footprint of car fleet. We make progress towards our goal of ensuring that our production plants are 45% more environmentally compatible by 2025. We pursue these goals at each management level up to the Board chairman (CEO). Within the framework of management by objectives, the relevant objectives are defined depending on subjects and responsibility each year. Target achievement is evaluated the following year. Thus, many precise measurable single goals are generated from one superior strategy, with a personal commitment of the manager. The remuneration system of the Board of Management comprises non-performance-related and performance-related components. The performance-related remuneration consists of an annual bonus with a one-year assessment period and a long-term incentive (LTI) in the form of a performance share plan with a forward-looking 3-year term. The performance share plan is linked to business development in the next 3 years and is thus based on a multiyear, forward-looking assessment that reflects both positive and negative developments. The non-performance-related component creates an incentive for individual members of the Board of Management to perform their duties in the best interests of the Company and to fulfill their obligation to act with proper business prudence without needing to focus on merely short-term performance targets. The performance-related components, dependent among other criteria on the financial performance of the Company, serve to ensure the long-term impact of behavioral incentives. |
| Facilities manager | Monetary reward | Efficiency target | The Volkswagen Group has signed off a comprehensive decarbonisation program aimed at achieving a fully CO2-neutral balance over life cycle by 2050. The 2025 target is to reduce the CO2 footprint of the vehicle fleet by 30% across the life cycle compared to 2015. We are therefore electrifying the vehicle portfolio, with investment in this area of over €33 billion by 2024. The share of electric vehicles is expected to rise to at least 40% by 2030. Specific CO2 emissions at all plants are to be cut 50% by 2025 over 2010. We align the entire Group at any stage of management with the goals of maximum energy- and resource efficiency along the whole product life cycle. Thus, we will be able to comply with market specific fuel efficiency/emission regulations, e.g. the EU limit for fleet emissions of new cars of 95 g/km CO2 by 2020/21, modified by footprint of car fleet. We make progress towards our goal of ensuring that our production plants are 45% more environmentally compatible by 2025. We pursue these goals at each management level up to the Board chairman (CEO). Within the framework of management by objectives, the relevant objectives are defined depending on subjects and responsibility each year. Target achievement is evaluated the following year. Thus, many precise measurable single goals are generated from one superior strategy, with a personal commitment of the manager. The remuneration system of the Board of Management comprises non-performance-related and performance-related components. The performance-related remuneration consists of an annual bonus with a one-year assessment period and a long-term incentive (LTI) in the form of a performance share plan with a forward-looking 3-year term. The performance share plan is linked to business development in the next 3 years and is thus based on a multiyear, forward-looking assessment that reflects both positive and negative developments. The non-performance-related component creates an incentive for individual members of the Board of Management to perform their duties in the best interests of the Company and to fulfill their obligation to act with proper business prudence without needing to focus on merely short-term performance targets. The performance-related components, dependent among other criteria on the financial performance of the Company, serve to ensure the long-term impact of behavioral incentives. |
| Energy manager | Monetary reward | Energy reduction target | The Volkswagen Group has signed off a comprehensive decarbonisation program aimed at achieving a fully CO2-neutral balance over life cycle by 2050. The 2025 target is to reduce the CO2 footprint of the vehicle fleet by 30% across the life cycle compared to 2015. We are therefore electrifying the vehicle portfolio, with investment in this area of over €33 billion by 2024. The share of electric vehicles is expected to rise to at least 40% by 2030. Specific CO2 emissions at all plants are to be cut 50% by 2025 over 2010. We align the entire Group at any stage of management with the goals of maximum energy- and resource efficiency along the whole product life cycle. Thus, we will be able to comply with market specific fuel efficiency/emission regulations, e.g. the EU limit for fleet emissions of new cars of 95 g/km CO2 by 2020/21, modified by footprint of car fleet. We make progress towards our goal of ensuring that our production plants are 45% more environmentally compatible by 2025. We pursue these goals at each management level up to the Board chairman (CEO). Within the framework of management by objectives, the relevant objectives are defined depending on subjects and responsibility each year. Target achievement is evaluated the following year. Thus, many precise measurable single goals are generated from one superior strategy, with a personal commitment of the manager. The remuneration system of the Board of Management comprises non-performance-related and performance-related components. The performance-related remuneration consists of an annual bonus with a one-year assessment period and a long-term incentive (LTI) in the form of a performance share plan with a forward-looking 3-year term. The performance share plan is linked to business development in the next 3 years and is thus based on a multiyear, forward-looking assessment that reflects both positive and negative developments. The non-performance-related component creates an incentive for individual members of the Board of Management to perform their duties in the best interests of the Company and to fulfill their obligation to act with proper business prudence without needing to focus on merely short-term performance targets. The performance-related components, dependent among other criteria on the financial performance of the Company, serve to ensure the long-term impact of behavioral incentives. |
| Energy manager | Monetary reward | Energy reduction project | The Volkswagen Group has signed off a comprehensive decarbonisation program aimed at achieving a fully CO2-neutral balance over life cycle by 2050. The 2025 target is to reduce the CO2 footprint of the vehicle fleet by 30% across the life cycle compared to 2015. We are therefore electrifying the vehicle portfolio, with investment in this area of over €33 billion by 2024. The share of electric vehicles is expected to rise to at least 40% by 2030. Specific CO2 emissions at all plants are to be cut 50% by 2025 over 2010. We align the entire Group at any stage of management with the goals of maximum energy- and resource efficiency along the whole product life cycle. Thus, we will be able to comply with market specific fuel efficiency/emission regulations, e.g. the EU limit for fleet emissions of new cars of 95 g/km CO2 by 2020/21, modified by footprint of car fleet. We make progress towards our goal of ensuring that our production plants are 45% more environmentally compatible by 2025. We pursue these goals at each management level up to the Board chairman (CEO). Within the framework of management by objectives, the relevant objectives are defined depending on subjects and responsibility each year. Target achievement is evaluated the following year. Thus, many precise measurable single goals are generated from one superior strategy, with a personal commitment of the manager. The remuneration system of the Board of Management comprises non-performance-related and performance-related components. The performance-related remuneration consists of an annual bonus with a one-year assessment period and a long-term incentive (LTI) in the form of a performance share plan with a forward-looking 3-year term. The performance share plan is linked to business development in the next 3 years and is thus based on a multiyear, forward-looking assessment that reflects both positive and negative developments. The non-performance-related component creates an incentive for individual members of the Board of Management to perform their duties in the best interests of the Company and to fulfill their obligation to act with proper business prudence without needing to focus on merely short-term performance targets. The performance-related components, dependent among other criteria on the financial performance of the Company, serve to ensure the long-term impact of behavioral incentives. |

## **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 | The time horizon differs from the two risk management processes „regular Governance, Risk & Compliance (GRC) process“ and “Quarterly Risk Process” (German abbreviation RQP). The GRC process is focusing on systemic (inherent) risks and the RQP is focusing on acute and concrete risks and because of that we have two different time horizons. The columns “From” and “To” contain regular GRC-process relevant information. Short-term in the sense of the Quarterly Risk Process (RQP): From 0 up to 1 |
| Medium-term | 2 | 5 | The time horizon differs from the two risk management processes „regular GRC process“ and “Quarterly Risk Process” (RQP). The GRC process is focusing on systemic (inherent) risks and the RQP is focusing on acute and concrete risks and because of that we have two different time horizons. The columns “From” and “To” contains regular GRC-process relevant information; Medium-term in the sense of the Quarterly Risk Process (RQP): From 1 up to 2 |
| Long-term | 5 | 10 | The time horizon differs from the two risk management processes „regular GRC process“ and “Quarterly Risk Process (RQP). The GRC process is focusing on systemic (inherent) risks and the RQP is focusing on acute and concrete risks and because of that we have two different time horizons. The columns “From” and “To” contains regular GRC-process relevant information.; Long-term in the sense of the Quarterly Risk Process (RQP): From 2 up to undetermined |

## **C2.1b**

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

As part of the Regular Governance, Risk & Compliance (GRC) process, each systemic risk inherent to the process or inherent to the business that is reported is recorded and assessed in our RICORS IT system. The risk assessment is made by multiplying the criterion of likelihood of occurrence with the potential extent of the damage. The extent of the damage is calculated from the criteria of financial loss and reputational damage and criminal relevance (Penal). A score between 0 and 10 is assigned to each of these criteria. The measures taken to manage and control risk are taken into account in the risk assessment (net perspective).

The score for a likelihood of occurrence of more than 50% in the analysis period is classified as high; for a medium classification the likelihood of occurrence is at least 25%. For the criterion of financial loss, the score rises with an increasing scale. The criterion of reputational damage can have characteristics ranging from local erosion of confidence and loss of trust at local level to loss of reputation at regional or international level. Criminal relevance is classified based on the influence on the local company, the brand or the Group.

The result is a risk score between 0 and 200 that expresses the risk (score 0-10 for likelihood of occurrence, multiplied by a score 0-20 for extent of damage - financial impact, reputational impact and penal relevance).

Risk reporting to the committees of Volkswagen AG depends on materiality thresholds. Systemic risks from a risk score of 20 and above are regularly presented to the Board of Management and the Audit Committee of the Supervisory Board of Volkswagen AG. For acute risks, the threshold is a risk score of 40, plus any acute risks with potential financial damages of €1 billion or more regardless of the risk score.

These thresholds can serve as a proxy definition of “substantive financial or strategic impact” in the sense of CDP, however these terms are not used in the Volkswagen Group risk management processes.

## **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**

Time horizons and monitoring frequencies differ from the two risk management processes „Regular Governance, Risk & Compliance (GRC)“ and “Quarterly Risk Process (RQP)”. The GRC is focusing on systemic (inherent) risks with a longer time horizon (long-term). To ensure that sustainability risks are considered, the Volkswagen list of risk focus areas comprises the separate risk module “sustainability”, which was updated in 2018 on a very detailed level. The quarterly RQP is focusing on acute or imminent material risks, including sustainability and therefore also climate change related risks. Focus is the current financial year and respectively the next 24 months (short- and medium-term). In case of long-term risk which need urgent decision regarding the countermeasures, also these risks are part of the quarterly process. Identifying We use competitive, environmental analyses and market studies to identify risks & opportunities. In addition to the annual risk identification, a quarterly risk reporting regarding acute or imminent material risks is implemented. For our quarterly risk reporting process, we are identifying potential risks by involving all relevant brands and in detail the central functions of the main brand companies. The most important risks are reported to the Group Board of Management. Company Level: Our regular Governance, Risk & Compliance (GRC) process represents our concept to identify systemic risks (including climate change risks) for the group. Asset Level: The identification and documentation of individual risks takes place within the companies/central departments in scope, based on the centrally provided risk catalogue. If, for example, an entity faces the risk of non-compliance with a CO2 emission law, it will attach the risk to a pre-defined focus area within the risk management process. The persons in charge of documenting risks are asked to provide information on risk drivers and details on qualitative valuation elements, e.g. reputational impact. Assessing We consider risk drivers and immaterial valuation to give us risk indication/assessment at an early stage. Looking at risk drivers from an aggregated view, this could tell us, for example, if natural disasters are considered to have a higher net impact on our business than in previous years. Annually the lists of risk focus areas are revised with the units. This enables Group Risk Management to make amendments for any changes. In total, the list contains 106 risk focus areas, which are assigned to 18 higher-Ievel risk modules that are based around the value chain. Overall, more than 220 risks were recorded for the risk module sustainability. These risks among others build the basis for the annually published internal risk management report. Each systemic risk reported is assessed using the expected likelihood of occurrence and various risk criteria (financial impact, reputational impact and penal relevance) describing the potential impact. All criteria (incl. likelihood) are used to calculate a risk score between 0 and 200 (max.). Responding Countermeasures are decided & introduced immediately, their effects are assessed and the information is incorporated into the planning in a timely manner. The results of the operational risk management process are incorporated into budget planning & financial control on an ongoing basis. Also, the results of risk mitigation measures that have already been taken are incorporated into the monthly forecasts on further business development. This means that the Board of Management also gets an overall picture of the current risk situation via the documented reporting channels, and can prioritize risks & decide on responses on Group level, if required. Opportunities: We use competitive & environmental analyses & market studies to identify not only risks but also opportunities with a positive impact on the design of our products, the efficiency with which they are produced, their success in the market and our cost structure. Where they can be assessed, risks and opportunities that we expect to occur are already reflected in our medium-term planning and our forecast: In regular Group Planning Rounds, Group and brands executives define the strategic steps to prioritize & capitalize on opportunities. Case Study Physical Risk Situation: Weather extremes are occurring more frequently and with a higher severity, due to climate change. Task: Downstream logistics (e.g. regarding vehicles of the Volkswagen brands being delivered to dealerships or final customers) may be affected by weather extremes (e.g. hailstorms, flooding etc.). For instance, hail in July 2013 in Wolfsburg led to a damage of cars and facilities which was followed by delays concerning the outbound logistics. Action: Information about possible transport risks for the Volkswagen brands are included in weekly updates on production volumes. Based on this information, there is a follow-up of the monthly sales target, including obstacles that may cause short-term sales risks. Mid-term obstacles are reported and addressed in a monthly video conference with all key decision makers and risk holders. Result: We are thus able to minimize resulting sales risks and related negative impacts for our customers, like delivery delays, from such events. Case Study Transitional Risk Situation: Volkswagen is facing challenges, but also great opportunities from a regulatory and market trend towards low-carbon mobility. Task: The economic success and competitiveness of the Volkswagen Group depends on how successful we are in promptly tailoring our portfolio of products and services to the changing requirements of our customers. There is a trend towards electric vehicles, moving away from combustion engines. We identified this opportunity and adapted our vehicle portfolio. Action: As a consequence, in 2017, Volkswagen Group’s planning round decided that by the end of 2022, more than EUR 34 billion will be invested the development of electric mobility, autonomous driving, new mobility services and digitalisation. The Planning round also determines Group-wide plant and workforce assignment. We assessed the necessary investment sum for transitioning to producing electric vehicles, including investment in production facilities, R&D and workforce. To adequately respond to the current upheaval of the automotive industry, the Volkswagen Group’s particular focus was then set on training employees on important future technologies and closely supporting them in the transformation process. The Group implemented a comprehensive qualification program for around 3,500 employees for a stable and successful ramp-up of the new electric models at the pilot plant for electric mobility in Zwickau. Result: The production of the ID.3 as the first vehicle based on the new, Modular Electric Drive Toolkit (MEB) began in Zwickau in November 2019. From 2021, up to 330,000 electric vehicles will be built in Zwickau per year.

## **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 | Example: Volkswagen identified current regulation risks related to the compliance with existing fleet emissions and consumption regulations in several markets with high importance for the Volkswagen Group, like the EU (e.g. current EU fleet GHG emissions regulations until 2021) and China, as well as the implementation of updated test procedures and test cycles (e.g. WLTP test cycle). The costs of compliance with regulatory requirements are considerable, and such costs are likely to increase further in the future, given the expected increased scrutiny, regulatory changes or novel interpretations of current regulations and stricter enforcement by international regulators. A violation of applicable regulations could lead to the imposition of penalties, fines, damages, recalls, restrictions on or revocations of Volkswagen's permits and licenses. Rationale: „Current regulation“ is covered through the risk focus area catalogue which is used to identify risks within the regular GRC process. The focus area “Environmental risks arising from operational processes/production” covers among other issues this topic: “Non-compliance with environmental regulations of the law or binding standards”. Product-related regulation is covered in the focus area “Economical risks and/or risks arising from stakeholder requirements”. Being part of the mentioned risk focus area, we consider these risks as potential systemic risks for the group, and we cover these in the regular GRC risk monitoring and updating process, using standardized risk assessment questionnaires. Each systemic risk reported is assessed using the expected likelihood of occurrence and various risk criteria (financial and nonfinancial). In addition, the measures taken to manage and control risks are documented at management level. The identification & documentation of individual risks takes place within the companies central departments in scope, based on the centrally provided risk catalogue. If, for example, an entity of the Volkswagen Group faces the risk of non-compliance with an existing fleet CO2 emissions law, it will attach the risk to a pre-defined focus area within the Volkswagen risk management process. The persons in charge of documenting risks are asked to provide information on risk drivers & details on qualitative valuation elements, e.g. reputational impact. |
| Emerging regulation | Relevant, always included | Example: Key aspects under emerging regulation that Volkswagen identified are the implementation of increasingly stringent fleet greenhouse gas emission and consumption regulations in several markets with high importance for the Volkswagen Group, like the EU (e.g. future EU fleet GHG emissions regulations 2021-2030) and China, taking new test procedures and test cycles (e.g. RDE) into account, as well as compliance with approval processes (homologation), which are becoming increasingly more complex and time-consuming and may vary by country. A violation of applicable regulations could lead to the imposition of penalties, fines, damages, recalls, restrictions on or revocations of Volkswagen's permits and licenses. Rationale: The „emerging of regulations“ is covered through the risk focus area catalogue which is used to identify risks within the regular GRC process. The focus area “Environmental risks arising from operational processes/production” covers among other issues this topic: “Non-compliance with environmental regulations of the law or binding standards”. Product-related regulation is covered in the focus area “Economical risks and/or risks arising from stakeholder requirements”. Being part of the mentioned risk focus area, we consider risks from emerging regulation as potential systemic risks for the group and we cover these in the regular GRC risk monitoring and updating process, using standardized risk assessment questionnaires. Each systemic risk reported is assessed using the expected likelihood of occurrence and various risk criteria (financial and nonfinancial). In addition, the measures taken to manage and control risk are documented at management level. All Group companies and units selected from among the entities in the consolidated Group on the basis of materiality and risk criteria were subject to the regular GRC process in fiscal year 2019. The identification & documentation of individual risks takes place within the companies/ central departments in scope, based on the centrally provided risk catalogue. If, for example, an entity of the Volkswagen Group faces the risk of non-compliance with an emerging CO2 emission law, it will attach the risk to a pre-defined focus area within the Volkswagen risk management process. The persons in charge to document risks are asked to provide information on risk drivers & details on qualitative valuation elements, e.g. reputational impact. |
| Technology | Relevant, always included | Example: A specific example for a climate change-related technology risk is the cost-effective implementation of electrified drivetrains, which is indispensable for meeting our ambitious electrification and decarbonisation targets in the context of climate change: In our risk management, we consider the risk that it may not be possible to develop modules, vehicles or services – especially in relation to e-mobility and digitalisation – within the specified timeframe, to the required quality standards, or in line with cost specifications. As we are using an increasing number of modular components as part of our modular toolkit strategy (e.g. our Modular Electric Drive Toolkit/MEB), it is particularly important when malfunctions do occur to identify the cause and eliminate the malfunctions as quickly as possible. The identification & documentation of individual risks takes place within the companies’ central departments in scope, based on the centrally provided risk catalogue. If, for example, an entity of the Volkswagen Group faces the risk of delayed implementation of technical developments, it will attach the risk to a pre-defined focus area within the Volkswagen risk management process. The persons in charge to document risks are asked to provide information on risk drivers & details on qualitative valuation elements. “Technology” risks with regards to environmental issues are also covered through the risk focus area catalogue. The focus area “Environmental risks arising from operational processes/production” covers this issue. Risks of violations in the product emergence process are covered in the module “development”. Being part of the mentioned risk focus area, we consider these risks as potential systemic risks for the group, and we cover these in the regular GRC risk monitoring and updating process, using standardized risk assessment questionnaires. Each systemic risk reported is assessed using the expected likelihood of occurrence and various risk criteria (financial and nonfinancial). In addition, measures taken to manage & control risk are documented at management level. We use competitive & environmental analyses & market studies to identify risks but also opportunities with a positive impact on the design of our products, the efficiency with which they are produced, their success in the market and our cost structure. |
| Legal | Relevant, always included | Example: Legal risks related to climate change may emerge in connection with the adherence to regulatory requirements. This particularly applies in the case of regulatory vagueness that may be interpreted differently by Volkswagen and the authorities responsible for the respective regulations. This could, for example, apply to regulations around the homologation of new models regarding fuel efficiency standards. At the moment, for example, there is no national or European regulation as to the form in which the WLTP-related CO₂ and consumption data must be declared for cars offered to Volkswagen customers. Rationale: „Penal relevance“ is one of the four criteria to assess a risk into the two risk management processes; so “legal aspects” are covered and assessed for each potential risk. “Legal” risks are covered through the risk focus area catalogue, especially within the module “Legal”. Being part of the mentioned risk focus area, we consider these risks as potential systemic risks for the group, and we cover these in the regular GRC risk monitoring and updating process, using standardized risk assessment questionnaires. Each systemic risk reported is assessed using the expected likelihood of occurrence and various risk criteria (financial and nonfinancial). In addition, the measures taken to manage and control risk are documented at management level. The identification & documentation of individual risks takes place within the companies central departments in scope, based on the centrally provided risk catalogue. If, for example, an entity of the Volkswagen Group faces the risk of litigation regarding interpretations of existing CO2 emission laws, it will attach the risk to a pre-defined focus area within the Volkswagen risk management process. The persons in charge to document risks are asked to provide information on risk drivers & details on qualitative valuation elements, e.g. reputational impact. |
| Market | Relevant, always included | Example: A risk is constituted by the combination of buyer reluctance as a result of the diesel crisis and increases in some vehicle taxes based on CO2 emissions. These already exist in some form in 20 of 28 EU states, in all of which Volkswagen brands hold an important market share.This is driving a shift in demand towards smaller segments and engines in individual markets. We counter the risk that such a shift will negatively impact the Volkswagen Group’s earnings by constantly developing new, fuel-efficient vehicles and alternative drive technologies, based on our drivetrain and fuel strategy. Rationale: “Market” risks with regards to environmental issues are also covered through the risk focus area catalogue. The focus area “Economical risks and/or risks arising from stakeholder requirements” covers these issues. Being part of the mentioned risk focus area, we consider these risks as potential systemic risks for the group, and we cover these in the regular GRC risk monitoring and updating process, using standardized risk assessment questionnaires. Each systemic risk reported is assessed using the expected likelihood of occurrence and various risk criteria (financial and nonfinancial). In addition, the measures taken to manage and control risk are documented at management level. We use competitive and environmental analyses and market studies to identify not only risks but also opportunities with a positive impact on the design of our products, the efficiency with which they are produced, their success in the market and our cost structure. The identification & documentation of individual risks takes place within the companies/ central departments in scope, based on the centrally provided risk catalogue. If, for example, an entity of the Volkswagen Group faces the risk of changing market demands due to climate change or related issues, it will attach the risk to a pre-defined focus area within the Volkswagen risk management process. The persons in charge to document risks are asked to provide information on risk drivers & details on qualitative valuation elements, e.g. reputational impact. |
| Reputation | Relevant, always included | An example for a reputational risk is constituted by recent issues faced by Volkswagen in relation to exhaust emissions, or any future adverse development, which have negatively influenced, or could in the future negatively influence, customers' brand perception (for example, brand image or brand confidence), which may have a negative impact on customers' purchase decisions and may impair Volkswagen's profitability and market share. The absence of self-defined environmental goals (e.g. for reducing the environmental impacts of our production by 45% until 2025 compared to 2010) could lead to reputational disadvantages in the context of our vision to be a role model for the environment, safety and integrity. Rationale: The reputation of the Volkswagen Group and its brands is one of the most important assets and forms the basis for long-term business success. Our policy on issues such as integrity, ethics and sustainability (wherein the environmental/climate impact of our products is a material aspect) is in the public focus. One of the basic principles of running our business is therefore to pay particular attention to compliance with legal requirements (including those related to climate change) and ethical principles. The identification & documentation of individual risks takes place within the companies/ central departments in scope, based on the centrally provided risk catalogue. If, for example, an entity of the Volkswagen Group faces the risk of changing market demands due to climate change or related issues, it will attach the risk to a pre-defined focus area within the Volkswagen risk management process. The persons in charge to document risks are asked to provide information on risk drivers & details on qualitative valuation elements |
| Acute physical | Relevant, always included | Example: Particular events beyond our control such as natural disasters (e.g. storms, flooding) may adversely affect production in any global Volkswagen site to a significant extent. As a consequence, bottlenecks or even outages may occur, thus preventing the planned volume of production from being achieved. Also, downstream logistics (e.g. regarding vehicles of the Volkswagen brands being delivered to dealerships or final customers) may be affected by weather extremes (e.g. hailstorms, flooding etc.). For instance, hail in July 2013 in Wolfsburg lead to a damage of cars and facilities which was followed by delays concerning the outbound logistics). Rationale: “Acute physical” risks with regards to environmental issues are also covered through the risk focus area catalogue. The focus area “Risks of inadequate management of sustainability aspects” covers these issues. Being part of the mentioned risk focus area, we consider these risks as potential systemic risks for the group, and we cover these in the regular GRC risk monitoring and updating process, using standardized risk assessment questionnaires. Each systemic risk reported is assessed using the expected likelihood of occurrence and various risk criteria (financial and nonfinancial). In addition, the measures taken to manage and control risk are documented at management level. We assess vulnerability of our sites to increasing weather extremes through regular environmental risks analyses. The identification & documentation of individual risks takes place within the companies/ central departments in scope, based on the centrally provided risk catalogue. If, for example, an entity of the Volkswagen Group faces the risk of production interruptions because of increased weather extremes, it will attach the risk to a pre-defined focus area within the Volkswagen risk management process. The persons in charge to document risks are asked to provide information on risk drivers & details on qualitative valuation elements, e.g. reputational impact. |
| Chronic physical | Relevant, always included | “Chronic physical” risks with regards to environmental issues are also covered through the risk focus area catalogue. The focus area “Risks of inadequate management of sustainability aspects” covers these issues. Being part of the mentioned risk focus area, we consider these risks as potential systemic risks for the group, and we cover these in the regular GRC risk monitoring and updating process, using standardized risk assessment questionnaires. Each systemic risk reported is assessed using the expected likelihood of occurrence and various risk criteria (financial and nonfinancial). In addition, the measures taken to manage and control risk are documented at management level. An example for a Chronic physical risk is constituted by climate change-induced variances in the availability of water that might affect plant operations at several of Volkswagen’s sites, leading to effects from higher water-related OPEX and CAPEX to temporary reductions of production. Inclusion in RM: We assess vulnerability of our sites to changing climate patterns through regular environmental risks analyses. The identification & documentation of individual risks takes place within the companies/ central departments in scope, based on the centrally provided risk catalogue. If, for example, an entity of the Volkswagen Group faces the risk of production interruptions because of increased weather extremes, it will attach the risk to a pre-defined focus area within the Volkswagen risk management process. The persons in charge to document risks are asked to provide information on risk drivers & details on qualitative valuation elements, e.g. reputational impact. |

## **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?**

Direct operations

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

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

### **Primary potential financial impact**

Increased direct costs

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

<Not Applicable>

### **Company-specific description**

A risk is constituted by the possibility that the CO2 fleet emissions of the Volkswagen Group may exceed the regulatory norms which are very heterogeneous around the world and are getting more and more ambitious. Most of our worldwide car sales are affected by product efficiency regulations and standards. For Volkswagen, key regulation in this area is the EU CO2-regulation on new car fleet emissions, as the European market accounts for over 40% of the Group’s total vehicle deliveries in 2019. On April 17, 2019, the EU adopted new rules for the CO2 regime from 2020 onward. This regulation states that, from 2021 onward, the average emissions from the European passenger car fleet must be no higher than 95 g CO2/km; in 2020, this emissions limit will already apply to 95% of the fleet. The targets will be further tightened as from 2025: for new European passenger car fleets, a reduction of 15% will be required from 2025 and a reduction of 37.5% from 2030. For new light commercial vehicle fleets, the required reductions will be 15% from 2025 and 31% from 2030. In each case, the starting point is the fleet value in 2021. These targets can only be achieved through a high proportion of electric vehicles. Non-fulfillment of the fleet-wide targets will incur excess premiums of €95 per exceeded gram of CO2 per vehicle sold. The fuel consumption regulations in China were continued into the period 2016–2020 with a target of 5.0 liters/100 km. Preparations for legislation up to 2025 have begun. In addition to this legislation on fleet fuel consumption, a so-called “new energy vehicle quota” applies in China. This requires every manufacturer to increase the share of electric vehicles – which are included with different weightings – in its total sales. Due to the extension of greenhouse gas legislation in the USA (the law was signed in 2012), uniform fuel consumption and greenhouse gas standards will continue to apply in all federal states in the period from 2017 to 2025. The regulations might have implications for Volkswagen's R&D process and its distribution strategy. The above-mentioned markets EU27+2, China and USA alone account for well over 80% of the Group’s aggregated passenger car sales of 10.6 million units in 2019. Hence, the compliance with such regulations is indispensable, because not being able to meet regulations would entail high costs resulting from excess emissions premiums payable by Volkswagen.

### **Time horizon**

Medium-term

### **Likelihood**

Unlikely

### **Magnitude of impact**

High

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

Yes, a single figure estimate

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

380000000

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

<Not Applicable>

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

<Not Applicable>

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

In the European Union there are graduated excess premiums payable in case fuel consumption regulation is not met. These excess payments are calculated by multiplying the total number of vehicle registrations by €95 for each gram of CO2 emissions above the manufacturer- specific average fleet emission target. To illustrate the potential financial impact for Volkswagen: A hypothetical exceedance of the limit by as low as 1 gram would imply excess payments of €95 per vehicle. In the case of Group EU-wide sales of 4 million vehicles, this would add up to around 380 million of excess premiums p.a

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

6600000000

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

The Volkswagen Group has set milestones in all areas to be achieved in the coming years on the road to complete decarbonisation by 2050. The 2025 target is to reduce the CO2 footprint of the vehicle fleet by 30% across the life cycle compared to 2015. Volkswagen is therefore electrifying the vehicle portfolio, with investment in this area alone amounting to €33 billion by 2024. The share of electric vehicles in the Group fleet is to rise to at least 40% by 2030. We anticipate that one in four new Volkswagen Group vehicles worldwide will already have a purely electric drive by the year 2025; depending on market development, this could be up to three million electric vehicles a year. By 2030, the Volkswagen Group aims to have electrified its entire model portfolio – from high-volume models to premium vehicles. This will mean offering at least one electric version – battery electric, hybrid or mild hybrid vehicles – of each of our passenger car models across all Group brands. To this end, in addition to the Modular Electric Drive Toolkit (MEB), we are also developing an all-electric platform for our premium and sports brands – the Premium Platform Electric (PPE). Case study (STAR approach): Situation: By 2025 we aim to reduce CO2 emissions in our fleet by 30%. We intend to become climate neutral by 2050, which is why we are working flat out to drive the evolution of the automobile toward electric mobility. Electric driving is the only viable alternative to combustion engines, large numbers of which can be produced at reasonable cost. The share of electric vehicles in the Group fleet is to rise to at least 40% by 2030. Task: As part of our electrification offensive, we aim to offer our customers world-wide up to 75 battery electric vehicles and approximately 60 hybrid models by 2029. Action: With the world premiere of the ID.3 at the IAA 2019, Volkswagen presented the first model in an entirely new generation of all-electric vehicles. The ID.3 is based on Volkswagen’s Modular Electric Drive Toolkit (MEB). Result: Over 37,000 customers have reserved an ID.3 at the end of 2019. Cost of response: This is based on our planned investment for E-Mobility in the phase 2020-2024 of € 33 billion, resulting in an investment of €6.6 billion per annum, on average. This value was stated above.

### **Comment**

The description of the risk factor, and its potential impact on the Volkswagen business, including the estimates of potential financial impact and cost of management, amount to forward-looking statements. Please see further info /disclaimer provided under section C-FI towards the end of the questionnaire.

### **Identifier**

Risk 2

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

Direct operations

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

|  |  |
| --- | --- |
| Chronic physical | Changes in precipitation patterns and extreme variability in weather patterns |

### **Primary potential financial impact**

Decreased revenues due to reduced production capacity

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

<Not Applicable>

### **Company-specific description**

Volkswagen has production facilities in 31 countries, of which some are exposed to varying levels and types of climate related physical risks, such as floods, tropical storms, water scarcity etc., which may cause temporary production downtime/unavailability of facilities. The impact on facilities may be both direct through physical damage and indirect, where large numbers of workers are affected and therefore unavailable. Also, local infrastructure needed to sustain the automotive production process (transportation, energy, water etc.) may be affected. An example is the Volkswagen plant in Puebla/Mexico, which is the largest automobile production facility in Mexico and also one of the largest vehicle plants of the Volkswagen Group, where we produced over 440,000 vehicles in 2019: Due to a depletion of water resources in the area of Puebla, being exposed to water stress, ground water levels were decreasing in the past decades. If not managed properly, Volkswagen might have a problem with its water supply in the future which would lead to a stop of production.

### **Time horizon**

Medium-term

### **Likelihood**

About as likely as not

### **Magnitude of impact**

Medium-high

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

Yes, a single figure estimate

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

130000000

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

<Not Applicable>

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

<Not Applicable>

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

The gross risk profile (without considering actions in place to mitigate the risk) shows a difference between the material and immaterial evaluation. While the potential material damage equals a high impact, the immaterial criteria are rated at a medium level. This is because the resilience against natural catastrophes will not be considered a critical organisation´s ability by investors and customers compared to e.g. compliance with new CO2 regulations. To illustrate the potential magnitude of impact of this risk: The mentioned example of our production plant in Puebla/Mexico is the largest automobile production facility in Mexico and also one of the largest vehicle plants in the Volkswagen Group, where we produced over 440,000 vehicles in 2019. A hypothetical downtime of 1 week would reduce output by approx. 8,800 vehicles, assuming no mitigating measures were taken. Assuming a market value of approx. €15,000 per vehicle, this could be translated into a decrease in revenue by roughly €130 million.

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

233000000

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

Volkswagen has established various central and local actions to mitigate risks caused by natural disasters, including emergency and evacuation plans to protect employees, techniques and facilities. In order to prevent downtime in general, lost output, rejects and reworking, we use the TPM (Total Productive Maintenance) method at our production facilities. We analyzed all production sites using Maplecroft® water stress index and tailored surveys. Consequently, measures to improve situation at risk sites are determined. Case study: Situation: In our plant in Puebla, Mexico, groundwater from "Izta-Popo" surrounding is used as water supply. The Puebla Tlaxcala valley where the company operates is a region where water supply is particularly critical. Analysis found that groundwater replenishment in the valley was highly contingent upon the functionality of the ecosystems on the volcanic slopes. Years of deforestation had led to increased water runoff, and loss of capture and storage in the groundwater table. Task: In this context, securing a reliable water supply was critical to ensure the stability of production for the company, and the availability of water for local communities. Action: To restore the functionality of the ecosystems, it was important to re-plant the deforested slopes between the two volcanoes. The additional water supply would support the company’s long-term operations in the region and help prevent water rationing, rising water prices, and unrest in the local population. Volkswagen is funding reforestation of Alpine conifers, creation of dry wells and dams. Result: As of today, Volkswagen has supported the project with about 2.8 million USD, with joint support by 39 suppliers of VW Mexico, as well as by Puebla's water and sewage services provider. Together, the sponsors will ensure that the forest is protected for years to come. Cost of response: We consider the costs associated with the countermeasures to address this risk to be at a low level compared to other risk focus areas; based on the assumption that Management involvement will in most cases be limited to subject matter experts. In general, operating costs for environmental protection totaled €233 million in the reporting year in Germany alone. We state this figure above to give an estimate of the magnitude of environmental protection costs.

### **Comment**

The description of the risk factor, and its potential impact on the Volkswagen business, including the estimates of potential financial impact and cost of management, amount to forward-looking statements. Please see further info /disclaimer provided under section C-FI towards the end of the questionnaire.

### **Identifier**

Risk 3

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

Downstream

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

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

### **Primary potential financial impact**

Decreased revenues due to reduced demand for products and services

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

<Not Applicable>

### **Company-specific description**

The automotive industry faces a process of transformation with far-reaching changes. Electric drives, connected vehicles and autonomous driving are associated with both opportunities and risks for our sales. In particular, more rapidly evolving customer requirements, swift implementation of legislative initiatives and the market entry of new competitors from outside the industry will require changed products, a faster pace of innovation and adjustments to business models. Risks could be arising from a lack of monitoring and identification of environmental framework requirements and trends as well as insufficient adaptation / failure to comply with customer expectations regarding climate change, energy consumption and CO2 emissions. Specifically: Change of Volkswagen customers’ awareness regarding CO2 emission topics may lead to new expectations that influence the customers’ buying decision. This may especially apply to fleet customers with a rising demand for highly efficient vehicles: Due to their high lifetime mileage, cost of ownership of fleet vehicles is largely influenced by fuel efficiency. One indication for this risk is the increasing number of fleet customers expecting us to provide CO2 data of their fleet via the CDP Supply Chain Program, indicating their high interest in fuel-efficient vehicles. We respond to the questionnaires since 2013. A possible failure to comply with fleet customer expectations may result in a drop of related sales (direct impact), which, given the 2018 market share of Volkswagen Group of around 44% in this customer segment in Germany and 25% in Europe, could significantly affect total sales. Failure to meet these expectations could also affect the company´s reputation (indirect impact); especially in the context of the goal to become a role model for the environment, which the Volkswagen Group set as part of the current Group Strategy Together 2025.

### **Time horizon**

Medium-term

### **Likelihood**

About as likely as not

### **Magnitude of impact**

High

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

Yes, a single figure estimate

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

252000000

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

<Not Applicable>

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

<Not Applicable>

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

Not only regulatory requirements have to be complied with but requirements from relevant stakeholders should also be considered. To demonstrate the effect of changing sales: Based on our 2019 financial year figures (total revenue of €252 billion), a hypothetical decrease of 0.1% in sales would imply a negative effect of approx. €252 million on the Group annual revenue. We have stated this figure above

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

5400000000

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

Volkswagen aims to reduce the CO2 footprint of the vehicle fleet by 30% across the life cycle compared to 2015. Our fuel and drivetrain strategy is paving the way for sustainable, carbon-neutral mobility. The goal is to increase drive system efficiency with each new model generation – irrespective of whether combustion engines, hybrids, plug-in hybrids, pure electric drives, or fuel cell drive systems are used. Our modular matrix platforms are designed so that different drive systems can be deployed in various combinations and flexibly fitted on production lines in manufacturing facilities around the world. Case study: Situation: To enable sustainable, affordable mobility in the future for as many people around the world as possible, we offer a range of drivetrains with a focus on electrification. From today’s perspective, conventional combustion engines look set to continue to make up the major share of drive technology in the coming years. Task: In the interest of using resources responsibly, it is therefore essential to further enhance this engine segment and systematically consolidate it for specific markets. Powertrain measures such as significantly more sophisticated exhaust gas purification or mild hybridization of our vehicles, as well as vehicle measures such as optimized aerodynamics or reduced rolling resistance will be necessary to fulfill future emissions standards. Action: With the new Golf 8 model launched in 2019 we are placing a greater focus on efficient and sustainable mobility in the volume segment. The engine program of the new Golf features petrol, diesel, natural gas (CNG), mild hybrid and plug-in hybrid drives. The Golf’s new petrol mild hybrid drivetrain significantly reduces fuel consumption. With its ability to shut the engine off when coasting and to give an electric boost when the car drives off, it provides attractive functions related to efficiency and driving comfort. Result: Noticeable advantages of the mild hybrid: consumption (and thus fuel cost) savings of around 10% (based on WLTP). The plugin-hybrid drive enables long electrical ranges and temporarily turns the Golf into a zero-emission vehicle. The new Golf thus makes sustainable mobility accessible to a large number of people. Cost of response: This is based on our planned investment for hybridization and digitization in the phase 2020-2024 of €27 billion, resulting in an investment of €5.4 billion per annum, on average. This value was stated above.

### **Comment**

The description of the risk factor and its potential impact on the Volkswagen business, including the estimates of potential financial impact and cost of management, amount to forward-looking statements. Please see further info /disclaimer provided under section C-FI towards the end of the questionnaire.

## **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**

Protecting the climate is currently the greatest global challenge affecting all three sustainability dimensions, and will increasingly shape the markets for Volkswagen’s products via a growing demand for low-carbon mobility options like electric mobility: Changing of Volkswagen customers’ awareness regarding CO2 emission topics may lead to new expectations that influence the customers’ buying decision. In addition, most of our worldwide car sales are affected by product efficiency regulations and standards. For Volkswagen, key regulation in this area is the EU CO2-regulation on new car fleet emissions, as the European market accounts for over 40% of the Group’s total vehicle deliveries in 2019. In this context, electric driving is the only viable alternative to combustion engines, large numbers of which can be produced at reasonable cost. Electric cars offer more utility for customers along with lower running costs and greater driving pleasure. Volkswagen has developed a proprietary platform exclusively for electric driving – the Modular Electric Drive Toolkit (MEB). The Volkswagen brand will bring out its first MEB models (the ID.3 and ID.4) in 2020 as part of its electrification campaign. Last year, the Group brands Porsche and Audi successfully demonstrated with the Taycan and the e-tron that electric mobility is able to excite customers in the premium segment too. Experience gained in markets such as the Netherlands and Norway shows that when the infrastructure and the control system are right, customers will switch to electric cars. Globally, in 2019 Volkswagen sold over 284,000 vehicles equipped with eco-friendly drives (gas, hybrid, all electric), which is still only 2.76% of our total sales, but represents a 59% increase over 2018. This shows the dynamic development of this market segment, which we expect to generate significant additional revenues in the medium term: We expect to build around 22 million vehicles on our Group’s electrification platforms over the next ten years. The electric-powered proportion of our fleet in Europe and China presumably will rise to around 40% by 203

### **Time horizon**

Medium-term

### **Likelihood**

Virtually certain

### **Magnitude of impact**

High

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

Yes, a single figure estimate

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

63000000000

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

<Not Applicable>

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

<Not Applicable>

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

We intend to sell between two and three million Battery-Electric Vehicles (BEVs) per year by 2025 – equivalent to around 20–25% of the Group’s expected annual total unit sales. To give a rough estimate of the order of magnitude, we have entered the equivalent of 25% of our 2019 total revenue (€252 billion \* 0.25 = €63 billion). Actual effects may differ.

### **Cost to realize opportunity**

6600000000

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

Volkswagen Group has launched the most comprehensive electrification initiative in the global automotive industry with its "Roadmap E": Volkswagen is electrifying its entire model portfolio, with full coverage to be reached by 2030 at the latest. This means that, by then, there will be at least one electrified version of each of the 300 or so Group models across all brands and markets. Through 2029, the Group plans to introduce up to 75 all-electric models to the market along with about 60 hybrid vehicles. The number of projected e-vehicles will rise to about 26 million, largely due to the addition of a year to the planning period to include 2029. Volkswagen is also planning to sell nearly 6 million hybrid vehicles by 2029. About 20 million of the e-vehicles planned through 2029 will be based on the Group’s Modular Electric Drive Toolkit (MEB). Most of the remaining 6 million vehicles will be based on the High Performance Platform (PPE). E-vehicles are scheduled to be made outside Germany by the company’s plants in Mlada Boleslav, Chattanooga, Foshan and Anting. Others will be produced by German plants in Zwickau, Emden, Hannover, Zuffenhausen and Dresden. Case study (STAR approach): Situation: By 2025 we aim to reduce CO2 emissions in our fleet by 30%. We intend to become climate neutral by 2050, which is why we are working flat out to drive the evolution of the automobile toward electric mobility. Electric driving is the only viable alternative to combustion engines, large numbers of which can be produced at reasonable cost. The share of electric vehicles in the Group fleet is to rise to at least 40% by 2030. Task: As part of our electrification offensive, we aim to offer our customers world-wide up to 75 completely battery electric vehicles and approximately 60 hybrid models by 2029. Action: With the world premiere of the ID.3 at the IAA 2019, Volkswagen presented the first model in an entirely new generation of all-electric vehicles. The ID.3 is based on Volkswagen’s Modular Electric Drive Toolkit (MEB). Result: Over 37,000 customers have reserved an ID.3 at the end of 2019. Cost of response: This is based on our planned investment for E-Mobility in the phase 2020-2024 of € 33 billion, resulting in an investment of €6.6 billion per annum, on average. This value was stated above.

### **Comment**

### **Identifier**

Opp2

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

Direct operations

### **Opportunity type**

Products and services

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

Ability to diversify business activities

### **Primary potential financial impact**

Increased revenues resulting from increased demand for products and services

### **Company-specific description**

One objective of our Group future program TOGETHER Strategy 2025 is to make mobility sustainable for us and future generations. We aim to achieve this goal through electric drive, digital networking and autonomous driving, to make the automobile clean, quiet, intelligent and safe. Our potential for direct action for carbon-neutral mobility resides in emission-free production, including the upstream supply chain, and vehicles that do not create emissions in use. But also indirectly, we can have an influence by creating offerings for the use of green electricity for battery charging and a green, efficient charging infrastructure, and by offering comprehensive mobility concepts to minimize the environmental impact of mobility. This perspective offers an opportunity for us to diversify activities. For example, Volkswagen has been offering a green electricity tariff (100% percent CO2-free electricity (Volkswagen Naturstrom®) from renewable sources) through its subsidiary Elli since January 2019 - even independently of the purchase of an electric car. With the market launch of the ID.3, Elli is gradually establishing a portfolio of smart charging solutions by the start of 2020 that extends from hardware through billing and additional digital services to complete consulting packages. These include wall boxes, charging stations, IT-based energy management systems and customer cards for charging out and about. This means Elli is tapping a completely new field of business for the Group, in which the energy and car focus areas grow closer together via electric mobility. Our aim is to make Elli the first provider on the market to offer drivers and fleet managers of electric vehicles a seamless and holistic charging and energy experience. We are also systematically integrating electric mobility into forward looking mobility concepts in urban areas that offer our customers connected and environmentally friendly services irrespective of whether they own their own vehicle. These include, for example, our brand MOIA in the field of ride sharing or WeShare in the carsharing segment. The vehicle fleet will be fully electric in both cases.

### **Time horizon**

Long-term

### **Likelihood**

Virtually certain

### **Magnitude of impact**

High

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

No, we do not have this figure

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

<Not Applicable>

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

<Not Applicable>

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

<Not Applicable>

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

In the long term, Volkswagen aims to generate new earnings in the mobility services business.

### **Cost to realize opportunity**

250000000

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

One building block of our Strategy TOGETHER 2025 is the establishment of a cross-brand e-mobility solutions business: Electric mobility is only truly sustainable when the electric vehicle is used with CO2-free energy when driven. Through the subsidiary Elli (Electric Life), the Group offers 100% CO2-free Volkswagen Naturstrom electricity to private households and companies with or without electric vehicles in Germany. It is generated by wind, solar and hydroelectric power plants in Germany, Austria and Switzerland. With the market launch of the ID.3, Elli is gradually establishing a portfolio of smart charging solutions by the start of 2020 that extends from hardware through billing and additional digital services to complete consulting packages. These include wall boxes, charging stations, IT-based energy management systems and customer cards for charging out and about. This means Elli is tapping a completely new field of business for the Group, in which the energy and car focus areas grow closer together via electric mobility. Our aim is to make Elli the first provider on the market to offer drivers and fleet managers of electric vehicles a seamless and holistic charging and energy experience. Case Study (STAR approach): Situation: Electric mobility is only truly sustainable when the electric vehicle is used with CO2-free energy when driven Task: One building block of our Strategy TOGETHER 2025 is the establishment of a cross-brand e-mobility solutions business Action: Through the subsidiary Elli (Electric Life), from 2019 the Group offers 100% CO2-free Volkswagen Naturstrom electricity to private households and companies with or without electric vehicles in Germany. It is generated by wind, solar and hydroelectric power plants in Germany, Austria and Switzerland. Result: Shortly after its launch, the number of customers was already in the five-digit range and continues to grow. The company expects a further upward trend in 2020. With the launch of the ID.3, more customers will also opt for the suitable green energy tariff. Cost of strategy: In order to further strengthen electric mobility, the Volkswagen brand aims to install around 4,000 charging points at its German sites by 2025. The Group is investing around €250 million across the Group in the expansion of charging infrastructure at its European sites. Together with the activities of dealers, around 36,000 new charging points are to be created in Europe.

### **Comment**

### **Identifier**

Opp3

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

Direct operations

### **Opportunity type**

Resilience

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

Participation in renewable energy programs and adoption of energy-efficiency measures

### **Primary potential financial impact**

Other, please specify (Reduced operating costs)

### **Company-specific description**

Our Group has a long tradition of commitment to environmental protection. It is firmly embedded in our TOGETHER – Strategy 2025+ as one of our four corporate objectives. As one of the world’s leading providers of sustainable mobility, we also want to become an Environmental Role Model. We are working toward this long-term goal by taking responsibility for the environment. Specific: Besides wider social benefits, which are difficult to quantify, our sustainability efforts can also lead to reduced operational costs, e.g. in the case of energy efficiency and emission reduction activities. Reduction of the direct energy consumption per vehicle produced (which was at 2.010 kWh/vehicle in 2019), as opposed to approx. 2.500 kWh in 2010 across all of Volkswagen’s brands and factories and including electricity, heat and fuel consumption) directly correspond to cost savings for Volkswagen.

### **Time horizon**

Short-term

### **Likelihood**

Very likely

### **Magnitude of impact**

Medium

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

Yes, a single figure estimate

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

37000000

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

<Not Applicable>

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

<Not Applicable>

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

In 2019, The Volkswagen Group has implemented over 1200 documented measures and activities that save more than 100 kt CO2e per year in its production facilities, and will lead to direct annual cost savings of over €37 million. This figure has been derived from the measures tracked in our “Massnahmen@WEB” online tool, and refers to total cost savings (through reduced energy consumption as well as due to lower maintenance efforts). We entered this figure above.

### **Cost to realize opportunity**

78000000

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

The reduction in environmental impacts across the Group is the result of specific environmental programs by the brands, including: ZeroImpactFactory – Volkswagen Passenger Cars and Volkswagen Commercial Vehicles; ultra-strategy – Audi; Green Factory – ŠKODA; ECOMOTIVE Factory – SEAT; Environmental Factory – Bentley; Resource-efficient Production – Porsche; Blue Rating – Scania; Climate Strategy – MAN. We encourage close integration and communication between the Report brands worldwide in order to create synergies, for example with our Environment Task Force. A Group-wide decarbonisation program was launched in 2019 to reduce CO2 emissions throughout the entire life cycle of products and services. The program covers the setting of CO2 targets to be met by 2025, Group-wide CO2 measures (e.g. the decarbonisation index (DCI)) and tools, and control elements. With our zero impact factory initiative, as part of our “goTOzero” environmental mission statement, we will take decisive steps in the future towards automotive manufacturing with zero impact on the environment. As well as resource efficiency and a circular economy, in particular climate protection with a carbon-neutral energy supply is at the top of the agenda. Case study: Task: For the production of the ID.3, the Volkswagen plant in Zwickau is currently being converted into one of the first, largest, most efficient and most environmentally friendly e-plants in Europe. Action: In particular, the focus is on the reduction of CO2 emissions, for example through purchasing green energy. The energy for the production of the ID.3, which started at the site in 2019, is covered exclusively by our own highly efficient cogeneration via combined heat and power plants and Volkswagen Naturstrom®. CO2 emissions have been reduced by 90,000 tons per year solely through the use of green energy. Efficiency measures in production include, for example, optimized thermal afterburning in the paint line, frequency-controlled fans and the use of energy-efficient air compressors. Result: This by itself reduces CO2 emissions by nearly 90,000 tons per year. Cost to realize: In 2019, we invested more than €78 million in documented emission reduction activities across our global operations. We have entered this figure above.

### **Comment**

### **Identifier**

Opp4

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

Upstream

### **Opportunity type**

Energy source

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

Use of lower-emission sources of energy

### **Primary potential financial impact**

Other, please specify (Reduced exposure to GHG emissions and therefore less sensitivity to changes in cost of carbon)

### **Company-specific description**

Compared to vehicles with an internal combustion engine, e-vehicles have less of an impact on the environment, as they produce no local emissions during use. Our calculations based on Golf-class vehicles show that the CO2 balance of e-vehicles is better over the entire life cycle too. Nevertheless, e-mobility also leads to greenhouse gas emissions – both as a result of electricity use and during production. Overall, the majority of emissions will shift towards production in the future, primarily as a result of battery manufacture. What is crucial is that Volkswagen not only builds electric cars, but also monitors the complete life cycle from raw materials to recycling. For the electric car is only as clean and green as the electricity used to build and charge it. Cell production, in particular, is still very energy-intensive, and charging cars with coal-derived power is a burden to the overall environmental equilibrium. In order to tailor electric cars sustainably towards climate protection, it is precisely these areas that have to be addressed. The strategic goal of Volkswagen of becoming the leading worldwide provider of e-mobility can make the focus on consistent decarbonisation a strong competitive edge: Besides reputational benefits which we can use to further build our brands, we also reduce the exposure to greenhouse gas emissions along the entire value chain. In the likely case of increasing external costs of greenhouse gas emissions, like carbon taxation, this leads to competitive cost advantages for Volkswagen and/or our value chain partners - from suppliers to end customers. In case of our own planned battery cell production, Volkswagen would directly benefit from a strategically planned supply with renewable energy in the case of rising costs on carbon. But also in the case of external cell suppliers, it could be expected that sensitivity to higher external carbon pricing is reduced if suppliers are bound to rely exclusively on renewable energies, thus presenting indirect benefits for Volkswagen regarding lower volatility of cell prices. Our Life Cycle Assessments show that improvements in lithium-ion battery technology and supply chain optimizations lower the carbon footprint during battery manufacturing for the first Volkswagen ID. model planned for 2020 by more than 25% per kilowatt hour (kWh) of battery capacity compared with the e-Golf. When using regenerative energy, the reduction potential is almost 50%.

### **Time horizon**

Short-term

### **Likelihood**

Virtually certain

### **Magnitude of impact**

Medium

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

Yes, a single figure estimate

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

7300000

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

<Not Applicable>

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

<Not Applicable>

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

The Group’s upstream Scope 3 emissions from Purchased Goods and Services alone amount to over 73 million t CO2e in 2019. A hypothetical global price on GHG emissions of as little as €10 / ton would thus imply a burden of over €730 million p.a. on our supply chain. In such a scenario, if we are able to reduce these upstream emissions by as little as 1% per year, economic advantages of € 7.3 million p.a. would occur (in comparison to emissions from Purchased Goods and Services remaining unchanged).

### **Cost to realize opportunity**

1000000000000

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

The Group has set milestones in all areas to be achieved in the coming years on the road to complete decarbonisation by 2050. We use the decarbonisation index (DCI) as a strategic indicator in this context to document our progress. It measures products’ CO2 emissions along the entire value chain – from extraction of raw materials through the use phase to the recycling of end-of-life vehicles (Scope 3). The 2025 target is to reduce the CO2 footprint of the vehicle fleet by 30% across the lifecycle compared to 2015. Our potential for direct action for carbon-neutral mobility resides in emission-free production, including the supply chain. Our program’s first measures were already taken in 2019. These include compulsory use of renewable energy sources in the manufacture of batteries by suppliers. Case study: Situation: Following suit with our ambitious decarbonisation targets, the battery-electric ID.3 is the Group's first model to be produced (starting 2019) in a balance sheet that is CO2-neutral. Task: The CO2 emissions in manufacturing an electric vehicle are – from raw material extraction to handover to the customer – roughly twice as high as with a vehicle with a combustion engine. This is because of the difficulty of raw material extraction and energy-intensive processes in manufacturing batteries (In particular, drying the raw materials, which are applied to a carrier film in liquid form) Action: All Volkswagen battery suppliers are contractually obliged to use certified green electricity in their production. Suppliers must provide proof of this before the award of the contract. Result: CO2 emissions in battery manufacturing are thus falling significantly. The first ID. model (entering the market in 2020) will already emit around 50% less CO2 per kWh of battery capacity than the current e-Golf – as a result of improved battery technologies and manufacture of the battery with green electricity. Cost to realize: Within the Group’s battery strategy, over one billion euros is to be invested in the Volkswagen Group’s battery cell activities by 2023/24: In a first step, Volkswagen is investing over €100 million in amassing its own development and production know-how. In addition, Volkswagen is investing a further approx. €900 million in joint battery activities with the Swedish battery producer Northvolt. Construction of a 16 gigawatt hour battery cell factory in Salzgitter is to start in 2020. It is planned to commence production in late 2023/early 2024

### **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** |
| 2DS  Other, please specify (IEA B2D S) | How scenarios were identified/adapted: Volkswagen is a stakeholder in the IEA Mobility Model (MoMo) working group, has contributed to the development of the model, and is using model data and assumptions in various contexts. MoMo uses the various IEA ETP scenarios, including the 2DS as a Below-2°C pathway, and B2DS as Well-Below-2°C scenario. Scenario prognoses on regional level from the MoMo model were matched with existing regional/market-specific Volkswagen data and forecasts regarding production output, energy consumption and vehicle lifecycle data, to develop a Volkswagen-specific model, taking into account specific regional characteristics of production, sales, and vehicle operation. We used interpolation and pro-rating methods to match different data aggregation levels and temporal resolutions. A sensitivity analysis was conducted to identify decisive factors. Time horizons: We have conducted analyses up to 2050, as this was the maximum timeframe covered by the model at the time. We then focused on 2025, the time horizon of our Group Strategy TOGETHER 2025+ and also the target year of several internal KPIs. Areas of organization: Scenario analysis focused on 1. Production: energy consumption, prognosed grid energy mix, related GHG emissions; 2. Sales/technology: Prognosed sales development and drivetrain shares of passenger vehicles 3. Impact of products: Prognosed WTW GHG emissions of new cars; 4. Materials procurement: Amount of procured materials, related upstream GHG emissions. (This analysis is partially based on the Mobility Model data developed by the International Energy Agency, 2016-2018, all rights reserved, but the resulting analysis has been prepared by Volkswagen AG and does not necessarily reflect the views of the IEA). Summary of results: Regarding production-related emissions, analysis showed that a significant decrease of emission intensity per car is necessary to be compliant with the UN climate target, especially in context of increasing sales. Regarding development of the vehicle sector, analysis showed that electrification will gain significant importance, but combustion engines retain a considerable market share over the next decade even under a 2°C scenario. How results influenced our strategy: Regarding production-related emissions, the scenario analysis informed the development of a Group-wide Science Based Target in 2019. We used scenario results for external drivers to assess ambition for a 2°C and well-below-2°C target option for Scope 1+2. The market and product related findings support and confirm our strategic decision taken with the Group Strategy 2025+ to massively invest both in electric mobility (as specified in our Roadmap E) as well as in efficiency improvements of the combustion drivetrain. In July 2020 the SBTI validated our scope 1 and 2 target to be in line with a well-below 2°C trajectory. Case study: Situation: Volkswagen has committed to reduce Scope 1+2 emissions in line with a “well below 2°C” scenario. Task: To achieve the decrease in production-related GHG emissions , important Scope 1 and Scope 2 emission sources need to be addressed. Action: We are systematically switching in-house power generating plants to gas. The power supply for the production in Wolfsburg is, for example, currently switched by 2022 to highly efficient combined cycle gas turbine (CCGT) plants; for this we will invest €400 million. In addition, external power supply of Volkswagen brand’s 16 worldwide plants has already been switched to 70% renewable electricity and we continue to increase this figure in the near future. Result: The modernization measures and the move away from hard coal will cut annual CO2 emissions by 1.5 million tons. This corresponds to a reduction of close to 60% at the Wolfsburg site or, to make the figure more tangible, the combined annual CO2 emissions of 870,000 cars. For the entire Group, this translates into a global CO2 reduction of 15%. |

## **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 | The Volkswagen Group has set milestones in all areas to be achieved in the coming years on the road to complete decarbonisation by 2050. The 2025 target is to reduce the CO2 footprint of the vehicle fleet by 30% across the life cycle compared to 2015. Volkswagen is therefore electrifying the vehicle portfolio, with investment in this area alone amounting to €33 billion by 2024. The share of electric vehicles in the Group fleet is to rise to at least 40% by 2030. Focusing our fleet on the electric vehicle is the best and most efficient option for less CO2 in road traffic for the foreseeable future. Around 75 new e-models are planned to come onto the market in the next ten years. Audi has already introduced the e-tron, and Porsche the Taycan. Mass production of the Volkswagen ID.3, the world’s first electric vehicle with a carbon-neutral footprint, has started in Zwickau. Only through high investments in e-mobility are we able to deliver according to our ambitious goals and were we able to introduce the first e vehicles in 2019. Case study of substantial strategic decision: Situation: By 2025 we aim to reduce CO2 emissions in our fleet by 30%. We intend to become climate neutral by 2050, which is why we are working flat out to drive the evolution of the automobile toward electric mobility. Electric driving is the only viable alternative to combustion engines, large numbers of which can be produced at reasonable cost. The share of electric vehicles in the Group fleet is to rise to at least 40% by 2030. Task: As part of our electrification offensive, we aim to offer our customers world-wide up to 75 completely battery electric vehicles and approximately 60 hybrid models by 2029. Action: With the world premiere of the ID.3 at the IAA 2019, Volkswagen presented the first model in an entirely new generation of all-electric vehicles. The ID.3 is based on Volkswagen’s Modular Electric Drive Toolkit (MEB). Result: Over 37,000 customers have reserved an ID.3 at the end of 2019. |
| Supply chain and/or value chain | Yes | As a consequence of the climate-related risk and opportunity analysis, we aim at achieving a fully CO2-neutral balance in all areas from fleet to production to administration by 2050. We do this by continuously improving our carbon footprint and continuously reducing resource consumption. In this context and with regards to our supply chain/value chain strategy, we define the decarbonisation index (DCI) as a strategic indicator which we use to measure progress. It measures products’ CO₂ emissions along the entire value chain – from extraction of raw materials through use phase to recycling of end-of-life vehicles (Scope 3). The DCI thus makes it possible to pursue milestones in a transparent, holistic way toward climate-friendly mobility. The 2025 target is to reduce the CO2 footprint of the vehicle fleet by 30% across the lifecycle compared to 2015. We extend the responsibility for environmental effects of our vehicles to our suppliers throughout the value chain. We believe that we and our partners in the supply chain have a particular responsibility here. We thus require that our suppliers use electricity from renewable sources when manufacturing high-voltage batteries (and other parts of the Modular Electric Toolkit). We have also been actively involved in the CDP Supply Chain Program (SCP) since 2015. Case study substantial strategic decision: Situation: Following suit with our ambitious decarbonisation targets, the battery-electric ID.3 is the Group's first model produced (starting 2019) in a balance sheet that is CO2-neutral. Task: The CO2 emissions in manufacturing an electric vehicle are – from raw material extraction to handover to the customer – roughly twice as high as with a vehicle with a combustion engine. This is because of the difficulty of raw material extraction and the energy-intensive processes in manufacturing batteries. Action: All Volkswagen battery suppliers are contractually obliged to use certified green electricity in their production. Suppliers must provide proof of this before the award of the contract. Result: CO2 emissions in battery manufacturing are thus falling significantly. The first ID. Model (entering the market in 2020) already emits around 50% less CO2 per kWh of battery capacity than the current e-Golf – as a result of improved battery technologies and the manufacture of the battery with green electricity. |
| Investment in R&D | Yes | The Volkswagen Group is committed to making its vehicle fleet completely carbon neutral by 2050. Forward-looking mobility solutions with brand-defining products and services would be unthinkable without innovations. This makes our research and development work essential for reaching this objective and sustainably increasing the value of the company. Together with our Group brands, we have launched measures based on our future program TOGETHER 2025+ to link development activities across the Group. At the heart of this is an efficient, cross-brand development alliance characterized by a close network of our experts, collaboration on an equal footing, an innovative working environment and the pooling of development activities. The aim is to make use of synergy effects across the Group and act as a role model for environment, safety and integrity. The development alliance is playing a major part in driving the Group’s transformation and helping to make the company fit for the future. Case study substantial strategic decision: Situation: By 2025 we aim to reduce CO2 emissions in our fleet by 30%. We intend to become climate neutral by 2050, which is why we are working flat out to drive the evolution of the automobile toward electric mobility. Task: The share of electric vehicles in the Group fleet is to rise to at least 40% by 2030 We anticipate that one in four new Volkswagen Group vehicles worldwide will already have a purely electric drive As part of our electrification offensive, we aim to offer our customers world-wide up to 75 completely battery electric vehicles and approx. 60 hybrid models by 2029. Action: With the Modular Electric Drive Toolkit, or MEB, the Group brands have a joint electric-vehicle platform for the very first time – and lay the foundation for electric-vehicle production in the volume segment. MEB is consistently aimed at meeting the requirements of e-mobility. Design, axles, drivetrains, wheelbases and weight ratios are designed and planned to ensure that a vehicle is optimally equipped for electric operation. Result: The first MEB-based model is the compact Volkswagen ID.3: The base version will not cost more than a comparably equipped combustion-engine vehicle with DSG transmission. Series production started at the end of 2019. By 2022, the four Group brands Volkswagen, Audi, SEAT and ŠKODA plan to be producing 27 MEB models. |
| Operations | Yes | One element of our production strategy is the environmentally exemplary production initiative. This involves us working on four key issues in the period leading up to 2025: Setting and achieving ambitious environmental targets for production, Developing a long-term vision for environmental targets in production and rolling it out across the Group, strengthening employees’ environmental awareness and integrating relevant environmental aspects into processes, achieving top positions in renowned environmental rankings. In this context, the Volkswagen Group has set itself the goal of reducing the five key environmental indicators of energy and water consumption, waste for disposal, and CO2 and VOC emissions in production by 45% for each vehicle produced by 2025 – starting from 2010 levels. Specific CO2 emissions at all plants are to be cut 50% by 2025 compared with 2010. This objective applies to all of the Group’s production locations and is derived from our environmental requirements for production processes, which are anchored in the Group’s environmental principles. Case study substantial strategic decision: Situation: Volkswagen has committed to significantly reduce Scope 1+2 emissions from own operations. Task: To be able to achieve the decrease in production-related GHG emissions that resulted as necessary for compliance with the UN climate agreement, important Scope 1 and Scope 2 emission sources need to be addressed. Action: In this context, Volkswagen is systematically switching its in-house power generating plants to gas. The supply of power for the production operation in Wolfsburg is, for example, currently in the process of being switched by 2022 to highly efficient combined cycle gas turbine (CCGT) plants; for this we will invest €400 million. In addition, the external supply of power at the Volkswagen brand’s 16 plants around the world has already been switched to 70 per cent green electricity from renewable sources and we continue to increase this figure in the near future. Result: The modernization measures and the move away from hard coal will cut annual CO2 emissions by 1.5 million tons. This corresponds to a reduction of close to 60% at the Wolfsburg site or, to make the figure more tangible, the combined annual CO2 emissions of 870,000 cars. For the entire Group, this translates into a global CO2 reduction of 15%. |

## **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 | Direct costs  Capital expenditures | The Group plans to spend nearly EUR 60 billion on the future areas of hybridization, electric mobility and digitalisation in the next five years. This amounts to slightly more than 40% of the company’s investments in property, plant and equipment and all research and development costs during the planning period 2020-2024. Compared with the Group’s last Planning Round, it represents an increase of around 10 percentage points. The Group intends to invest around EUR 33 billion of this figure in electric mobility alone. Case study: Situation: In our path towards full decarbonisation, in order to capitalize on opportunities and avoid risks, we rely heavily on electric vehicles. By 2025, the share of battery electric vehicles in our model portfolio shall be between 20% and 25%. The share of electric vehicles in our new vehicle fleet in Europe and China is set to rise to at least 40% by 2030. Task: Battery cells play a special role: we estimate the Group will need around 150 GWh of battery capacity per year by 2025. That is equivalent to a procurement volume of some €50 billion just to meet demand for the volume models based on the Modular Electric Drive Toolkit (MEB). Alongside security of supply and price stability, sustainability is another key aspect. Action: Within the Group’s battery strategy, over one billion euros is to be invested in the Volkswagen Group’s battery cell activities by 2023/24: In a first step, Volkswagen is investing over €100 million in amassing its own development and production know-how. In addition, Volkswagen is investing a further approx. €900 million in joint battery activities with the Swedish battery producer Northvolt. Result: Construction of a 16 gigawatt hour battery cell factory in Salzgitter is to start in 2020. It is planned to commence production in late 2023/early 2024. |

## **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**

2019

### **Target coverage**

Company-wide

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

Scope 1+2 (market-based)

### **Base year**

2018

### **Covered emissions in base year (metric tons CO2e)**

9027065

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

100

### **Target year**

2030

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

30

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

6318945.5

### **Covered emissions in reporting year (metric tons CO2e)**

8290299

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

27.2058156960947

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

New

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

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

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

The Volkswagen AG commits to reduce absolute Scope 1 & 2 GHG emissions 30% by 2030 from a 2018 base year. This target covers global, Group-wide Scope 1 and 2 emissions from all relevant activities. The target was developed in 2019 and successfully validated by the SBTI in 2020.

### **Target reference number**

Abs 2

### **Year target was set**

2019

### **Target coverage**

Business division

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

Scope 3: Use of sold products

### **Base year**

2018

### **Covered emissions in base year (metric tons CO2e)**

332364361

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

100

### **Target year**

2030

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

30

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

232655052.7

### **Covered emissions in reporting year (metric tons CO2e)**

344474742

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

-12.1456875054864

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

New

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

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

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

Volkswagen AG commits to reduce Scope 3 GHG emissions from use of sold products of light duty vehicles 30% per vehicle km by 2030 from a 2018 base year. The target was developed in 2019 and successfully validated by the SBTI in 2020.

## **C4.1b**

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

### **Target reference number**

Int 1

### **Year target was set**

2019

### **Target coverage**

Business division

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

Scope 1+2 (market-based)

### **Intensity metric**

Other, please specify (tons CO2 per vehicle produced)

### **Base year**

2010

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

1.096

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

98.6

### **Target year**

2025

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

50

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

0.548

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

-6

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

0

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

0.675

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

76.8248175182482

### **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)**

By 2025, the CO2 emissions of all plants per vehicle is to be reduced by 50% compared to 2010. It refers to light duty vehicle production only (hence not 100% of Scope 1+2 covered).

### **Target reference number**

Int 2

### **Year target was set**

2019

### **Target coverage**

Business division

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

Scope 1+2 (location-based) + 3 (upstream and downstream)

### **Intensity metric**

Other, please specify (Metric tons CO2e per vehicle delivered)

### **Base year**

2015

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

43.8

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

80

### **Target year**

2025

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

30

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

30.66

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

-15

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

0

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

43

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

6.08828006088278

### **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)**

We want to improve our passenger cars’ total life cycle carbon footprint by 30% compared to 2015 by as early as 2025. Explanation: The Volkswagen Group measures progress in the reduction of CO2 emissions with a decarbonisation index (DCI). This figure covers major passenger-car manufacturing brands and light commercial vehicles in the Group portfolio for the Europe (EU-28, Norway and Iceland), China and US regions across their life cycle and is measured in tons of CO2 emissions per vehicle. The DCI includes the CO2 emissions from the supply chain, our own production, the provision of fuel, emissions from 200,000 km of driving and from recycling and the remaining Scope 3 categories in accordance with the Greenhouse Gas Protocol (GHG Protocol). These include, for example, emissions from employee commuting, business travel or new production facilities. The diverse input variables for calculating the DCI include TÜV-tested life cycle assessments and the fleet emission figures to be reported publicly to the authorities in the various markets. Note that up to and including 2020, European fleet legislation will be complied with on the basis of the New European Driving Cycle (NEDC). The DCI’s European fleet emissions have therefore been calculated on the basis of the NEDC. From 2021, the NEDC target value will be changed into a WLTP target value through a process defined by lawmakers. When the target values change in 2021, the DCI’s European fleet emissions will also be calculated in accordance with the WLTP, as a result of which fleet emissions in Europe are expected to rise by around 20%. It is intended to maintain the % reduction of 30% for the DCI target, even though baseline and target values will be recalculated due to the before mentioned changes. Note also that absolute Scope 1/2/3 projections stated above were derived at the time of target development based on external market growth assumptions (e.g. the IEA Mobility Model), and not necessarily reflect current Group volume forecasts.

## **C4.2**

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

No other climate-related targets

## **C4.3**

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

Yes

## **C4.3a**

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

|  |  |  |
| --- | --- | --- |
|  | **Number of initiatives** | **Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked \*)** |
| Under investigation | 317 | 15824 |
| To be implemented\* | 190 | 3948 |
| Implementation commenced\* | 161 | 34336 |
| Implemented\* | 1227 | 104315 |
| Not to be implemented | 0 | 0 |

## **C4.3b**

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

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

|  |  |
| --- | --- |
| Energy efficiency in buildings | Other, please specify (Machine/equipment replacement) |

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

3268814

### **Scope(s)**

Scope 2 (location-based)

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

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

8227500

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

4381800

### **Payback period**

<1 year

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

11-15 years

### **Comment**

Energy efficiency in buildings

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

|  |  |
| --- | --- |
| Energy efficiency in buildings | Motors and drives |

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

508795

### **Scope(s)**

Scope 2 (location-based)

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

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

2016100

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

2240800

### **Payback period**

1-3 years

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

6-10 years

### **Comment**

Energy efficiency in buildings

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

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

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

1274633

### **Scope(s)**

Scope 2 (location-based)

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

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

3225500

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

5738800

### **Payback period**

1-3 years

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

11-15 years

### **Comment**

Energy efficiency in buildings

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

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

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

425941

### **Scope(s)**

Scope 2 (location-based)

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

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

2100600

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

1460000

### **Payback period**

<1 year

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

6-10 years

### **Comment**

Energy efficiency in production processes

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

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

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

107323

### **Scope(s)**

Scope 1

### **Voluntary/Mandatory**

Voluntary

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

149400

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

292000

### **Payback period**

1-3 years

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

11-15 years

### **Comment**

Energy efficiency in production processes

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

|  |  |
| --- | --- |
| Energy efficiency in buildings | Insulation |

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

37139

### **Scope(s)**

Scope 1

### **Voluntary/Mandatory**

Voluntary

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

148500

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

265700

### **Payback period**

1-3 years

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

21-30 years

### **Comment**

Energy efficiency in buildings

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

|  |  |
| --- | --- |
| Energy efficiency in production processes | Machine/equipment replacement |

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

64356

### **Scope(s)**

Scope 2 (location-based)

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

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

92700

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

38500

### **Payback period**

<1 year

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

6-10 years

### **Comment**

Energy efficiency in production processes

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

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

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

73621

### **Scope(s)**

Scope 2 (location-based)

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

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

454200

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

1118800

### **Payback period**

1-3 years

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

6-10 years

### **Comment**

Energy efficiency in production processes

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

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

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

2431343

### **Scope(s)**

Scope 2 (location-based)

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

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

54022500

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

12125100

### **Payback period**

<1 year

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

11-15 years

### **Comment**

Energy efficiency in buildings

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

|  |  |
| --- | --- |
| Energy efficiency in buildings | Maintenance program |

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

676301

### **Scope(s)**

Scope 2 (location-based)

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

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

3830000

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

3311300

### **Payback period**

<1 year

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

3-5 years

### **Comment**

Energy efficiency in buildings

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

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

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

1528853

### **Scope(s)**

Scope 1

### **Voluntary/Mandatory**

Voluntary

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

2119500

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

3797600

### **Payback period**

1-3 years

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

6-10 years

### **Comment**

Energy efficiency in buildings

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

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

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

34381

### **Scope(s)**

Scope 2 (location-based)

Scope 2 (market-based)

### **Voluntary/Mandatory**

Voluntary

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

1714000

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

2516600

### **Payback period**

1-3 years

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

11-15 years

### **Comment**

Energy efficiency in production processes

## **C4.3c**

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

|  |  |
| --- | --- |
| **Method** | **Comment** |
| Dedicated budget for low-carbon product R&D | The Automotive Division’s total research and development costs in the reporting period amounted to €14.3 (2018: 13.6) billion and were 4.9% higher than in the previous year; their percentage of the Automotive Division’s sales revenue – the R&D ratio – came to 6.7 (2018: 6.8)%. Along with new models, the focus was primarily on the electrification of our vehicle portfolio, a more efficient range of engines, digitalisation and new technologies. |
| Compliance with regulatory requirements/standards | Compliance with regulatory requirements and standards is a set prerequisite for the Volkswagen Group. Current law and applicable legal regulations provide the binding framework for our worldwide activities. Introduction of increasingly stringent carbon emission performance requirements for vehicles is rigorously monitored worldwide and drives investment in emission reduction activities and thus catalyses the development of innovative emission reduction technologies. As to EU new-car fleet-average emissions, a further significant reduction to 95 g CO2/km by 2021 has already been agreed at EU commission level and the Volkswagen Group is the first carmaker to have committed to this ambitious goal. In the meantime, other major markets too have adopted caps on new-car CO2 emissions. In China, Volkswagen passenger car models comply with the corporate average fuel consumption limits in force in that market since 2012. And measures are in the pipeline for further ambitious improvements, including improvements to the efficiency of our internal combustion engines and the introduction of alternative drive technologies. In the USA and Canada, a cap of 103 g CO2/km will apply from 2025. |
| Internal incentives/recognition programs | Volkswagen sets great store by enabling its employees to come up with ideas and make suggestions for improving work organization and production processes by means of Idea Management, e.g. CO2-Efficiency. In 2019 Volkswagen employees across our German Volkswagen companies submitted a total of 25.000 suggestions for improvements helping substantially to drive up the quality of our products and the efficiency of our processes, reducing costs in the Group by a total of € 31 million. Bonuses were awarded to staff whose ideas were adopted in acknowledgement of their creativity and involvement in the Company. |
| Employee engagement | Amount of anticipated annual CO2 and cost savings from emission reduction activities. The Amount of all environmental measures can be found in the sustainability report: "With the IT-supported “Massnahmen@web” system, we record environmental measures and encourage the Group-wide exchange of best practices. In the reporting period, around 1,250 implemented measures in the area of environment and energy were documented in this system. They serve to improve infrastructure and production processes for Volkswagen Passenger Cars and light commercial vehicles. In addition to the environmental improvements, these activities also resulted in savings of over €78 million in the 2019 reporting period." |
| Dedicated budget for other emissions reduction activities | Investment for environmental protection at our Volkswagen AG production sites (Germany) was 9,000,000 € in 2019. Operating costs for environmental protection in Germany alone were about € 230 million. We primarily invested in water pollution control, waste management and air pollution control. |
| Financial optimization calculations | One key instrument in the pursuit of our economic goals is the Modular Transverse Matrix, also known by its German abbreviation MQB, which helps make our production operations flexible and efficient. For one thing it enables us to use identical components in different models, reducing the cost of each individual vehicle. In Addition the MQB permits the replacement of individual components in response to revised customer wishes. This enables the Group to react promptly to changes in the marketplace and avoid excess capacities and misallocation of resources. In view of the varied and changing CO2 regulation scenario worldwide, this represents an invaluably added measure of flexibility. |

## **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**

Through yearly efficiency improvements on our product portfolio, we enable our customers to reduce their GHG emissions significantly in the use phase of our vehicles. We know from LCA and our CO2 registry tool that CO2 emissions in the use phase of vehicles with combustion engines account for more than 70% of total scope 3 emissions. In addition to our Roadmap E, provision of efficient consumption technologies is Volkswagen’s most effective lever towards more and more environmentally compatible mobility. Our goal is to reduce CO2 emissions from our EU new-car fleet to 95 g/km in 2020 and expanding the portfolio of alternative powertrain technologies is an integral part of our CO2 emission reduction strategy. Globally, in 2019 Volkswagen sold over 284,000 vehicles equipped with eco friendly drive trains (gas, hybrid, all electric), which is still only 2.76% of our total unit sales, but represents a 59% increase over 2018. This shows the dynamic development of this market segment, which we expect to generate significant additional revenues in the medium term: We expect to build around 22 million vehicles on our Group’s electrification platforms over the next ten years. The electric-powered proportion of our fleet in Europe and China will presumably rise to around 40% by 2030

### **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 (ISO 14040, life cycle assessment)

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

2.76

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

<Not Applicable>

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

<Not Applicable>

### **Comment**

## **C5. Emissions methodology**

## **C5.1**

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

### **Scope 1**

### **Base year start**

January 1 2018

### **Base year end**

December 31 2018

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

4729804

### **Comment**

As of this reporting year, we have extended the Scope 1 CO2 emissions report to achieve harmonization with the SBT target. As of this reporting year, Scope 1 emissions also include CO2 emissions from company owned vehicles and mobile equipment as well as CO2 emissions from exported electricity and heat.

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

### **Base year start**

### **Base year end**

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

### **Comment**

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

### **Base year start**

January 1 2018

### **Base year end**

December 31 2018

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

4297262

### **Comment**

## **C5.2**

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

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

## **C6. Emissions data**

## **C6.1**

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

### **Reporting year**

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

4494068

### **Start date**

<Not Applicable>

### **End date**

<Not Applicable>

### **Comment**

As of this reporting year, we have extended the Scope 1 CO2 emissions report to achieve harmonization with the SBT target. As of this reporting year, Scope 1 emissions also include CO2 emissions from company owned vehicles and mobile equipment as well as CO2 emissions from exported electricity and heat.

## **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**

5973894

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

3796231

### **Start date**

<Not Applicable>

### **End date**

<Not Applicable>

### **Comment**

"The location-based scope 2 emissions were calculated in accordance with document "VDA emission factors for electricity, district heating and fuels" from German Association of the Automotive Industry (VDA). The market-based scope 2 emissions calculation is based on 2019 CO2 emission factors. For purchased electrical energy at the production sites in China, market-based CO2 emission factors were not available, CO2 emission factors published by the government were used instead. In some regions of China, Argentina, France and Hungary the market-based CO2 emission factors were higher than the factors from the German Association of the Automotive Industry (VDA). In these cases the (higher) marked based factors were used for the calculation of the location based CO2 emissions for the corresponding production sites.

## **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**

Six Regional Product Centers of Scania and two smaller production sites of RENK

### **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**

No data was available for the mentioned sites. These sites’ aggregated number of employees is about 0.3% of the employees of all production sites included in the disclosure.

## **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**

71564141

### **Emissions calculation methodology**

CO2e emissions in Category 1 have been calculated on base of sales-weighted Life Cycle Assessment (LCA) figures for 10,601,042 Light-Duty vehicles sold in 2019 worldwide. Emission factors have been derived on the basis of a multitude of extensive LCA studies of different car models and brands in the group. These have all been certified independently according to ISO 14040/44. On the basis of these studies and in collaboration with suppliers particular emission factors have been derived on a vehicle-mass basis [kg CO2e/kg vehicle-mass] that represent CO2e emissions from purchased goods and services differentiated for various vehicle classes: • Mini • Small • Compact • Midsize • SUV • Vans • Fullsize • Sports cars • Light-duty commercial vehicles The corresponding activity data represent vehicle-class specific data on • mean vehicle weights and • sales figures from primary data sources.

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

100

### **Please explain**

### **Capital goods**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

16724588

### **Emissions calculation methodology**

Emissions associated with capital goods have been calculated based on economic input-output analysis, using investments data as reported in the Volkswagen AG annual report 2019 These figures include the additions to Volkswagen AG property, plant and equipment. The following types of capital goods have been differentiated in the estimation: • Technical equipment and machinery for vehicle production • Technical equipment and machinery for subassembly and components production • Buildings

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

80

### **Please explain**

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

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

1512239

### **Emissions calculation methodology**

Group-wide energy consumption is measured and reported annually based on information tracked in our internal environmental information system. On the basis of this data source we differentiate Cat.3 emissions for • Electricity and compressed air • Space heating (domestic generation and district heating) • Technical heating (domestic generation and district heating) • Gaseous fuels for manufacturing processes The corresponding Scope 3 emission factors (representing activities in Germany) have been referenced from representative generic databases.

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

100

### **Please explain**

### **Upstream transportation and distribution**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

4622584

### **Emissions calculation methodology**

This figure represents CO2e WTW emissions resulting from both inbound and outbound transportation as well as transportation processes between our facilities worldwide. Transport data is derived from internal transport IT-Systems for all modes of transportation (road, rail, sea, barge and air). The calculation scheme was developed before the first release of GLEC Framework and was adapted in 2017 to meet GLEC requirements. Further adaptions may be needed to meet all GLEC conformance criteria, which are not yet finalized by GLEC. Furthermore, the data collection scheme for transportation of cars and the emissions factors for land transportation have been revised in 2018. Emissions data for buildings / transshipment centers is not available. Primary fuel consumption data is available for a significant share of sea transportation. All other transport emissions are calculated with generic emissions factors parametrized by mode of transport, vehicle size, utilization, distance and payload. In addition to that transport service provider specific information are used as parameters when deriving emissions factors. This Cat. 4 carbon accounting includes all transportation in Europe, all intercontinental transportation and the worldwide distribution of vehicles to national sales companies and vendors (in China only to depots). Transportation for MAN and Scania is only included when operated by Volkswagen Group Logistics. Processes not yet included are transportation of local sourced materials for non-EU factories, transportation of cars between depots and vendors in China, emissions by buildings / transshipment centers and few specialized transport processes in Europe. The carbon accounting scheme is planned to be rolled-out for this regions and processes in the next years. In addition to that MAN and Scania are not yet included in Volkswagen Groups Carbon Accounting. In addition to that trains powered by regenerative electricity cannot yet be identified in transport data and are calculated as conventionally powered trains.

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

100

### **Please explain**

The carbon accounting of transportation (Cat. 4) in 2019 results in 4.0 % lower emissions of CO2e compared to 2018. Main drivers a lower output (-1.54% car production volume) and a reduced number of sea freight container exports (-27%).

### **Waste generated in operations**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

1237583

### **Emissions calculation methodology**

Group-wide waste generation is measured and reported annually based on our internal environmental information system. On the basis of this primary data source we distinguish activity data for waste treatment : • Non-hazardous waste for disposal • Non-hazardous waste for recycling • Metallic waste • Hazardous waste for disposal • Hazardous waste for recycling • Waste water The corresponding Scope 3 emission factors (using factors for the EU) have been referenced from representative generic databases.

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

100

### **Please explain**

### **Business travel**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

721168

### **Emissions calculation methodology**

The Volkswagen Group does not yet have a centralized system that covers business travel activities of all different brands and affiliates. Therefore, a generic estimation was made based on external reference data. This figure represents the mean CO2e-emission of one Volkswagen AG employee per year. The corresponding activity data represents the number of an average of 667,748 employees worldwide in 2019

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

50

### **Please explain**

### **Employee commuting**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

1027995

### **Emissions calculation methodology**

Employee commuting in the Volkswagen group affects the average 667,748 Group employees worldwide in 2019. Activity data have been collected in a specific survey representing commuting to/from our largest facility in Wolfsburg/Germany. These data reflect the commuting behavior of about 54,000 employees from 13 residential areas with daily travelling distances up to 230 km. We assumed 220 working days per year, and worked with the following split between the transport modes: • Car 75% • Train (long distance) 10% • Public transportation (overland) 5% • Public transportation (urban) 10% The corresponding emission factors for these four transport modes were identified on the basis of external generic data sources. Global commuting-related Scope 3 emissions were calculated as an extrapolation of the Wolfsburg results, based on the number of employees.

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

50

### **Please explain**

### **Upstream leased assets**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

We assume that the vast majority of GHG emissions that are generated by use of leased facilities and equipment are already reported in the Scopes 1 and 2. This also applies for leased assets in financial services Due to this we expect the remaining share of emissions from this category less than 1% of the total scope 3 emissions, i.e. being not relevant for our scope 3 GWP inventory.

### **Downstream transportation and distribution**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

Downstream transportation and distribution emissions are included in the reported cat. 4 upstream transportation and distribution emissions.

### **Processing of sold products**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

This category refers to emissions caused by the Group’s semi-knocked down (SKD) and completely-knocked down (CKD) vehicles which are being finally assembled in their respective target markets. As this assembly takes place in Group-owned buildings the respective emissions are included in our Scope 1 & 2 emissions data.

### **Use of sold products**

### **Evaluation status**

Relevant, calculated

### **Metric tonnes CO2e**

344474742

### **Emissions calculation methodology**

The number reflects the impact from the complete use phase (well-to-wheel) of 10,601,042 Light-Duty vehicles sold in 2019 over lifetime. The emission factor represents the weighted average CO2 value of our fleets in the main markets: • EU28 (plus Switzerland + Norway) • China • USA The single figures specifically account for different driving cycles, depending on the region. Considering the individual sales numbers in these regions, the weighted mean value is representative for 83% of our worldwide sales – however, it is assumed to be representative for 100% of our cars. Subsequently this figure is completed by the corresponding well-to-tank emissions that have been derived for each region individually. Activity data represent the number of worldwide sales in combination with an assumed average kilometrage of 200,000 km over lifetime.

### **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**

Not relevant, calculated

### **Metric tonnes CO2e**

1187992

### **Emissions calculation methodology**

In consistence with calculations for categories 1 and 11, this figure represents CO2e emissions from End of life-Treatment of 10,601,042 vehicles (number of Light-Duty vehicles sold in 2019). Different vehicle classes have been differentiated (for details see ’Methodology’ description for Category 1). The corresponding emission factors have been extracted from our extensive life cycle assessments database, representing specific mean values of CO2e emissions from end of life-treatment in the particular vehicle classes.

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

100

### **Please explain**

### **Downstream leased assets**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

2602402

### **Emissions calculation methodology**

Activity data are based on primary information of group-wide financial investments taken from the annual report 2018. The figure comprises payments from non-cancelable leases and rental agreements, particularly the lease payments in 2018. Emissions for this category have been estimated Economic Input- Output assessment, and represent less than 1% of our overall scope 3 emissions (hence “not relevant”).

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

80

### **Please explain**

### **Franchises**

### **Evaluation status**

Not relevant, calculated

### **Metric tonnes CO2e**

1550000

### **Emissions calculation methodology**

For the calculation of this figure we account for Scope 1 & 2 CO2e emissions that are generated at our sales and distribution partners world-wide. Activity data have been evaluated based on the number of partners within the world-wide distribution network of the brands Volkswagen and Volkswagen commercial vehicles. Based on the share of global sales figures with this approach it is assumed that we cover at least 50% of the sales partners for the whole group world-wide. We assume every facility with a number of personnel of 30. Furthermore we distinguish facilities that comprise either (1) sales and service or (2) service only and subsequently different values for energy demand for • personnel in sales • personnel in service The CO2e emission factors for this calculation have been identified in cooperation with our strategic partner Sphera Solutions GmbH.

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

100

### **Please explain**

### **Investments**

### **Evaluation status**

Not relevant, explanation provided

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

“Volkswagen Financial Services" as well as the “Volkswagen Bank” both operate in the financial sector that generally accounts for GHG emissions in this Scope 3 category. However, the core business of these divisions is in financing projects of the brands within the Group. Furthermore, relevant turn overs and revenues are generated through sales financing, leasing and insurance of vehicles of our own property. Thus, we expect the relevance of this category to be marginal, as these emissions are captured in Scope 1 and 2, and other Scope 3 categories

### **Other (upstream)**

### **Evaluation status**

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

### **Other (downstream)**

### **Evaluation status**

### **Metric tonnes CO2e**

<Not Applicable>

### **Emissions calculation methodology**

<Not Applicable>

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

<Not Applicable>

### **Please explain**

## **C6.7**

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

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**

0.0000328

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

8290299

### **Metric denominator**

unit total revenue

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

252632000000

### **Scope 2 figure used**

Market-based

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

14.3

### **Direction of change**

Decreased

### **Reason for change**

There were slight adjustments or updates of indicators from the previous year. Scope 1 emissions include additional emissions, and the number of vehicles and sales revenues were also slightly adjusted. These measures were necessary in order to make a correct comparison between the balance sheet years 2018 and 2019. The sales revenue increased by 7.1% compared to 2018. In contrast, the total CO2 emissions have been decreased by 8.2% through emission reduction activities and the purchase of more renewable energy. The reduction of CO2 emissions is due to various energy efficiency measures. A large part of the savings is a result of the renewal of older production equipment. In the area of infrastructure, many efficiency measures were implemented with regard to heating and cooling the buildings. The lighting in the buildings was also further improved. An overview of the other measures can be found in the answer to question 4.3.

### **Intensity figure**

0.766

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

8290299

### **Metric denominator**

vehicle produced

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

10823378

### **Scope 2 figure used**

Market-based

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

6.5

### **Direction of change**

Decreased

### **Reason for change**

There were slight adjustments or updates of indicators from the previous year. Scope 1 emissions include additional emissions, and the number of vehicles and sales revenues were also slightly adjusted. These measures were necessary in order to make a correct comparison between the balance sheet years 2018 and 2019. The production volume decreased by 1.8% compared to 2018. In contrast, the total CO2 emissions have been decreased by 8.2% through emission reduction activities and the purchase of more renewable energy. The reduction of CO2 emissions is due to various energy efficiency measures. A large part of the savings is a result of the renewal of older production equipment. In the area of infrastructure, many efficiency measures were implemented with regard to heating and cooling the buildings. The lighting in the buildings was also further improved. An overview of the other measures can be found in the answer to question 4.3.

## **C7. Emissions breakdowns**

## **C7.1**

### **(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?**

Yes

## **C7.1a**

### **(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).**

|  |  |  |
| --- | --- | --- |
| **Greenhouse gas** | **Scope 1 emissions (metric tons of CO2e)** | **GWP Reference** |
| CO2 | 4375866 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| CH4 | 6020 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| N2O | 440 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| HFCs | 92361 | IPCC Fourth Assessment Report (AR4 - 100 year) |
| SF6 | 19380 | IPCC Fourth Assessment Report (AR4 - 100 year) |

## **C7.2**

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

|  |  |
| --- | --- |
| **Country/Region** | **Scope 1 emissions (metric tons CO2e)** |
| Argentina | 26653 |
| Belgium | 745 |
| Bosnia & Herzegovina | 232 |
| Brazil | 103216 |
| China | 464583 |
| Denmark | 4200 |
| France | 7829 |
| Finland | 740 |
| Germany | 3217818 |
| India | 8436 |
| Italy | 23616 |
| Mexico | 96073 |
| Netherlands | 6451 |
| Poland | 68648 |
| Portugal | 22361 |
| Russian Federation | 28936 |
| Austria | 8615 |
| South Africa | 21616 |
| Spain | 159495 |
| Sweden | 24370 |
| Switzerland | 13 |
| Thailand | 122 |
| Turkey | 11938 |
| United Kingdom of Great Britain and Northern Ireland | 12248 |
| United States of America | 12780 |
| Slovakia |  |
| Czechia |  |
| Hungary |  |

## **C7.3**

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

By activity

## **C7.3c**

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

|  |  |
| --- | --- |
| **Activity** | **Scope 1 emissions (metric tons CO2e)** |
| Production of passenger cars and light commercial vehicles | 3908653 |
| Production of Heavy commercial vehicles, motorcycles and non-vehicle products | 585415 |

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

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Gross Scope 1 emissions, metric tons CO2e** | **Net Scope 1 emissions , metric tons CO2e** | **Comment** |
| Cement production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Chemicals production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Coal production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Electric utility activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Metals and mining production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (upstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (midstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Steel production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport OEM activities | 4494068 | <Not Applicable> |  |
| Transport services activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |

## **C7.5**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Country/Region** | **Scope 2, location-based (metric tons CO2e)** | **Scope 2, market-based (metric tons CO2e)** | **Purchased and consumed electricity, heat, steam or cooling (MWh)** | **Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)** |
| Argentina | 45015 | 51023 | 148856 | 22360 |
| Austria | 16699 | 16699 | 66765 | 0 |
| Belgium | 12828 | 0 | 61377 | 61377 |
| Bosnia & Herzegovina | 6026 | 5860 | 8794 | 0 |
| Brazil | 138151 | 0 | 487142 | 487142 |
| China | 2789162 | 2443989 | 4580184 | 300663 |
| Czechia | 501445 | 312936 | 1012397 | 475447 |
| Denmark | 9082 | 4509 | 21340 | 3203 |
| France | 436 | 114 | 9922 | 8653 |
| Germany | 1088450 | 423790 | 2538437 | 1412358 |
| Hungary | 175210 | 217237 | 507522 | 324698 |
| India | 55926 | 39548 | 48431 | 0 |
| Italy | 12623 | 0 | 37571 | 37571 |
| Mexico | 277873 | 64518 | 484718 | 388366 |
| Netherlands | 13168 | 0 | 26232 | 26232 |
| Poland | 257271 | 30211 | 428752 | 373477 |
| Portugal | 44248 | 24699 | 135755 | 46796 |
| Russian Federation | 44900 | 16871 | 91883 | 17240 |
| Slovakia | 115858 | 0 | 305694 | 305694 |
| South Africa | 113875 | 97673 | 96982 | 0 |
| Spain | 160390 | 0 | 547180 | 547180 |
| Sweden | 15294 | 1871 | 431139 | 344189 |
| Switzerland | 1641 | 324 | 18034 | 9074 |
| Thailand | 1885 | 691 | 2500 | 0 |
| Turkey | 11648 | 11648 | 19192 | 0 |
| United Kingdom of Great Britain and Northern Ireland |  |  |  |  |
| United States of America |  |  |  |  |
| Finland |  |  |  |  |

## **C7.6**

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

By activity

## **C7.6c**

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

|  |  |  |
| --- | --- | --- |
| **Activity** | **Scope 2, location-based (metric tons CO2e)** | **Scope 2, market-based (metric tons CO2e)** |
| Production of passenger cars and light commercial vehicles | 5649342 | 3572548 |
| Production of Heavy commercial vehicles, motorcycles and non-vehicle products | 324551 | 223683 |

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

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

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Scope 2, location-based, metric tons CO2e** | **Scope 2, market-based (if applicable), metric tons CO2e** | **Comment** |
| Cement production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Chemicals production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Coal production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Metals and mining production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (upstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (midstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Oil and gas production activities (downstream) | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Steel production activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Transport OEM activities |  |  |  |
| Transport services activities | <Not Applicable> | <Not Applicable> | <Not Applicable> |

## **C-TO7.8**

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

### **Activity**

Light Duty Vehicles (LDV)

### **Emissions intensity figure**

0.000085

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

344474742

### **Metric denominator**

p.km

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

4049598044000

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

4

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

10601042

### **Vehicle lifetime in years**

15

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

13333

### **Load factor**

1.91

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

Scope 3 cat. 11 CO2 emissions were distributed to the markets EU, USA, and China (which represent 83% of all Group LDV use phase emissions) based on their respective shares on overall vehicle sales. In the same manner, vehicle sales in the four markets were extrapolated based on the overall sum of vehicles sold. The calculated vehicle sales per market are multiplied with a lifetime kilometrage of 200,000km and the load factor to calculate p.km per market. The load factor was derived from the ETP 2017 with model data for 2015 as a weighted average of the four included markets. The p.km per market are summed up for the total Group LDV p.km in 2019. Finally, the scope 3 cat. 11 CO2 emissions are divided by the Group p.km sum. In the columns to the left, we have entered the lifetime kilometrage of 200,000 km as an annual km of 13,333 km over 15 years. The 4% increase of CO2 intensity per p.km in comparison to 2018 is due to the novel inclusion of CO2 emissions arising from electricity supply chains used for charging of electrified vehicles, a changed accounting of WTT emissions of biofuels and a slight increase in fleet emission average in the EU (Subject to official publication by the European Commission in the annual CO2 fleet monitoring report). We constantly work to further reduce fleet emissions.

## **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 | 402219 | Decreased | 4.38 | Change in renewable energy supply, mostly renewable electricity, led to a decrease in emissions of 402,219 tCO2e. Compared to our total 2018 Scope 1+2 emissions of 9,027,066 tCO2, this represents a decrease of 4,38% (-402,219/9,027,066 = -4,38% |
| Other emissions reduction activities | 106032 | Decreased | 1.15 | Efficiency measures implemented in 2019 led to a decrease in emissions of 106,032 t CO2e. Compared to our total 2018 Scope 1+2 emissions of 9,027,066 tCO2, this represents a decrease of -1,15% (- 106,032 / 9.027.066 tCO2 = - 1,15%) |
| Divestment |  | <Not Applicable> |  |  |
| Acquisitions |  | <Not Applicable> |  |  |
| Mergers |  | <Not Applicable> |  |  |
| Change in output | 148783 | Decreased | 1.65 | Decrease in vehicles produced - 194.243 veh x 0.766 t CO2/veh = 148,783 t CO2 Calculation: - 148,783 tCO2e (2018-2019) / 9.027.066 tCO2 (2018) = - 1,65% |
| Change in methodology |  | <Not Applicable> |  |  |
| Change in boundary |  | <Not Applicable> |  |  |
| Change in physical operating conditions |  | <Not Applicable> |  |  |
| Unidentified | 75540 | Decreased | 0.9 | Various aspects influencing the emissions balance led to an additional decrease, which could not be specified. |
| Other |  | <Not Applicable> |  |  |

## **C7.9b**

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

Market-based

## **C8. Energy**

## **C8.1**

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

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

## **C8.2**

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

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

## **C8.2a**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Heating value** | **MWh from renewable sources** | **MWh from non-renewable sources** | **Total (renewable and non-renewable) MWh** |
| Consumption of fuel (excluding feedstock) | LHV (lower heating value) | 124728 | 16985723 | 17110451 |
| Consumption of purchased or acquired electricity | <Not Applicable> | 4920944 | 4456747 | 9377691 |
| Consumption of purchased or acquired heat | <Not Applicable> | 321447 | 2558063 | 2879509 |
| Consumption of purchased or acquired steam | <Not Applicable> | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Consumption of purchased or acquired cooling | <Not Applicable> | <Not Applicable> | <Not Applicable> | <Not Applicable> |
| Consumption of self-generated non-fuel renewable energy | <Not Applicable> | 302306 | <Not Applicable> | 302306 |
| Total energy consumption | <Not Applicable> | 5669424 | 24000532 | 29669957 |

## **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)**

Natural Gas

### **Heating value**

LHV (lower heating value)

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

9500837

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

<Not Applicable>

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

7722362

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

<Not Applicable>

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

<Not Applicable>

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

1778474

### **Emission factor**

0.2016

### **Unit**

metric tons CO2e per MWh

### **Emissions factor source**

German Emissions Trading Authority (DEHSt) Guidelines for the preparation of monitoring plans for stationary installations in the 3rd trading period

### **Comment**

The emission factor for natural gas can differ slightly from location to location, depending on how high the calorific value of natural gas is.

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

Biogas

### **Heating value**

LHV (lower heating value)

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

124728

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

<Not Applicable>

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

78327

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

<Not Applicable>

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

<Not Applicable>

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

46401

### **Emission factor**

0

### **Unit**

metric tons CO2e per MWh

### **Emissions factor source**

VDA Emission factors (German Association of the Automotive Industry), 2019

### **Comment**

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

Fuel Oil Number 2

### **Heating value**

LHV (lower heating value)

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

23992

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

<Not Applicable>

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

23992

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

<Not Applicable>

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

<Not Applicable>

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

0

### **Emission factor**

0.2664

### **Unit**

metric tons CO2e per MWh

### **Emissions factor source**

German Emissions Trading Authority (DEHSt) Guidelines for the preparation of monitoring plans for stationary installations in the 3rd trading period

### **Comment**

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

Propane Gas

### **Heating value**

LHV (lower heating value)

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

121870

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

<Not Applicable>

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

121870

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

<Not Applicable>

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

<Not Applicable>

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

0

### **Emission factor**

0.234

### **Unit**

metric tons CO2e per MWh

### **Emissions factor source**

German Emissions Trading Authority (DEHSt) Guidelines for the preparation of monitoring plans for stationary installations in the 3rd trading period

### **Comment**

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

Coal

### **Heating value**

LHV (lower heating value)

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

6785960

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

<Not Applicable>

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

0

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

<Not Applicable>

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

<Not Applicable>

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

6785960

### **Emission factor**

0.342

### **Unit**

metric tons CO2e per MWh

### **Emissions factor source**

German Emissions Trading Authority (DEHSt) Guidelines for the preparation of monitoring plans for stationary installations in the 3rd trading period

### **Comment**

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

Diesel

### **Heating value**

LHV (lower heating value)

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

359780

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

<Not Applicable>

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

359780

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

<Not Applicable>

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

<Not Applicable>

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

0

### **Emission factor**

0.2664

### **Unit**

metric tons CO2e per MWh

### **Emissions factor source**

German Emissions Trading Authority (DEHSt) Guidelines for the preparation of monitoring plans for stationary installations in the 3rd trading period

### **Comment**

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

Petrol

### **Heating value**

LHV (lower heating value)

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

193284

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

<Not Applicable>

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

193284

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

<Not Applicable>

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

<Not Applicable>

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

0

### **Emission factor**

0.2592

### **Unit**

metric tons CO2e per MWh

### **Emissions factor source**

German Emissions Trading Authority (DEHSt) Guidelines for the preparation of monitoring plans for stationary installations in the 3rd trading period

### **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 | 3272502 | 2995805 | 229514 | 213003 |
| Heat | 4458865 | 3621289 | 89303 | 89303 |
| 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**

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

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

Solar

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

Asia Pacific (or JAPA)

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

84205

### **Comment**

### **Sourcing method**

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

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

Low-carbon energy mix

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

North America

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

379036

### **Comment**

### **Sourcing method**

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

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

Low-carbon energy mix

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

Europe

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

3692789

### **Comment**

### **Sourcing method**

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

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

Low-carbon energy mix

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

Other, please specify (Europe, North America, Latin America, Asia Pacific)

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

764913

### **Comment**

### **Sourcing method**

Heat/steam/cooling supply agreement

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

Biomass

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

Europe

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

321447

### **Comment**

## **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**

7057

### **Metric numerator**

tCO2e

### **Metric denominator**

Production: Vehicle

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

7481201

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

10600876

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

-5.5

### **Please explain**

There were slight adjustments or updates of indicators from the previous year. Scope 1 emissions include additional emissions, and the number of vehicles were also slightly adjusted. These measures were necessary in order to make a correct comparison between the balance sheet years 2018 and 2019. Intensity has decreased significantly. Reasons are purchase of more renewable energy emissions reduction activities.

### **Activity**

Heavy Duty Vehicles (HDV)

### **Metric figure**

1894

### **Metric numerator**

tCO2

### **Metric denominator**

Production: Vehicle

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

421379

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

222502

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

-1.9

### **Please explain**

There were slight adjustments or updates of indicators from the previous year. Scope 1 emissions include additional emissions, and the number of vehicles were also slightly adjusted. These measures were necessary in order to make a correct comparison between the balance sheet years 2018 and 2019. Intensity has decreased slightly. Reasons are purchase of more renewable energy, emissions reduction activities.

## **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

*LDV - worldwide*

### **Technology**

Battery electric vehicle (BEV)

### **Metric figure**

110721

### **Metric unit**

Units

### **Explanation**

Amount of Battery-Electric vehicles worldwide across all brands. Volkswagen is therefore electrifying the portfolio, with investment in this area alone amounting to more than €33 billion by 2024. The share of electric vehicles in the Group fleet is to rise to at least 40% by 2030.

### **Activity**

Light Duty Vehicles (LDV)

### **Metric**

Sales

*LDV - worldwide*

### **Technology**

Plug-in hybrid vehicle (PHEV)

*E85-Veh. in Brazil*

### **Metric figure**

55268

### **Metric unit**

Units

### **Explanation**

Amount of hybrid vehicles worldwide across all brands (Drive combining two different types of engine and energy storage systems usually an internal combustion engine and an electric motor). Plug-in hybrid electric vehicles (PHEVs) have a larger battery with a correspondingly higher capacity that can be charged via the combust ion engine, the brake system, or an electrical outlet. This increases the range of the vehicle.

### **Activity**

Light Duty Vehicles (LDV)

### **Metric**

Sales

*LDV - worldwide*

### **Technology**

Vehicle using bio-fuel

### **Metric figure**

420880

### **Metric unit**

Units

### **Explanation**

Amount of flexfuel vehicles/engines that can process very high contents of Bio-Ethanol (E85): around 90% of sales in Brazil

### **Activity**

Light Duty Vehicles (LDV)

### **Metric**

Sales

*LDV - worldwide*

### **Technology**

Other, please specify (Vehicle using LPG/CNG)

### **Metric figure**

118726

### **Metric unit**

Units

### **Explanation**

Amount of CNG vehicles worldwide across all brands. Burning this compressed natural gas releases approximately 25% less CO2 than petrol because of its low carbon and high energy content.

## **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**

Electrification

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

Large scale commercial deployment

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

81-100%

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

60000000000

### **Comment**

The 2025 target is to reduce the CO2 footprint of the vehicle fleet by 30% across the lifecycle compared to 2015. The share of electric vehicles in the Group fleet is to rise to at least 40% by 2030. The Group plans to spend nearly EUR 60 billion on the future areas of hybridisation, electric mobility and digitalisation in the next five years. This amounts to slightly more than 40 percent of the company’s investments in property, plant and equipment and all research and development costs during the planning period. Compared with the Group’s last Planning Round, it represents an increase of around 10% points. The Group intends to invest around EUR 33 billion of this figure in electric mobility alone.

## **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**

[VW AG\_CDP Verification Template\_24 April 2020.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/UNY2spKzC0elNw1GEeEDxQ/VWAGCDPVerificationTemplate24April2020.pdf)

### **Page/ section reference**

All pages: The data has been verified (ISEA 3000 revised) by the following organization: PriceWaterhouseCoopers AG (PWC) -

### **Relevant standard**

ASAE3000

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

100

## **C10.1b**

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

### **Scope 2 approach**

Scope 2 market-based

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

Annual process

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

Complete

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

Limited assurance

### **Attach the statement**

[VW AG\_CDP Verification Template\_24 April 2020.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/UNY2spKzC0elNw1GEeEDxQ/VWAGCDPVerificationTemplate24April2020.pdf)

### **Page/ section reference**

All pages: The data has been verified ( ISEA 3000 revised) by the following organization: PriceWaterhouseCoopers AG (PWC) -

### **Relevant standard**

ASAE3000

### **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: 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**

[VW AG\_CDP Verification Template\_24 April 2020.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/UNY2spKzC0elNw1GEeEDxQ/VWAGCDPVerificationTemplate24April2020.pdf)

### **Page/section reference**

All pages: The data has been verified ( ISEA 3000 revised) by the following organization: PriceWaterhouseCoopers AG (PWC) -

### **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**

[VW AG\_CDP Verification Template\_24 April 2020.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/UNY2spKzC0elNw1GEeEDxQ/VWAGCDPVerificationTemplate24April2020.pdf)

### **Page/section reference**

All pages: The data has been verified ( ISEA 3000 revised) by the following organization: PriceWaterhouseCoopers AG (PWC) -

### **Relevant standard**

ISAE3000

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

100

## **C10.2**

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

Yes

## **C10.2a**

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Disclosure module verification relates to** | **Data verified** | **Verification standard** | **Please explain** |
| C8. Energy | Energy consumption | ISAE3000 | The data has been verified by the following organization: PriceWaterhouseCoopers AG (PWC), as part of the assurance of our Non-financial Report 2019, as declared on p.94-95 of said report |
| C6. Emissions data | Year on year change in emissions (Scope 1) | ISAE3000 | The data has been verified by the following organization: PriceWaterhouseCoopers AG (PWC), as part of the assurance of our Non-financial Report 2019, as declared on p.94-95 of said report |
| C6. Emissions data | Year on year change in emissions (Scope 2) | ISAE3000 | The data has been verified by the following organization: PriceWaterhouseCoopers AG (PWC), as part of the assurance of our Non-financial Report 2019, as declared on p.94-95 of said repor |
| C5. Emissions performance | Year on year emissions intensity figure | ISAE3000 | The data has been verified by the following organization: PriceWaterhouseCoopers AG (PWC), as part of the assurance of our Non-financial Report 2019, as declared on p.94-95 of said report |

## **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**

80

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

0

### **Period start date**

January 1 2019

### **Period end date**

December 31 2019

### **Allowances allocated**

975009

### **Allowances purchased**

2621672

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

3596681

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

0

### **Details of ownership**

Facilities we own and operate

### **Comment**

## **C11.1d**

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

To ensure compliance with the European Union ETS Volkswagen tries to reduce its need for emission certificates. Besides efficiency measures, lowering the emission intensity of our energy supply plays a major role in our efforts to cut GHG emissions. A large part of the energy demand of Volkswagen AG at our German locations is covered by own generation facilities, operated by our subsidiary VW Kraftwerk GmbH. Since 2011, VW Kraftwerk GmbH has been investing in the ongoing development of renewables and the construction of highly efficient combined heat and power (CHP) plants driven by natural gas.

Responsibility for energy- efficient production within our production plants lies with the Energy Management Production team. This team develops energy efficiency standards for the whole Group, which require for example that plants must only purchase energy-efficient machine tools or production equipment. Also, for the past ten years the Corporate Environment Working Group has been promoting worldwide best practice sharing.

Case study:

Situation:

The European Commission is already planning to make further changes to emissions trading when the fourth trading period begins (from 2021). These could lead to a tightening of the system

and thus to price increases for the certificates.

Task:

Significantly reduce the Group’s need for emission certificates

Action:

At our Wolfsburg site alone, we will invest €400 million in the conversion of the existing coal fired power plants to natural gas firing. The conversion was started in the reporting year. A 33% increase in the energy efficiency of combined cycle gas turbine power plants and the use of natural gas instead of coal is intended to decrease the CO2 emissions of the two power plants.

Result:

The modernization measures and the move away from hard coal will cut annual CO2 emissions – and therefore the need for CO2 certificate - by 1.5 million tons. This corresponds to a reduction of close to 60% at the Wolfsburg site or, to make the figure more tangible, the combined annual CO2 emissions of 870,000 cars.

Purchasing/procurement strategy:

A second major part of Volkswagen’s strategy to comply with the schemes is a uniform Group-wide steering (mechanism) for the distribution of certificates to the Group companies. Certificates for the third trading period are secured in advance (“pooling” of certificates). This allows a decoupling of market and price fluctuations. Thereby Volkswagen assures in the long term that the Group will be compliant in the field of emission trading. All these efforts have their part to play in protecting the climate.

## **C11.2**

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

Yes

## **C11.2a**

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

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

Credit purchase

### **Project type**

Forests

### **Project identification**

Katingan Peatland Restoration and Conservation Project, Indonesia, https://katinganproject.com/

### **Verified to which standard**

VCS (Verified Carbon Standard)

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

47405

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

47405

### **Credits cancelled**

Yes

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

Voluntary Offsetting

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

Credit purchase

### **Project type**

Wind

### **Project identification**

100.5 MW Wind Power Project in Madhya Pradesh, India, https://www.goldstandard.org/projects/1005-mw-wind-project-india-orange-renewable

### **Verified to which standard**

Gold Standard

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

6850

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

6850

### **Credits cancelled**

Yes

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

Voluntary Offsetting

## **C11.3**

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

Yes

## **C11.3a**

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

### **Objective for implementing an internal carbon price**

Navigate GHG regulations

### **GHG Scope**

Scope 3

### **Application**

Product Line; Research and Development (Applies to LDV sold within the EU)

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

475

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

This is a fixed price, determined by penalties for exceeding fleet emission regulations in the applicable market. In case of future changes to this regulation, or an extension of its scope, we will adjust the setting of the price accordingly.

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

Implicit price

### **Impact & implication**

EU fleet regulation from 2020/2021 onwards (95 g CO2 / km for the whole fleet) exceeding the target by 1 g CO2 / km costs 95 € / vehicle. Use: This serves as a price tag for our internal CO2 management. Apart from that price tag we spare no effort to comply with the worldwide fleet emission limits. The price is used on a per vehicle basis, and serves to identify cost effective approaches to further reduce vehicle consumption. In order to arrive at the requested price per t CO2, we assumed a kilometrage of 200000 per vehicle. Impact: Target achievement is consequently pursued via continuous development and provision of more and more fuel efficient and CO2 emission reduced vehicles and by strongly pursuing our decarbonisation program: The Volkswagen Group is forging ahead with the fundamental change of system in individual mobility and systematically aligning with electric drives. The Group is planning to launch almost 75 new electric models in the next ten years – instead of the 50 previously planned. As a result, the projected number of vehicles to be built on the Group’s electric platforms in the next decade will increase from 15 million to 22 million. Expanding e-mobility is an important building block on the road to a CO2-neutral balance. Volkswagen has signed of a comprehensive decarbonisation program aimed at achieving a fully CO2-neutral balance in all areas from fleet to production to administration by 2050. Volkswagen is thus fully committed to the Paris climate targets. Based on most recent decisions within our decarbonisation program, the company assesses the introduction of carbon pricing for investments in manufacturing units.

## **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**

Information collection (understanding supplier behavior)

### **Details of engagement**

Collect climate change and carbon information at least annually from suppliers

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

0.7

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

79

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

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

In 2019, we further increased the number of suppliers who we survey as part of the CDP Supply Chain Program regarding responsibility for our climate and water to more than 280. This equates to more than 79% of our production- related procurement spending (excluding services, VW Brazil, Scania and our joint ventures in China). The 280 selected suppliers deliver a majority of the materials with the highest share of material emissions. This is why we select the defined suppliers despite the fact that the share of suppliers by number is comparably low. This is due to the fact that we have more than 40 000 tier 1 suppliers worldwide, of which many have a small share of procurement spend, and/or are not production material suppliers. We use suppliers’ data in different ways: We use the data to analyse anomalies and to get in direct dialogue with the suppliers. Moreover, we use the data for comparison with our own generic data and to make our LCA databases more specific.

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

We analyze the responses that we get in line with the CDP Supply Chain Program in order to select suppliers for our business. Scope 3 emissions are a main driver of total emissions within Volkswagen vehicles, for which we focus on managing these towards lower impacts. We measure the response rate and the average scoring level attained as general measures for success. With the climate protection survey, we achieve an above-average response rate and thus are able to cover 83% of production-related procurement spending. We further measure the impact by looking at the development of several indicators that we derive from the CDP dataset. Emission reductions: According to our suppliers’ self-assessments, they reduced their overall emissions by a total of 8.05 million t of CO2-e compared to the previous year (2018: 11.7 million t of CO2-e). Science-based targets: Since 2016, the CDP has included science- based targets (SBTs) in the questionnaire. In 2019, 34% of our answering suppliers questioned have already set SBTs or have undertaken to set such targets (2018: 29%). These emission reduction developments within our supply chain are contributing to Volkswagen’s positive evaluation under the CDP rating’s Leadership Index. These reductions also contribute to our total emissions reduction target of -30% reduction over the entire life cycle by 2025 compared to 2015. To attain reductions in a comparable magnitude regarding supply chain emissions is therefore our overall benchmark for success.

### **Comment**

### **Type of engagement**

Information collection (understanding supplier behavior)

### **Details of engagement**

Other, please specify (Suppliers environmental & social data)

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

100

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

100

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

16

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

All our suppliers are requested to answer a Sustainability Questionnaire Self-Assessment Questionnaire (SAQ) which contains questions concerning environmental management and goals (i.e. presence of an environmental and/or energy management system, and whether the supplier is taking part in the CDP Climate Change program). In 2020, this sustainability questionnaire will be transferred into the S-Rating initiative. All our suppliers are requested to minimize their impacts on the environment (see brochure "Sustainability in Supplier Relation"). The emissions of Purchased Goods and Services, which are directly supply chain-related, make up 16% of our total Scope 3 inventory. All material suppliers are requested to complete the questionnaire, because all of our suppliers must agree to our Code of Conduct before doing business with Volkswagen Group, hence we also assess all suppliers in terms of their performance and adherence to the outlined principles. The sustainability requirements towards suppliers are specified in the Code of Conduct for Business Partners, which defines the Volkswagen Group’s expectations regarding the way business partners act in their corporate activities. The requirements are considered a basis for successful business relations between the Volkswagen Group and its partners, including suppliers.

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

A total of 12,646 suppliers submitted a questionnaire in 2019. In the reporting year, over 5,915 suppliers improved their sustainability performance through taking appropriate steps. 65% of our 2,000 highest revenue suppliers documented that they have a certified environmental management system in accordance with ISO 14001 and/or EMAS. We use the responses to these self-assessments to help identify ways to enhance sustainability performance, and then communicate the latter to our suppliers. In the last fiscal year, by taking appropriate measures to enhance suppliers’ sustainability performance, we were able to improve the sustainability performance of more than 2,100 suppliers.

### **Comment**

### **Type of engagement**

Engagement & incentivization (changing supplier behavior)

### **Details of engagement**

Run an engagement campaign to educate suppliers about climate change

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

100

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

100

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

16

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

All our suppliers are requested to conduct the eLearning which includes lessons on environmental protection as well as energy efficiency and also a self-check to test their understanding from these lessons. The eLearning which is also available to all Volkswagen Group procurement staff, can be conducted in eight languages. The emissions of Purchased Goods and Services, which are directly supply chain-related, make up 16% of our total Scope 3 inventory. All material suppliers are requested to complete the questionnaire, because all of our suppliers must agree to our Code of Conduct before doing business with Volkswagen Group, hence we also assess all suppliers in terms of their performance and adherence to the outlined principles. The sustainability requirements towards suppliers are specified in the Code of Conduct for Business Partners, which defines the Volkswagen Group’s expectations regarding the way business partners act in their corporate activities. The requirements are considered a basis for successful business relations between the Volkswagen Group and its partners, including suppliers.

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

By the end of the reporting year, more than 33,000 suppliers – representing 64% of the sales revenue of suppliers of our procurement volume – had completed the e-learning module. Alongside the e-learning format, we also conduct issue-specific sustainability training courses and workshops with our suppliers at selected locations. During the reporting period, events were held in countries including Argentina, Brazil, Germany, Mexico, Poland, Sweden and South Africa. In total, the awareness of around 1,500 personnel employed by some 1,100 of our suppliers was raised on sustainability issues at these events. In addition, we also work with industry initiatives and in cooperation with other companies on equipping our suppliers to better manage sustainability.

### **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**

92

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

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

<Not Applicable>

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

Volkswagen provides information about the use phase CO2 emissions and respective labels and certificates of individual models in sales materials, on our brands’ websites and at dealerships worldwide This applies to fleet customers as well as end- customers alike. In the most important markets for the Volkswagen Group, i.e. the EU, USA, China, labelling requirements for passenger car fuel efficiency are in place, as well as in many other markets. The % stated in “size of engagement” refers to our passenger car sales in EU, USA and China, where the coverage of said engagement can be safely assumed and easily calculated: Car labeling directive in the EU: In the Europe/Other markets region, we sold 4.7 million vehicles (+0.2 %). MEPS in China: the Asia-Pacific region – including the Chinese joint ventures – we sold a total of 4.6 (4.5) million vehicles in the reporting year. EPA fuel economy label in the US: In North America, Group sales stood at 0.9 million vehicles. The share of deliveries of these markets are about 92% of our total deliveries of 10.97 million in 2019.

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

We measure the impact and the success of the engagement first and foremost by monitoring the average fleet fuel consumption/emissions in the stated markets. Our fleet emission value has decreased in all three markets over the last five years (e.g. from 126 g/km to 124 g/km in EU28+2 / Subject to official publication by the European Commission in the annual CO2 fleet monitoring report). However, a stagnation was visible in the last 2 reporting years in the EU and US. This could signify that impacts of product information sharing and labelling have somewhat diminished over time, in the context of customer preference for larger cars. Another measure of success is the number and share of vehicles equipped with alternative drive technologies, since their advantages regarding driving emissions are usually clearly visible to customers within the different labelling schemes (e.g. the battery-electric eGolf, the Plugin Hybrid Golf GTE and the CNG powered Golf TGI are all labelled in the highest efficiency class “A+” in Germany). In 2019, the worldwide production of light duty vehicles with alternative drivetrain technologies was at 248,715 vehicles (or 2.76% of total), up from 179,140 vehicles (or 1.71%) in 2018 – an increase of 59%.

## **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** |
| Mandatory carbon reporting | Support | EU Monitoring of CO2-Emissions from light duty vehicle fleets | support for carbon reporting |
| Energy efficiency | Support with minor exceptions | integration in Volkswagen Group Strategy and publication of the "CEO alignment letter" with several other CEO's of European Companies to achieve the goals of the European Green Deal | supporting of the European Green Deal |
| Clean energy generation | Support with minor exceptions | Erneuerbare Energien Gesetz (EEG, Renewable Energy Act, Germany) | Support for EEG (feed-in tariff for renewables) and exceptions for “Eigenstromregelung” (rules for energy produced for own use); support for renewable energy generation for company sites in Germany |
| Clean energy generation | Support with minor exceptions | Kohleausstiegsgesetz (German law to phase-out coal) | Support for Coal Exit and exceptions for “Eigenstromregelung” |
| Other, please specify (Emissions) | Support with minor exceptions | Klimaschutzgesetz (Climate Protection Law, Germany) | Support for climate goals; active participation in study by Federation of German Industry (BDI) and in the “Nationale Plattform Mobilität” (NPM, National Platform Mobility, both Germany) |

## **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**

BDI – Bundesverband der dt. Industrie

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

Consistent

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

Climate protection needs a massive investment drive. An 80% reduction in greenhouse gas emissions by 2050 against 1990 is technically and economically feasible. An essential step to achieving this is to release energy-intensive businesses from the extra burdens imposed by climate policy that have no international counterpart. In this case, Germany would be able to unilaterally reach the 80% goal without hurting the economy. Under these conditions, industrial enterprises would even benefit from ambitious climate targets.

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

Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions within trade associations: The Volkswagen Group supports the goals of the Paris Agreement as well as both European and German energy and climate policy. The company aims to be carbon-neutral by 2050.

### **Trade association**

Business Europe

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

Consistent

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

See study “European Business Views On a Competitive Energy & Climate Strategy”, April 2019

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

Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions within trade associations: The Volkswagen Group supports the goals of the Paris Agreement as well as both European and German energy and climate policy. The company aims to be carbon-neutral by 2050.

### **Trade association**

CSR Europe

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

Consistent

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

See “Our 2030 Strategy, Mainstreaming the urgency for action”

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

Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions within trade associations: The Volkswagen Group supports the goals of the Paris Agreement as well as both European and German energy and climate policy. The company aims to be carbon-neutral by 2050.

### **Trade association**

econsense

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

Consistent

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

'econsense' is an association of leading, globally active companies and organisations of German business specializing in the area of sustainable development and corporate social responsibility (CSR). Founded in 2000 on the initiative of the Federation of German Industries (BDI), the goal of econsense is to provide a dialogue platform and think tank, with the dual objectives of advancing sustainable development in business and assuming social responsibility.

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

Volkswagen was involved in several project groups e.g. on 'reporting and ratings'. The results of the project groups support the goals of the organization. As an active participant Volkswagen has, like all the other members, an influence on the development of positions. Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions within trade associations: The Volkswagen Group supports the goals of the Paris Agreement as well as both European and German energy and climate policy. The company aims to be carbon-neutral by 2050.

### **Trade association**

European Automobile Manufacturers’ Association (ACEA)

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

Consistent

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

See ACEA position paper “The COP21 Climate Change Conference”, November 2015

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

Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions within trade associations: The Volkswagen Group supports the goals of the Paris Agreement as well as both European and German energy and climate policy. The company aims to be carbon-neutral by 2050.

### **Trade association**

German Association of the Automotive Industry (VDA)

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

Consistent

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

See statements on “Environment and Climate”

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

Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions within trade associations: The Volkswagen Group supports the goals of the Paris Agreement as well as both European and German energy and climate policy. The company aims to be carbon-neutral by 2050.

### **Trade association**

International Chamber of Commerce (ICC)

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

Consistent

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

See press release “ICC hails entry into force of Paris Agreement”, November 2016

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

Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions within trade associations: The Volkswagen Group supports the goals of the Paris Agreement as well as both European and German energy and climate policy. The company aims to be carbon-neutral by 2050.

### **Trade association**

VDMA – Verband Deutscher Maschinen- und Anlagenbauer e.V.

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

Consistent

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

The mechanical engineering industry is committed to the Paris agreements climate protection targets. In order to achieve this, it is absolutely necessary to change the current system of energy pricing in Germany.

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

Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions within trade associations: The Volkswagen Group supports the goals of the Paris Agreement as well as both European and German energy and climate policy. The company aims to be carbon-neutral by 2050.

### **Trade association**

VIK – Verband der Industriellen Energie- und Kraftwirtschaft

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

Consistent

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

“The Paris climate agreement and the EU and Germany's climate protection policy based on it formulate very ambitious goals. To achieve the 2-degree goal, carbon neutrality in the way of production and social life must be achieved over the course of the century. (...) Decarbonisation is only conceivable beyond national politics and needs a political framework in which space is given for the development of the necessary technological leaps.”

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

Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions within trade associations: The Volkswagen Group supports the goals of the Paris Agreement as well as both European and German energy and climate policy. The company aims to be carbon-neutral by 2050.

### **Trade association**

World Economic Forum

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

Consistent

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

Climate change poses an urgent threat to economic progress, global food security, our natural systems, and individual livelihoods. (…) Public and private sector collaboration is essential to create a marketplace that will enable dramatic reductions in emissions and build resilience.

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

Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions within trade associations: The Volkswagen Group supports the goals of the Paris Agreement as well as both European and German energy and climate policy. The company aims to be carbon-neutral by 2050.

## **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.**

Volkswagen, already an active member of the Vision 2050-project of the WBCSD, also joined the follow-up project WBCSD Vision 2050 refresh. The WBCSD’s cornerstone Vision 2050 report

called for a new agenda for business laying out a pathway to a world in which nine billion people can live well, and within the planet’s resources, by mid-century. The Vision 2050 Refresh work will bring the vision up to date, unlock systems transformation and its linked opportunities, and make sense of an increasingly complex sustainability space. Alignment with strategy: Our work with the WBCSD is consistent with our ambitious targets / our strategy on climate change. We welcome the ratification of the Paris Accord 2015 on climate change, which aims to limit global warming to less than 2°C above pre-industrial levels. In this context, the Volkswagen Group defined the decarbonisation index (DCI) as a strategic indicator covering the value chain which we use to measure progress.

We consider it our responsibility to actively participate in shaping the framework for our economic activity – i.e. also the framework for the decarbonisation of our business – in politics and civil society in dialog with our stakeholders. In the process, we ensure consistent communication of all brands and companies (“One Voice Policy”), including in associations. Principles such as integrity, openness and verifiability and guidelines for contact with politicians as well as rules for transparency are set out in the Group-wide policy. For instance, Volkswagen AG’s entry in the European Union’s transparency register and the disclosure of our positions represented to politicians in the reporting year are based on these principles.

The Volkswagen Group holds a position within the Council of the thinktank “Agora Verkehrswende” and regularly participates in public panel discussions. Agora Verkehrswende aims at transforming the transport system with the objective of full decarbonisation by 2050. Volkswagen Group is putting forward the Group’s position regarding decarbonisation in discussions with the think tank. Furthermore, we regularly participate in discussion at the foundation “Stiftung 2 Grad” and put forward our positions regarding decarbonisation.

To support its strategic sustainability issues, the Volkswagen Group appointed a Sustainability Council in September 2016. This is made up of internationally renowned experts from the academic world, politics and society. The Council establishes its own working methods and areas of focus independently, has extensive rights for the purposes of exchanging information, consultation and initiating action, and consults regularly with the Board of Management, top management and the employee representatives. The project, which began in 2018, achieved its first results in 2019: the Open Source Lab on Sustainable Mobility, for example, organized dialog events about using open data in mobility and prepared handouts, the international program for financing forecast-based civil protection has implemented initial mechanisms, the research project on transport policy instruments for achieving international climate targets has published initial short studies, the visiting professors at Open Labs have begun their work and the project for the strategic focus of sustainability at Volkswagen has reached its first milestones. In addition, the Council decided on three new initiatives: a research project on distribution effects and the acceptance of climate-friendly fiscal policies, a survey on the effects of digitalisation and e-mobility on employment and a commitment to a sustainable cobalt supply chain. Furthermore, the Sustainability Council formulated further recommendations for how technological, political and cultural change should be organized to win back trust and lay the foundations for future success.

## **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?**

We consider it our responsibility to actively participate in shaping the framework for our economic activity – i.e. also the framework for the decarbonisation of our business – in politics and civil society in dialog with our stakeholders. In the process, we ensure consistent communication of all brands and companies (“One Voice Policy”), including in associations. Principles such as integrity, openness and verifiability and guidelines for contact with politicians as well as rules for transparency are set out in the Group-wide policy. For instance, Volkswagen AG’s entry in the European Union’s transparency register and the disclosure of our positions represented to politicians in the reporting year are based on these principles.

Rules for the representation of the Group’s political interests in associations have also been developed as part of the Group-wide policy. Firstly, all areas in the group that carry out the tasks of representing political interests inform the Public Affairs Division of their activities. Secondly, within the associations they are committed to the same principles and guidelines. They undertake to contribute the Group’s positions for dialog with politicians to the discussions within these organizations (within the framework of what is permitted under competition and antitrust law) without change. Where the positions for dialog with politicians that are decided in the group of members differ substantially from the contributed positions of the Group, this is recorded as

dissent. This process also fully applies to any policy engagement on the topic of climate change and related topics. Regarding climate change and sustainability, there are additional relevant processes to ensure consistency regarding our strategy:

The Corporate Sustainability Steering Committee regularly updates the Group Board of Management on issues of relevance to sustainability. The steering committee includes top managers from corporate functions, as well as representatives of the Group Works Council and brands. Its tasks include defining strategic sustainability goals and position statements, identifying key action areas and approving the sustainability report. Management indicators are used to monitor the extent to which these sustainability goals are being met. The steering committee meets regularly under the leadership of the external affairs and sustainability function.

## **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**

[Volkswagenannualreport2019.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/TTIHpW4dPUSVw4F-Lqq3ug/Volkswagenannualreport2019.pdf)

[Volkswagenannualreport2019.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/h9xUHTuTnEKFdgfLvkP-aQ/Volkswagenannualreport2019.pdf)

### **Page/Section reference**

51-54, 133-150, 168-180

### **Content elements**

Governance

Strategy

Risks & opportunities

Other metrics

### **Comment**

Annual Report 2019

### **Publication**

In voluntary sustainability report

### **Status**

Complete

### **Attach the document**

[Nonfinancial\_Report\_2019\_e.pdf](https://www.cdp.net/en/formatted_responses/files?file_path=k9me76vz7u2sozvqoi2gbw-cdp-credit360-com/YTZXR0ShEEy1CpmQa2vnzQ/NonfinancialReport2019e.pdf)

### **Page/Section reference**

6-13, 17-21, 60-72

### **Content elements**

Governance

Strategy

Risks & opportunities

Emissions figures

Emission targets

Other metrics

### **Comment**

Nonfinancial / Sustainability Report 2019

## **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.**

For all described risks:

The description of the risk factor, and its potential impact on the Volkswagen business, including the estimates of potential financial impact and cost of management, amount to forward-looking statements. Although Volkswagen believes that the expectations reflected in these forward-looking statements are reasonable, it can give no assurance that they will materialize or prove to be correct. Because these statements involve risks and uncertainties, the actual result or outcome could differ materially from those set out in the forward-looking statements as a

result of, among other things: the Volkswagen Group's ability to successfully develop, introduce and expand its products; changes in international and local economic, business and industry

conditions; significant changes in economic, political and market conditions in China, including the effect of competition from new market entrants, on Volkswagen Group's vehicle sales and

market position in China; the Volkswagen Group's ability to manage the legal and regulatory proceedings faced by it; and the Volkswagen Group's ability to manage the legal and regulatory

aspects of its operations, including environmental compliance. Additional factors could cause the Volkswagen Group's actual financial impact or cost of management to differ materially from

that described above.

## **C15.1**

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

|  |  |  |
| --- | --- | --- |
|  | **Job title** | **Corresponding job category** |
| Row 1 | Chief Executive Officer / Chairman of the Board of Management | Chief Executive Officer (CEO) |