Decarbonization

GRI 201-2

On the Path to Becoming a Net Carbon-Neutral Company

Since industrialization began, the global average temperature has already risen by around 1.2 degrees Celsius – with drastic consequences for nature, society and business. For example, the number of extreme weather events in Germany has tripled in the last 50 years. The transportation and mobility sector is one of the biggest contributors to climate change: According to the Intergovernmental Panel on Climate Change's calculations, it currently accounts for around 23% of global energy-related greenhouse gas emissions. As one of the world's largest automotive manufacturers, Volkswagen is aware of the responsibility this entails. The Group is committed to the Paris Climate Agreement, which aims to keep the increase in global temperature by 2050 to well below two degrees Celsius.

Volkswagen wants to become a net carbon-neutral company by 2050. We have set an intermediate goal for ourselves along the way: By 2030, we want to reduce the carbon footprint of our passenger cars and light commercial vehicles by 30% per vehicle (compared with 2018). We want to achieve this goal purely through reduction measures and switching to renewable energies – i.e., without any offset measures. In addition to the Group's electric offensive, we are concentrating to a greater extent on integrating renewably generated electricity in the use phase and switching the entire power supply for our plants to renewable energy.

Whether in regard to regulatory requirements, the performance of our products or our Group's ongoing transformation process, climate-related topics have an important strategic and operational significance for Volkswagen. This is something we also emphasize with our investment decisions. For example, more than two thirds (68%) of the investments planned between 2023 and 2027 will be made in the future fields of digitalization and electrification. In the previous five-year plan, it was only 56%.

Decarbonization of the Group's business activities occupies a key position in the NEW AUTO Group strategy and is one of six focus topics in the ESG, decarbonization and integrity Group initiative. The commitment to climate protection is also a core part of our goTOzero environmental mission statement, which stands for a net carbon-neutral way of doing business. You can find further information on our environmental mission statement in the Environmental Compliance Management chapter.

→ Environmental Compliance Management

Reporting According to TCFD Recommendations

This year, too, the chapter on decarbonization is based on the guidelines of the Task Force on Climate-related Financial Disclosures (TCFD), which was set up by the G20's Financial Stability Board. These guidelines create a coherent framework for voluntary and consistent reporting of entities' climate-related financial risks and opportunities. We report along the four requirement categories that companies should take into account in their reporting according to the TCFD: governance, strategy, risk management, metrics and targets.

Management of Group-Wide Climate Protection Measures

The Volkswagen Group has established Group-wide sustainability management. The related structures, processes and responsibilities are set out in a specific Group policy. The Chairman of the Board of Management of Volkswagen AG has cross-functional overall responsibility for sustainability. Additional responsibility is taken by members of the Board of Management with their responsibility for specific management systems relating to sustainability and by the newly appointed Chief Sustainability Officer at Group level. Sustainability is part of the Top 10 program and is managed through the NEW AUTO strategy's strategic management structure. The content is regularly evaluated and reported in the Board of Management. Product portfolio topics are managed by the Group Steering Committee for Fleet Compliance, which informs the Group Board of Management at least twice a year on topics such as product-related greenhouse gas emissions.

Clear Responsibilities
The Group-wide management of environmental protection is the responsibility of the Chief Executive Officer (CEO) of the Volkswagen Passenger Cars brand and of the Group Steering Committee for the Environment and Energy, which is supported by numerous specialist bodies. The Volkswagen Passenger Cars brand CEO regularly informs the Group Board of Management on sustainability, environmental and energy-related topics. The member of the Board of Management is responsible for all environmental activities, including activities connected with climate-friendly mobility.

You can find further information on responsibilities and management in the Environmental Compliance Management chapter.

→ Environmental Compliance Management

Volkswagen's Group Head of Environment provides reports to the Group Board of Management on environment- and energy-related topics in their capacity as Head of the Group Steering Committee for the Environment and Energy. The Division Head of Group and Product Strategy, General Secretariat provides reports on the Top 10 program to the Chair of the Board of Management and regularly informs the Group Board of Management on sustainability- and environment-related topics. The positions described have the task of coordinating and managing the sustainability, environmental and CO_2 activities decided by the Group Board of Management.

Climate-related topics are coordinated and managed by regular meetings of the Group steering committees (at least six meetings per year) and by continuous communication with the heads of the Group's and the brands' various research and development units and other Group functions. Internal and external stakeholder engagement also plays an important role in this context. For example, we use the feedback from regular stakeholder dialogs to review our strategies and approaches and adjust them where necessary.

→ Stakeholder Management

→ Sustainability Management

Decarbonization Progress Linked with Board of Management Remuneration
The decarbonization index (DCI) operationalizes the Volkswagen Group's climate protection targets and is therefore the core key indicator in the Group related to climate protection. The DCI covers the CO_2 emissions over the entire vehicle life cycle for the brands that manufacture passenger cars and light commercial vehicles in the EU27+3 region, China and the USA. The Volkswagen Group has linked the remuneration of the members of its Board of Management to, among other things, the development of the DCI to create additional incentives here. The Volkswagen Group's Remuneration Report provides further information on how key sustainability criteria are taken into account in the Board of Management's remuneration.

→ 2023 Annual Report > Remuneration Report

In addition, from 2023 the achievement of the target for the DCI has been anchored in management remuneration by introducing an ESG factor in the annual bonus.

The Volkswagen Group's Climate-Related Risk and Opportunity Analysis

The Group identifies both risks resulting from climate change (physical risks) and risks and opportunities due to the shift toward a decarbonized economy (transitional risks and opportunities). They are not only identified but also assessed and handled in accordance with the procedures explained in the Risk Management chapter.

→ Risk Management

The following analysis shows an excerpt from the internal assessment of significant risks and opportunities.

I. Transitional risks

Politics & law

Emissions standards
Compliance with fleet and exhaust-emission limits can be technically challenging and require financial investment. Breaches of limits may also result in significant financial penalties. The Volkswagen Group closely coordinates technology and product planning with its brands so as to implement both existing and increasing legal requirements and to avoid breaches of limits.

Carbon pricing
Volkswagen supports ambitious carbon pricing, as this promotes the transformation to climate-friendly electric mobility in line with Group strategy. An increasingly effective carbon price, particularly in Europe, may, however, also lead to additional costs in energy and material consumption. The Group is countering this risk by switching its energy supply to renewable energies in the long term and integrating corresponding quotas for the use of renewably generated electricity in supplier-side procurement requirements.

Climate-related lawsuits
Requirements for greater climate-protection performance or incomplete disclosures on the impact of climate change may potentially result in lawsuits for companies. The Group counters this risk firstly through certification of its self-imposed decarbonization targets by independent and internationally recognized organizations and secondly through consistently aligning its nonfinancial reporting with legal and capital-market requirements.

a. Technology

Increasing model diversity
The increasing diversity of models as part of the electric offensive and shorter product life cycles translate to a global increase in vehicle launches. The technical systems and processes involved are complex, which means there is a risk that vehicle launches may be delayed. The Group counters this risk by identifying weak points in product creation early and on the basis of experience, with the aim of protecting vehicle launches in respect of quantity, quality and timing.

Stranded assets
Production capacity and technical equipment that are limited to the manufacture of high-emission products run the risk of losing value and becoming "stranded assets" during the transition to a low-carbon way of doing business. The Group counters this risk by focusing its investment program on capacity that serves the transformation of the Group to a leading provider of sustainable mobility.

b. Market

Emissions-based vehicle taxation
Potential increases in vehicle taxes based on CO_2 emissions – as is already the case in many European countries – may lead to demand shifting in favor of smaller segments and engines and have an adverse financial impact for the Group. The Group counters this risk by constantly developing new and fuel-efficient vehicles and alternative drive technologies. The electrification of the portfolio and the Group's drive and fuel strategy form the basis for this.

Availability of renewable energies
The transition to a low-emission way of doing business is leading to market participants switching their energy supply to non-fossil sources and a concentration of demand for renewable energies. Excess demand for electricity from non-fossil sources potentially arising from this may result in higher market prices. This could result in additional costs for the Group and threaten the achievement of its decarbonization targets if the quantities required for achieving the targets cannot be provided by suppliers. The Group counters this risk with targeted support for the construction of additional generation capacity for electricity from renewable sources and entering into long-term contracts for existing resources.

c. Reputation

Reporting and communication
Critical media reports or defensive communication by the Group in relation to its CO_2 emissions, reduction targets and the decarbonization strategy might lead to reputational damage and, as a consequence, to reductions in the demand for the Group's products. The Group counters the risk through regular communication of its carbon footprint, emission reduction targets, and electrification and decarbonization strategy in the annual and sustainability reports and in its stakeholder management. In addition, the Group promotes the credibility of communication content of this nature through quality assurance measures as part of internal auditing of the Group and through embedding its decarbonization targets and management systems.

II. Physical risks

a. Acute

Extreme weather events
Extreme weather events in the form of floods, hurricanes and the like may cause disruptions of our own ability to operate or of the supply of critical input factors such as semiconductors or battery systems as key components of electrification. These may lead to production stoppages and thus have financial ramifications for the Group. The Group counters risks caused by extreme weather firstly through adapted business continuity management and secondly through allocation strategies for distributing production-critical input factors to the brands accompanied by a prioritization of components and through the intensification of business relationship management with suppliers.

b. Chronic

Water availability
If the climate impacts water availability, this may lead to a need for site-related investments or cause added costs as a result of any adjustment measures needed or alternative supply routes. The Group counters this risk by assessing the climate-related vulnerability of production sites and deriving appropriate countermeasures using environmental analyses.

Rising sea levels
The rise in sea levels may be accompanied by permanent flooding of low-lying coastal areas and increased threat by storm surges in coastal areas, particularly if these are not well enough protected. The Group's production sites near to the coast run the risk of being affected by business interruptions with increasing probability and frequency, and consequently of being impacted by climate-related losses in value creation. The Group counters this risk through systematic analyses of the impact of climate change on its production sites in order to assess potential risks and derive recommendations for countermeasures.

III. Opportunities

a. Products

Sales potential
The transformation of transportation and the associated transition to lower-emission and electric mobility open up new sales potential for fuel-efficient vehicles, electric vehicles and other alternative drives. The Volkswagen Group is laying the groundwork to open up the sales potential of the transformation of transportation with its brands based on coordinated technology and product planning and the associated electric offensive.

b. Efficiency

Cost savings
Decarbonization measures can go hand in hand with tapping efficiency potential. These include, for example, measures for more efficient LED lighting, modernized heat supply and cooling at the sites or also optimized washing and drying processes in production. The Group identifies and taps such potential by systematically recording and assessing reduction measures to be implemented on the basis of various decision-making criteria as part of the decarbonization program. Furthermore, the Group has a tool that provides additional incentives for implementing efficiency measures in the form of its CO_2 fund.

c. Market

Capital market performance
A positive performance on CO_2 and reporting in line with capital market requirements may positively impact rating outcomes and the Group's capital market conditions. ESG criteria are therefore an integral component of the NEW AUTO Group strategy with the aim of achieving sustainable improvements in capital market performance. Furthermore, the Group is gearing its reporting even more systematically to capital market requirements (e.g., TCFD). Volkswagen published its third Green Finance Report during the reporting year. The Green Finance Framework links our corporate objective of carbon neutrality by 2050 with our financing strategy.

d. Resilience

Climate-related adaptation measures
Implementing measures to adapt to the impact of climate change may strengthen the resilience of production sites – for example, against extreme weather events but also against chronic effects such as the rise in sea levels – and thus prevent business interruptions. For this reason, in a first step the Group conducted an analysis of physical climate risks for 33 EU-Taxonomy-relevant production locations, derived recommendations for implementing specific adaptation measures based on this and sent these to the individuals in charge locally for validation.

Scenario Analysis as a Decision-Making Basis for Climate Protection

Volkswagen uses model data and assumptions in a variety of contexts to make forward-looking statements. As a member of the Mobility Model (MoMo) working group of the International Energy Agency (IEA), we use, for example, IEA Energy Technology Perspectives scenarios (ETP scenarios), including the 2 °C scenario (2DS) and the beyond 2 °C scenario (B2DS).[1] We concentrate on the target year of 2030 here, which represents a milestone on the path to Group net carbon neutrality by 2050 and consequently acts as a reference for internal KPIs.

[1] According to the IEA, the 2DS sets out a transformation pathway for the energy sector consistent with at least a 50% chance of limiting the average global temperature increase by 2100 to 2 degrees Celsius. The B2DS examines the extent to which the use of existing or future technologies could limit the average global temperature increase to 1.75 degrees Celsius.

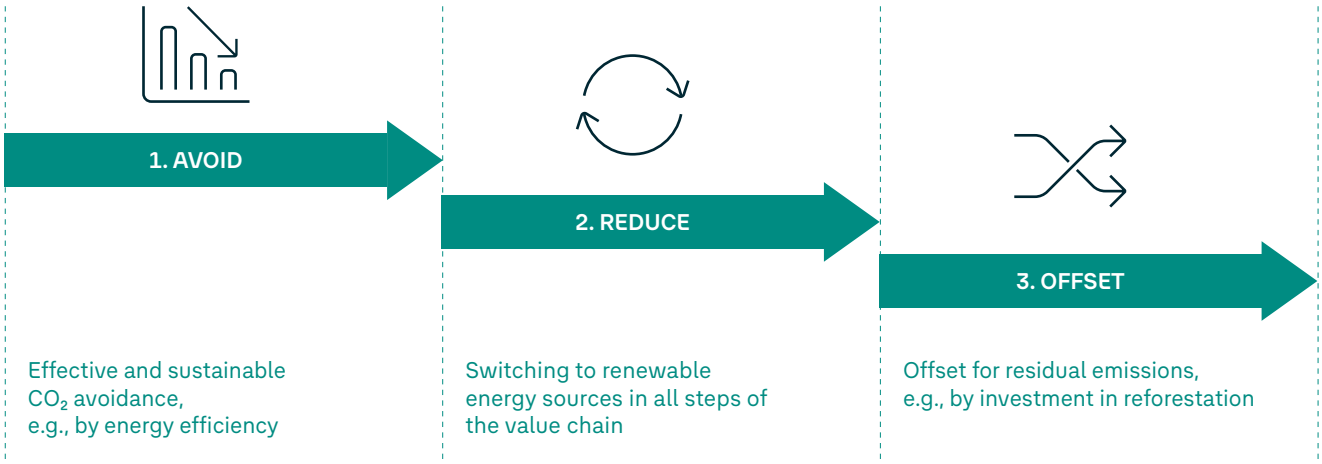
The scenario analysis focuses on the areas of production, sales and technology, the impact of products, and materials procurement. It shows that a significant reduction in emission intensity per vehicle is needed to achieve the UN climate goals, particularly in view of increasing unit sales. At the same time, the importance of electrification will grow considerably. In passenger cars and light commercial vehicles, combustion engines will, however, retain more than half the market share through 2035 even in a B2DS.

We use the analysis results to make decisions regarding our sales planning and materials production – e.g., through their integration into our DCI scenarios. The market- and product-related results support and affirm our decision reinforced by the NEW AUTO Group strategy to invest decisively in electric mobility and in increasing the efficiency of the internal combustion powertrain.

Decarbonization Program Takes Account of the Entire Life Cycle

Our comprehensive decarbonization program includes the whole life cycle of the vehicles and is characterized by a clear hierarchy of measures: The top priority is measures with which CO_2 emissions can be avoided. In second place follow measures with which we can gradually shift the energy supply in all steps of the value chain to renewable energy. Finally, unavoidable CO_2 emissions are offset in selected cases through climate protection projects that meet the highest international standards.

Prioritization of Decarbonization Measures



Internal CO_2 Pricing as a Decarbonization Tool

We want to integrate emissions-related risks into strategic decision-making processes as far as possible and optimize reduction paths of CO_2 fleet compliance. To this end, when managing the portfolio, we work with shadow prices and internal emissions trading. In the decarbonization program, we assess the efficiency of reduction measures using abatement costs and aggregate these in an abatement cost curve. As part of this, we are currently working with an internal carbon price or abatement costs of up to €20 per metric ton of CO_2. This figure is reviewed annually based on target achievement and adjusted by a resolution of the Board of Management. The cost rate in the reporting year has not changed compared with the previous year.

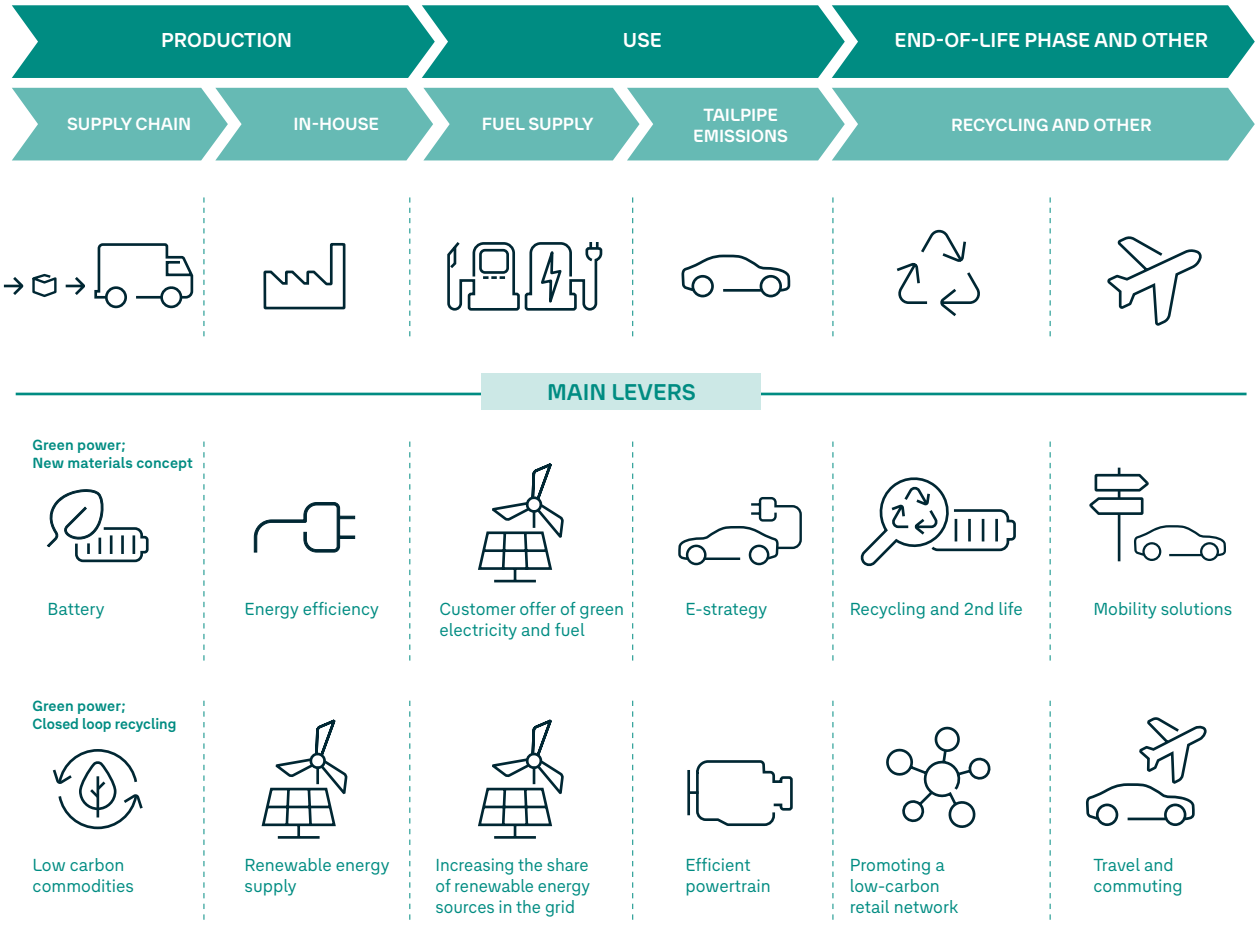
No Decarbonization without E-Mobility

From today's perspective, around 90% of the decarbonization targeted by the Volkswagen Group can be realized through electrification of the fleet and switching to renewably generated energy. Electric vehicles therefore play a key role in this context. These do not cause any local emissions during use – and therefore have an advantage compared to cars with combustion engines in terms of tailpipe emissions. The same applies to the entire life cycle: Current calculations show that the carbon footprint of electric vehicles is already better on average in Europe in most markets than comparable gasoline or diesel vehicles.

The consistent electrification of our vehicle fleet opens up the path to net carbon-neutral mobility for our customers. The new electric vehicles are manufactured at 18 sites in Europe, China and the US. The modular electric drive matrix (MEB) serves as the technical backbone of the e-offensive and is used in many more of our electric models. In the second half of the decade, the e-offensive will be supplemented by the Scalable Systems Platform (SSP).

2023 saw the market launch of additional e-models from various brands, including the Volkswagen ID.7 and the ID. Buzz LWB (long wheelbase). In addition, some models have been upgraded in terms of their sustainability and efficiency. These include the Volkswagen ID.3, ID.4 and ID.5, the Tiguan eHybrid and the Škoda Kodiaq. Moreover, the all-electric compact car ID.3, for example, is delivered in a net carbon-neutral way. In addition, the vehicle interior of the ID.3 will now no longer include materials of animal origin. The ID.4 and ID.5 have a more powerful and efficient electric drivetrain that has up to 60 kW more power, whereas the third-generation of the Tiguan eHybrid now has an all-electric range of up to around 100 km thanks to a larger battery and higher charging capacity. And for the second generation of the Škoda Kodiaq, we are also offering a plug-in hybrid drive for the first time.

Decarbonization along the Life Cycle



Net Carbon-Neutral Use Phase Thanks to Renewable Energy
It is important to us to make in particular the use phase of our vehicles net carbon-neutral in the long term. This is because around 75% of a car's CO_2 emissions arise in use ("well to tank" and "tank to wheel"). E-vehicles and consistent charging with 100% renewably generated electricity play a key role in achieving carbon-neutral e-mobility. That alone would reduce all CO_2 emissions by almost half compared to the normal EU power mix. Thanks to the supply of electricity from 100% renewable sources organized by VW Kraftwerk across Europe, we can provide almost net carbon-neutral mobility for the entire e-vehicle fleet even during the use phase.

Volkswagen Supports the Construction of Wind Farms and Solar Parks
The Volkswagen Group is the first automotive manufacturer to directly support the expansion of renewable energy on an industrial scale. New wind farms and solar plants are to be created in various regions of Europe by 2025. In Germany, Volkswagen holds a stake in a solar plant with typical generation capacity of 0.17 terawatt hours (TWh) each year. The plant in Tramm-Göthen in Mecklenburg in northeastern Germany has nearly 420,000 solar modules and is thus one of the largest independent solar projects in Germany. In Sweden, for example, Volkswagen has a 70% involvement in a wind farm with typical generation capacity of around 1 TWh per year. The plant, which is near Stockholm, is one of the largest onshore wind farms in Europe. In Spain, Volkswagen is involved in a solar park with 50 MW of installed capacity. The solar park has typical generation capacity of 0.1 TWh per year.

It is planned that all projects together will generate around 7 TWh of additional green electricity by 2025. This means that emissions from our e-vehicle fleet's use phase can be reduced in net terms.

Clear Requirements for Decarbonization in the Supply Chain
The Volkswagen Group's decarbonization begins in our supply chains. During the transition to electric mobility, higher CO_2 emissions will initially arise there, and shares from the use phase will shift to production. Against this background, we are systematically identifying the biggest drivers of CO_2 emissions in the supply chain and defining measures to reduce them. The difficulty of raw material extraction and the energy-intensive processes in manufacturing batteries are key drivers here. Around a third of CO_2 emissions that arise when manufacturing an electric car come from manufacturing high-voltage battery cells. All suppliers (new contract awards) of high-voltage batteries are already contractually obliged to use certified power from renewable sources in their production processes. In addition, there are further requirements for upstream stages of the value chain, such as the CO_2 limits explained in the following paragraph. CO_2 emissions in battery manufacturing are therefore falling. More information on decarbonization measures in the upstream levels of the value chain can be found in the Supply Chain and Human Rights chapter.

→ Supply Chain and Human Rights

For new vehicle projects, the Volkswagen Group is going to make CO_2 emissions a technical feature for relevant components in the future. This means that we will set binding CO_2 targets for suppliers, and they must be able to prove compliance with these at all times. One example concerns the new SSP mechatronics platform. For example, the SSP platform's batteries have a CO_2 limit. To be able to achieve these limits, suppliers need to implement measures in their own production processes and pre-supply chains – for example, the use of renewable energy. Measures like these can reduce the carbon footprint of many electric vehicle models. For the ID. models, the Volkswagen Passenger Cars brand will use additional sustainable components, including battery cases and wheel rims made of CO_2-reduced aluminum. In this way, the ID. family's carbon footprint can be improved by around two metric tons per vehicle in the next years.

Volkswagen Group China[2] is also working together with its suppliers on a more sustainable supply chain. For example, together with suppliers and partners, the group is developing a roadmap for switching to 100% renewable energy by 2030. To date, more than 500 suppliers have already signed a declaration committing to switching to electricity from renewable energy sources.

Capacity for Battery Manufacturing Further Increased
The Volkswagen Group is one of the few automotive manufacturers around the world that is taking the battery as a core e-mobility technology into its own hands – from the procurement of raw materials to recycling. PowerCo SE means the development and production of our own battery cells is integrated into the value chain and a significant part of the added value of the e-vehicle is thus kept within the Group.

Through PowerCo Volkswagen is creating a global supplier in the battery business that supports the e-offensive through technological independence and opens up a lever for reducing cell costs. We are expecting greater flexibility and economies of scale from the strategic key concepts of a unified cell, a standard cell factory, and vertical integration.

[2] Including Chinese minority shareholdings.

In the reporting year, three Group-owned sites for battery cell production were already under construction: the main plant in Salzgitter with planned start-up in 2025, Valencia in Spain (2026) and St. Thomas in Canada (2027).

The total production potential is a prospective capacity of up to 200 gigawatt hours (GWh). All sites are consistently operated with electricity from renewable sources. In Spain, an adjacent photovoltaic park will cover up to 30% of the electricity needs on 250 hectares of land.

The PowerCo cell factories have been designed on the basis of a technology matrix that will factor in more than 30 foreseeable product and process innovations by the end of the decade. These include, for example, more sustainable cell chemicals without cobalt or nickel, solid-state technology or significantly faster stacking processes for electrodes.

PowerCo has made an important step on the way to sustainably producing its own battery cells through successful tests of the new dry coating production process, which can save around 30% of the energy used for cell manufacturing, 15% of the factory space and manufacturing costs running into millions. PowerCo is working with, for example, German printing machine manufacturer Koenig & Bauer AG on further developing and industrializing this manufacturing process. With dry coating, there is no need for electrodes to be wet-coated and then undergo a lengthy drying process. This means that not only is the most energy-intensive part of current cell manufacturing unnecessary, so is the use of large quantities of chemical solvents.

In the future, the PowerCo cell factories will be designed to maximize material use within production through close-to-production recycling of production surpluses (scrap and end of line). In addition, the Group and PowerCo also focus on systematic end-of-life recycling and the use of recycled materials. You can find further information on the battery raw materials closed loop in the Circular Economy chapter.

→ Circular Economy

For the supply of raw materials, PowerCo relies on three instruments: long-term supply contracts, investments with partners in PowerCo's own mines, and procurement on the spot market – with financial hedging. Because the Group is set to cover more than half of its raw materials requirements itself or purchase them directly in the future, it will have a much more direct lever for improving mining conditions than most of its competitors.

Responsible raw materials procurement is also the basis of the IONWAY joint venture that PowerCo founded with Belgian materials technology group Umicore. The partners aim to grow annual cell production capacity for cathode material and precursor materials to 160 GWh by 2030 – enough for 2.2 million battery-electric vehicles. Cathode active materials are the key technological lever for battery performance. They are the single biggest contributor to overall battery cost and define its carbon footprint. IONWAY is to supply PowerCo's European battery cell factories with key battery materials and cover a large part of PowerCo's EU demand. This should accelerate the creation of regional, sustainable and transparent value chains for batteries and help the EU achieve its Green Deal targets. The first site for the production of cathode material is Nysa in Poland, where around 900 jobs will be created by 2030.

Zero Impact Logistics

In the joint Zero Impact Logistics initiative, the Group and brand logistics departments work together to achieve the goals of the goTOzero environmental mission statement. Continuously optimizing the transport network and logistics processes means transportation can be avoided and emissions reduced – including by means of digitalization. In addition, the use of new, low-emission technologies for transporting production materials and vehicles is analyzed, piloted and accelerated.

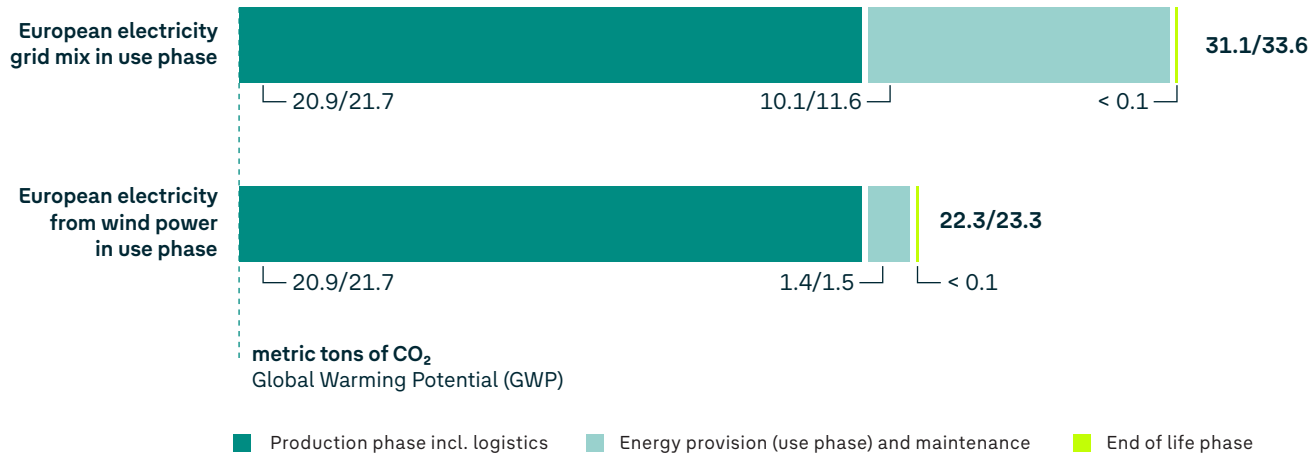
The measures the Volkswagen Group is taking to achieve future carbon-neutral logistics include, for example, moving shipments from road to rail and almost complete CO_2 avoidance through the use of green power in rail transport in Germany and other countries in collaboration with rail transportation companies. Volkswagen also transports high-voltage batteries for electric vehicles in an environmentally conscious and efficient manner, for example at the Volkswagen component site in Braunschweig. The batteries are fully automatically loaded onto trains there and then transported to the Volkswagen plant in Zwickau using electricity from renewable sources.

To transport vehicles across the North Atlantic, Group Logistics uses two roll-on/roll-off charter ships powered by low-pollution liquefied natural gas (LNG). Since the end of 2023, it has successively put four more car carriers with the same propulsion system into operation on this route and thus replaced conventionally powered ships. Group Logistics' charter ships are more climate-friendly than other LNG-fueled marine engines because the high-pressure technology of the two-stroke engines from MAN Energy Solutions

allows almost no methane to escape. The dual-fuel engines will also enable non-fossil fuels such as biogas (bio-LNG), e-gas (synthetic gas) based on renewable sources or biofuel to be used in the future. This means carbon emissions can be reduced even further. Group Logistics also sees further carbon reduction potential in the long term from the use of other alternative fuels.

It permanently operates two charter ships on European sea routes using biofuel, which produces less CO_2 than conventional fossil fuels. The raw material for the biofuel is provided by used cooking oils and fats. These are waste and residual materials from the catering and food industries, which, for example, cannot be used for further processing into food or animal feed.

CO_2 Emissions by Life Cycle Phases (ID.7 Pro, Standard/Maximum)



An overview of the technical details of the life cycle analysis of the ID.7 Pro is available in the Green Finance Report.

→ www.volkswagen-group.com > Green Finance Report

Contribution to Climate-Friendly Logistics outside the Group

Beyond its own value chain, the Volkswagen Group also wants to advance decarbonization in other industries together with MAN Energy Solutions. For example, the Group also supplies the shipping and energy industry with engines that can be powered by climate-neutral fuels or converts diesel or heavy fuel oil engines to future fuels. The product portfolio is rounded off with solutions in areas including carbon capture, utilization and storage; hydrogen; and heat pump technology.

Climate Protection in Manufacturing

Volkswagen wants to reduce greenhouse gas emissions in production by 50.4% in absolute terms compared to 2018 by 2030. According to the Science Based Targets initiative (SBTi), this corresponds to a 1.5 °C target path. By 2023, absolute greenhouse gas emissions had already been decreased by 33.7% compared with 2018. Key to this are increasing energy efficiency and switching to a renewable power supply as important components of the decarbonization strategy. The Volkswagen Group has set itself the goal of implementing energy efficiency measures from 2018 to 2030 that save a total of 4.9 million MWh of energy at the production sites. By 2023, 7,822 measures totaling 3.0 million MWh had already been implemented.

Volkswagen is also paying particular attention to converting its own electricity generation. For example, the conversion of the power plants in Wolfsburg from coal to natural gas for the Wolfsburg-Nord/Süd cogeneration plant, which commenced in 2018, was completed at the end of 2021. The trial operation of the new gas and steam turbine facilities in the Wolfsburg-West cogeneration plant began in 2023. The decommissioning of the coal units in the Wolfsburg-West cogeneration plant is planned for March 31, 2024. Volkswagen believes that the originally announced annual savings of 1.5 million metric tons of CO_2 can be realized annually from the second quarter of 2024.

Further progress is being made in supplying plants with electricity from renewable energies. For example, the percentage of electricity purchased externally rose from 99.6% to 100% at EU production sites within one year. By 2030, the same target is planned for all global sites.[3] Volkswagen is also driving the energy transition at its own sites. For example, we have set ourselves the goal of generating 1.2 million MWh of power from renewable energies ourselves or in the immediate vicinity of the production sites by 2030. In 2023, 478,634 MWh of electricity was already generated from renewable energy in this way. To date, 56 Group production sites have been supplied with external electricity from 100% renewable energy sources. Of these, 39 sites are within the EU and 17 sites are outside the EU.

In 2023, 56.3% of the Group's total global electricity consumption at its production sites (including China) was accounted for by electricity from renewable sources. Compared with the previous year, this is a rise of 1.5%. As a result of our efforts in energy efficiency and renewable energy supply, we already operate eight production sites on a carbon-neutral basis (taking offset measures into account). These are the sites in Brussels and Győr (Audi), Zwickau and Dresden (Volkswagen), Zuffenhausen and Leipzig (Porsche), Crewe (Bentley) and Vrchlabí (Škoda). You can find further information on the certifications of our production sites' energy management systems (pursuant to ISO 50001 and ISO 14006) in the Environmental Compliance Management chapter.

→ Environmental Compliance Management

Expanding Fast-Charging Infrastructure for Passenger Cars

The Volkswagen Group further expanded its global fast-charging infrastructure in the reporting year. The Volkswagen Group's global charging and energy business has been under new management since July 1, 2023. The Group function is playing a leading role in driving the expansion of the fast-charging network and the establishment of Volkswagen's own smart energy platform. In the course of a strategic realignment, the Charging and Energy division also wants to strengthen cooperation between the Group brands and create even more closeness to private and fleet customers.

→ **More than**

600,000

charging points for e-vehicles across Europe

The Volkswagen subsidiary Elli is one of the largest mobility service providers in Europe. In the reporting year, Elli significantly expanded its European charging network. Elli customers can now charge their e-cars through around 900 different providers in 27 European countries irrespective of brand. Throughout Europe, the Group already offers its customers access to more than 600,000 charging points with its Elli brand as a mobility service provider. The focus is increasingly on not only the quantity but also the quality of the charging network. With this in mind, Elli now offers its customers access to the so-called Selected Partner Network – a network of charging point operators that have been selected according to comprehensive quality criteria. The result is charging stops that combine high-performance charging infrastructure, on-site convenience (e.g., cafés, restaurants, sanitary facilities) and excellent operational reliability.

Elli Fleet Charging, an intelligent software solution for managing charging for electric vehicle fleets in Europe, was launched in the reporting year. Companies can use it to cost-optimize the charging of their entire electric vehicle fleet and make the best use of Elli's own infrastructure and public charging infrastructure. In a market introduction phase lasting several months, around 650 German companies and fleet managers have already successfully used Elli's product.

[3] Sites in China: 100% renewable/net carbon-neutral energy supply.

In 2023, Elli also introduced an easy-to-install charging station: the Elli Flexpole. Thanks to the integrated battery system, it can be connected to the low-voltage network without a special transformer or expensive construction work being required. Depending on the vehicle, the charging station charges a range of up to 160 km within ten minutes. In addition, Elli was admitted to trading on the largest European power exchange, EPEX Spot, in the reporting year. The basis for this is a stationary storage system that, in the future, will store the energy traded on the electricity market and a new, digital energy trading platform. For Elli, these are key steps on the path to the planned smart energy platform.

Together with other original equipment manufacturers (OEMs), Volkswagen founded the joint venture IONITY in 2017. IONITY set up 2,800 fast-charging stations on major highways across Europe by the end of 2023. Along with its partners, the Group wants to operate around 18,000 public fast-charging points in Europe by 2025 – five times as many as today and about one third of the total demand predicted for 2025 on the continent. This will be achieved through a series of strategic partnerships in addition to IONITY:

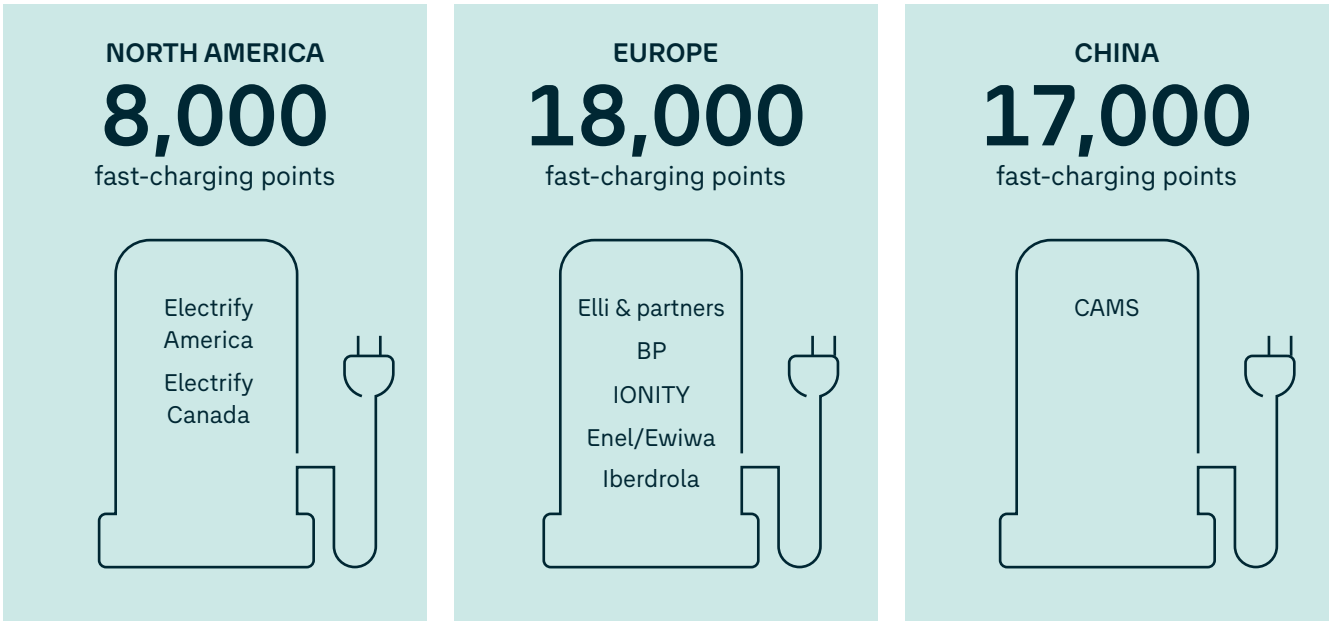
- BP wants to build fast-charging points across Europe with Volkswagen, including in Germany, the Netherlands and the UK – further markets will follow.
- Shell is going to install Elli Flexpole fast-charging points in various European markets.
- E.ON plans to expand its charging infrastructure network with the Elli Flexpole and wants to make the flexible fast-charging solution available to its customers to buy as well.
- In cooperation with Iberdrola, Volkswagen will, in particular, cover main traffic routes in Spain.
- In Italy, Volkswagen is collaborating with Enel X Way to establish a nationwide high-power charging network (Ewiva).

Volkswagen plans to expand the public fast-charging network in the US and China too:

- In North America, Electrify America's charging infrastructure is to be expanded to more than 8,000 locations by 2025.
- In China, Volkswagen is planning a total of 17,000 fast-charging points by 2025 through the CAMS joint venture.

By 2025, we and our partners plan to create a total of more than 40,000 fast-charging points in Europe, China and the USA. Around half of them are already active. Volkswagen wants to spend about €400 million for the European program as a whole by 2025.

Fast-Charging Points by 2025



Pilot Projects for Smart Network Integration
Volkswagen plans to integrate the electric car into private, commercial and public energy systems in the future. This will allow green power from the solar energy system to be stored in the vehicle and fed back into the home network if needed. The Group has already launched several pilot projects in connection with this. For example, Elli and the regional distribution grid operator MITNETZ STROM trialled the smart network integration of e-vehicles in Saxony from July to September 2022. At the start of 2023, those involved reached a positive verdict: Smart network integration increases the proportion of electricity from renewable energy sources fed into the grid, reduces the cost of charging e-vehicles and takes pressure off local power grids.

TRATON SE Makes Charging Electric Trucks Easier
TRATON SE has been offering its brands' customers access to charging stations with a new service, TRATON Charging Solutions AB, since 2023 – making it easier for them to switch to battery-electric commercial vehicles. The service comprises the currently largest network of public charging stations in 12 European countries and bundles contracting, invoicing, route planning and utilization information. Through this new service, TRATON SE wants to help meet the growing demand for charging facilities outside depots that comes with the rise in electric commercial vehicles.

Increasing Vehicle Efficiency
Options in the system are intended to promote the efficiency of vehicle operation in terms of energy consumption. For example, driving mode selection supports fuel-efficient driving via one option. In addition, in the case of manual-transmission vehicles, there are recommendations for changing gear, the selection of environmental route planning in navigation systems and tips for saving gasoline.

Carbon-Neutral Delivery of Electric Vehicles
In 2022, we decided to take the voluntary measure of making the delivery of a number of the Group's electric vehicles to our customers in Europe carbon-neutral. In this way, we want to make almost completely net carbon-neutral mobility possible for them, providing they choose a contract for renewable energy for charging the vehicle. For as long as we cannot avoid CO_2 emissions and cannot use renewable energies everywhere, we will do this by voluntarily offsetting the remaining greenhouse gas emissions from our supply chain, production and logistics. This applies to MEB vehicles from the Volkswagen Passenger Cars, Volkswagen Commercial Vehicles, Audi, SEAT and Škoda brands in Europe. We expect the need for offsetting to increase for the next few years as a result of electrification and net carbon-neutral delivery in Europe. In 2023, this amounted to 8.45 million metric tons of CO_2 for the Group.

As part of net carbon-neutral delivery, we offset unavoidable emissions from the life cycle phases, such as from the supply chain or production, through climate protection projects with high certification standards. These include the Verified Carbon Standard (VCS), the Climate, Community and Biodiversity Standards (CCB Standards) or the Gold Standard. In addition to external certification standards, we also assess offsetting projects for quality assurance in accordance with our own criteria, which are outlined in the next but one paragraph.

Decarbonization of the Dealer Networks
To ensure high proximity to customers, the Volkswagen Group's sales network extends globally to more than 150 markets with more than 17,000 dealer and service locations. However, this is associated with CO_2 emissions. As part of the goTOzero retail project, the Volkswagen Group is working on decarbonizing the entire sales network and increasing the network's ESG performance. Since it was set up in 2021, the cross-brand team behind goTOzero retail has already achieved important milestones. For example, a target pathway for decarbonization was defined and has been confirmed by the competent committee. Accordingly, the entire dealer network's carbon footprint is to be reduced by at least 30% by 2030, at least 55% by 2040 and at least 75% by 2050 – taking 2020 as the baseline. These targets are to be achieved through appropriate reduction measures. In a final step, residual CO_2 emissions will be offset. Since 2022, the carbon footprint of the entire dealer and service network has been recorded annually in the "Franchises" category of Scope 3 GHG emissions.

To identify and successfully implement the correct measures for decarbonization, the businesses have manuals, training and marketing materials available to them, such as a comprehensive guidebook, web-based training and videos on communication with customers. In addition, the project team has developed a cross-brand certification system for the entire dealer network: the goTOzero retail certification, which is based on established systems such as the ISO 14001 standard, building certifications and rating systems. It has been used in 11 markets since 2023. From 2024, all 50 key dealer markets will successively be included in the certification. They cover 95% of the global dealer and service network. An energy and resource consulting concept is currently being developed. This will be available to all markets and partner companies from 2024. The Volkswagen Group aims for the highest possible energy efficiency and the use of renewable energy for newly constructed and existing buildings to the extent this is economically and technically feasible. Progress on the goTOzero retail project is regularly communicated internally and externally.

Joint Venture for Offset Projects
We consider protecting natural carbon sinks to be an important task. Measures in this area should be both scalable and able to guarantee the additionality and permanence of atmospheric carbon sequestration. To underpin our commitment to climate protection projects and be able to develop our own projects in accordance with the highest standards, VW Kraftwerk GmbH and ClimatePartner GmbH have established a joint venture (JV): Volkswagen ClimatePartner GmbH. It develops and funds certified climate protection projects that serve the recognized offsetting of CO_2 emissions. One key requirement for all projects is that they meet the highest quality standards. For this reason, the JV also takes control with regard to quality assurance. Core aspects include additionality, accuracy and permanence of the emission reductions, the socioeconomic and environmental advantageousness for the region, and regular audit by independent third parties. The initial project standards are the Verified Carbon Standard and Gold Standard. The JV commenced its operational work in 2022 and is focusing on forest protection projects and nature-based solutions. It is accompanied by a specially established independent project advisory board.

→ Volkswagen ClimatePartner GmbH

Expanding Capital Expenditure and Partnerships

No single company can solve the great challenges of our time alone. This requires solid partnerships and cross-sector alliances. The Volkswagen Group also relies on collaboration with third parties in the context of decarbonization.

Promoting Innovations: Confirmation and Expansion of the Collaboration with EIT InnoEnergy
In addition to its own activities, Volkswagen is increasingly focusing on collaboration with innovative start-ups to promote new technologies and business models. For example, in the reporting year, we further expanded the strategic partnership we initiated in 2021 with EIT InnoEnergy SE, a world-leading innovation driver for the energy and mobility transition. This new capital expenditure continues our successful collaboration and will help accelerate innovation in the areas of e-mobility and renewable energy.

Volkswagen Group Innovation Becomes New Member of the MIT Future Energy Systems Center
Since the start of 2023, Volkswagen Group Innovation has been a member of the Future Energy System Center of the Massachusetts Institute of Technology Energy Initiative (MITEI). The aim is to facilitate intensive dialog between MIT's lecturers and researchers and the member companies to address urgent challenges in the energy sector and develop solutions for decarbonization. The center pursues a range of research activities geared toward the development of the electricity sector and the mobility transition.

Strategic Cooperation with Chinese E-Car Manufacturers
The Volkswagen Group announced two partnerships in China in the reporting year: a strategic cooperation between the Volkswagen Passenger Cars brand and XPENG, and the expansion of the existing collaborations between Audi and SAIC. This further advances our local electrification strategy as part of the "In China for China" strategy, paving the way for the joint development of intelligent, fully connected electric vehicles for the Chinese market. The China-specific vehicles supplement the existing product portfolio. The aim is to open up new customer and market segments in the Chinese market and thus exploit the potential of China's dynamically growing electric market.

Driving Decarbonization: Venture Capital Fund
Volkswagen has additionally been investing in decarbonization within and outside the Group since 2023 with a venture capital fund. The fund has a volume of $300 million and is intended to promote innovation along the entire mobility value chain. Innovation solutions are considered for all areas that have a measurable impact on CO_2 savings – from supply chain and production topics to battery development and sustainable materials. The fund primarily invests in early- and growth-stage start-ups in the US and Europe (including Israel). It was set up with a term of ten years, which is customary in the market, and is managed by an independent management team. In addition to Volkswagen, the fund will also be open to other selected investors.

Making the EU a Pioneer for Climate Protection: Involvement in the CEO Alliance
Volkswagen is a member of the CEO Alliance for Europe's Recovery, Reform and Resilience, a pan-European and cross-sector alliance of large corporations based in Europe that expressly support the EU's Green Deal and the associated climate protection targets. The CEO Alliance supports the goal of making the EU the leading region in the world in climate protection, accelerating investment, driving innovation and thus creating future-proof jobs.

GRI 305-1, 305-2, 305-3, 305-5

Nine member companies are currently working on a range of projects. These include a commitment to CO_2-neutral company buildings by 2030, the development of a charging network for heavy goods vehicles on certain freeways in Europe, a project on energy storage in buildings and one on the value chain for green hydrogen. The CEO Alliance also supports the European Commission's Fit for 55 program and is proposing rapid measures for decarbonizing mobility and transport, the transformation of the building sector and a rapid decarbonization of the energy system in the EU. The CEO Alliance also expresses support for carbon pricing across industries and countries and is calling for political decision-makers in Europe to set a strong price signal and continuously develop the EU emissions trading system.

Defining and Pursuing Ambitious Decarbonization Targets

The Volkswagen Group wants to become a net carbon-neutral company by 2050. To achieve this goal, offset action is also planned alongside carbon reduction measures and converting to renewable energies.

→ 50.4%

reduction targeted in production-related CO_2 emissions by 2030.

The Group has set itself the objective of reducing CO_2 emissions from the production of its passenger cars and light commercial vehicles by 50.4% by 2030 – compared with the base year of 2018. The Science Based Targets initiative (SBTi) confirmed to the Volkswagen Group in the reporting year that the Company is fulfilling the conditions for limiting global warming to 1.5 degrees Celsius with its objective for the production phase (Scope 1 and 2). Group-wide production also makes a contribution to achieving Volkswagen AG's overall climate goals with its stricter CO_2 saving targets. SBTi has confirmed the aim of reducing CO_2 emissions by 30% in the use phase (Scope 3) to the Volkswagen Group as in line with the limitation of global warming to two degrees Celsius. By 2030, the Group wants to emit 30% less CO_2 on average per vehicle (passenger cars and light commercial vehicles) over the entire life cycle than in 2018. The targets are to be achieved through pure CO_2 reduction.

Decarbonization targets were also formulated in the area of heavy trucks and buses, and these represent sub-targets for the Group. For example, Scania is committed to reducing its absolute Scope 1 and Scope 2 greenhouse gas emissions by 50% by 2025 compared with the base year of 2015. In 2022, the company also announced its intention to decarbonize its supply chain as far as possible by 2030. This involves the most important production materials and largest sources of emissions: batteries, steel, aluminum and cast iron. The Scope 3 greenhouse gas emissions from the use of vehicles sold are to be reduced by 20% per vehicle kilometer by 2025 at Scania, also compared with a 2015 baseline. The SBTi confirmed to Scania that these targets are at a level that allow global warming to be limited to 1.5 degrees Celsius. MAN also received SBTi certification of its decarbonization target in the reporting year. Compared with 2019, by 2030 the Group wants to reduce its Scope 1 and Scope 2 emissions by 70% and its Scope 3 emissions by 28%. In addition, Scania and MAN have committed to the SBTi's Net-Zero Standard. Volkswagen Truck & Bus and Navistar have also set reduction targets and are working on having these validated by the SBTi.

Decarbonization Index for Target Achievement Measurability
In the DCI, we have a meaningful measuring instrument that makes our progress and interim results in this area public and verifiable. The DCI is calculated on the basis of emissions of CO_2 and CO_2 equivalents (jointly referred to as CO_2e) by the brands that produce passenger cars and light commercial vehicles in the regions of Europe (EU27, United Kingdom, Norway and Iceland), China (including the Chinese joint ventures) and the USA over the entire life cycle. The use phase is calculated over 200,000 km and with reference to region-specific fleet values without legal flexibilities. The intensity of the CO_2 emissions from the electricity used to charge electric vehicles is also calculated on the basis of region-specific energy mixes. Maintenance of the vehicles is not taken into account here. Our vehicle life cycle assessments, which are used as the data basis for calculating supply chain and recycling emissions, have been verified externally and independently in accordance with the ISO 14040 and ISO 14044 standards. Scope 3 also includes emissions from additional Group entities and regions in some categories that are not directly product-related.

GRI 305-1, 305-2, 305-3, 305-4, 305-5

The DCI calculation methodology is regularly adjusted depending on internal and external requirements, such as new test cycles for fleet emissions. In order to present a methodologically consistent time series, published DCI values may therefore also be adjusted to the new methodology and thus changed.

→ The **DCI** measures the average emissions of CO_2 and CO_2 equivalents of the brands of the Europe (EU27, UK, Norway and Iceland), China and USA regions that manufacture passenger cars and light commercial vehicles over the entire life cycle and is expressed in metric tons of CO_2 per vehicle. It includes not only the direct and indirect CO_2 emissions of the individual production sites (Scope 1 and 2) but also other direct and indirect CO_2 emissions in the life cycle of the vehicles and beyond (Scope 3).

In the reporting year, the DCI value averaged 47.3 metric tons of CO_2 per vehicle. This represents a reduction of 0.5 metric tons of CO_2 per vehicle compared with the previous year. This is primarily due to lower emissions in the use phase as a result of, for example, the increase in the share of electric vehicles. The electrification of the portfolio combined with the use of renewable energies in production and the use phase is thus showing an impact.

For 2024, Volkswagen plans to adjust the CO_2 figures reported for the base years. The Greenhouse Gas Protocol provides for a recalculation of corporate emissions if there have been significant new findings or changes. There may be various reasons to recalculate the emissions of past years to enable a fair comparison with current emissions: structural changes in the Group, changes in the calculation method, increase in the precision of emission factors or activity data, findings regarding significant errors, etc. The Volkswagen Group decides calculation changes once a year in a predefined process. Based on these decisions, we are currently working on recalculating historical emissions for the baseline years of the current climate protection targets and having the recalculation audited. Examples of changes to the calculation assumptions for the DCI since 2018 that are currently being evaluated include: availability of region-specific life cycle assessments for the China market (since 2022), use of company-specific cutting rates for steel and aluminum components in production instead of generic data (since 2022 for aluminum and 2023 for steel), use of Worldwide Harmonized Light Vehicles Test Procedure (WLTP) instead of New European Driving Cycle (NEDC) consumption figures for the calculation of the use phase (since 2020), use of specific data for the emissions of Group franchises (particularly authorized Volkswagen dealers) instead of generic figures (since 2022), calculation of generic life cycle assessments with 0% recycled aluminum content (since 2022).

Transparency on CO_2 Emissions as a Basis for Improvements

Every year, we calculate the Group's carbon footprint using the Scope 1 to 3 inventory, in line with the requirements of the internationally accepted Greenhouse Gas Protocol (GHG Protocol). On this basis, we can determine the success of the measures we have put in place and identify other areas where we can take action.

Additional CO_2 offset projects – e.g., for the carbon-neutral delivery of electric vehicles – are not shown in the DCI or the Scope 1 to 3 inventory. The offset volume in the reporting period ran to around 9.0 million metric tons of CO_2. This equates to 1.2 metric tons of CO_2 per vehicle for all vehicles included in the DCI.

In line with the Scope 3 standards published by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI), we are reporting CO_2 emissions for 13 out of a total of 15 Scope 3 categories in 2023. According to this, around 22% of all Scope 3 emissions are in the "Purchased goods and services" emissions category, while 72% are in the "Use phase" emissions category (well to wheel). To calculate use-phase emissions in the DCI and in the Scope 3 GHG inventory, fleet values not including any legal flexibilities are used.

The calculation of CO_2 emissions in the use phase of the Scope 3 GHG inventory is based on a Group fleet value, which is represented by the new vehicle fleet (passenger cars and light commercial vehicles) in the three regions (Europe [EU27, UK, Norway and Iceland], the USA and China). In order to provide a picture that is as complete as possible, we also collect data on emissions in this category that are produced during the production and transportation of fuels ("well to tank" emissions).

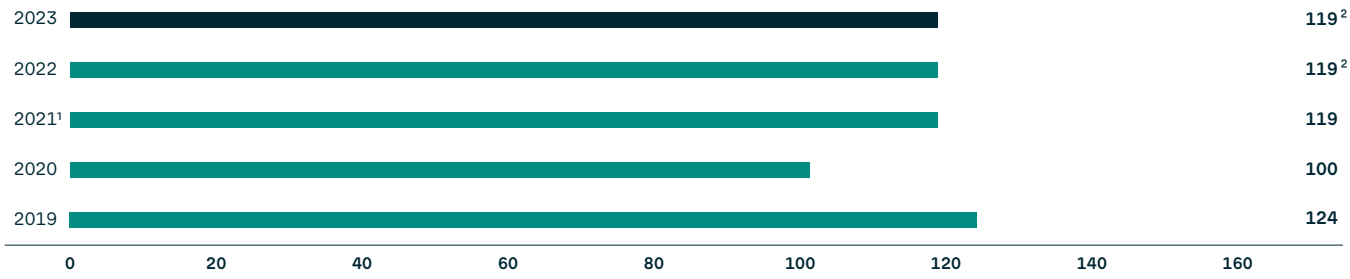
CO_2 Fleet Emissions in Europe (EU27+2)

We use the strategic indicator of CO_2 fleet emissions in Europe and the United States to evaluate the effectiveness of our measures to reduce CO_2 emissions emitted by our vehicles. The Volkswagen Group's new passenger car fleet in the 27 EU member states excluding Malta but including Norway and Iceland (EU27+2) emitted an average of 119 g CO_2/km (WLTP) in the reporting period in accordance with the statutory measurement bases. The statutory target is 122 g CO_2/km (WLTP). This means that the Volkswagen Group outperformed the EU's fleet CO_2 target. All the figures mentioned are subject to confirmation of the CO_2 data in the context of official publication by the European Commission. The targets will be tightened from 2025: The European Commission has thus set a target of a 15% reduction in CO_2 compared with 2021, which corresponds to a CO_2 target of less than 100 g CO_2/km for our EU new passenger car fleet. A 55% reduction has been set for 2030, which corresponds to a CO_2 target of less than 50 g CO_2/km. We assume that our new passenger car fleet in the EU will meet the target for 2025 and more than meet the target for 2030. A CO_2 reduction target of 100% for passenger cars has been set for 2035.

The Volkswagen Group's new light commercial vehicles fleet in the EU emitted an average of 187 g CO_2/km (WLTP) in the reporting period as per statutory measurements bases, compared with a statutory target of 204 g CO_2/km (WLTP). This means that the Volkswagen Group outperformed the EU's fleet CO_2 target. All the figures mentioned are subject to confirmation of the CO_2 data in the context of official publication by the European Commission. The targets will be tightened from 2025: The European Commission has thus stipulated a 15% reduction of CO_2 emissions compared with 2021, which corresponds to a CO_2 target of less than 180 g CO_2/km for our new light commercial vehicle fleet in the EU. A 50% reduction has been set for 2030, which corresponds to a CO_2 target of less than 105 g CO_2/km. We assume that our new light commercial vehicles fleet in the EU will meet this target for 2025 and more than meet the target for 2030. A CO_2 reduction target of 100% for light commercial vehicles has been set for 2035. In the United Kingdom and Switzerland/Liechtenstein markets, the Volkswagen Group's new passenger car fleet met the statutory requirements for the reporting period. The Volkswagen Group's new light commercial vehicle fleet met the statutory requirements for the reporting period in the United Kingdom but fell just short of those for Switzerland.

CO_2 Emissions of the Volkswagen Group's European (EU27+2) New Passenger Car Fleet

in grams per kilometer (WLTP)



[1] The European Commission switched its calculation of CO_2 fleet emissions from NEDC to WLTP in 2021.
[2] Subject to confirmation of CO_2 data within the scope of official publication by the European Commission.

CO_2 Fleet Emissions in the USA

In the United States, the emission pool – comprising the Group brands Volkswagen Passenger Cars, Audi, Lamborghini, Bentley and Porsche – commits to the Greenhouse Gas (GHG) and Corporate Average Fuel Economy (CAFE) regulations. Due to a model year – the accounting period used in the USA – differing in length from the calendar year, internal calculations are used to determine the figures for the current and preceding model year. The average GHG CO_2 value (internal data as of September 2023) for the passenger car and light commercial vehicle fleets in model year 2023 is 133 g CO_2/km (model year 2022: 142 g CO_2/km). The statutory target is 122 g CO_2/km (model year 2022: 136 g CO_2/km). Compliance with the statutory requirements of the GHG and CAFE regulations together with externally acquired credits enabled the Volkswagen Group to comply with the applicable requirements – subject to recognition by the authorities. The figure given for model year 2023 is also subject to recognition by the Environmental Protection Agency (EPA). We anticipate a CO_2 target of around 110 g CO_2/km in the USA for 2025 and therefore expect to be able to achieve this target. For 2030, we aim to increase the share of electric vehicles in our new vehicle fleet to significantly more than 50%, which would put us within the target range of the current administration.

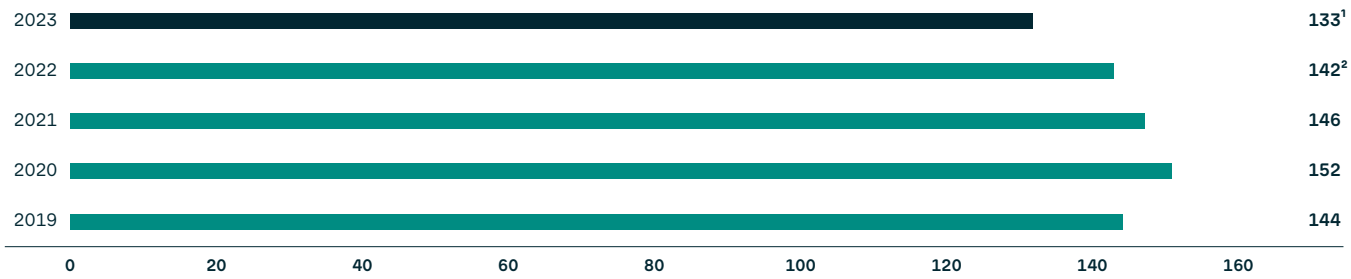
Achieving Decarbonization Targets

We have two levers in particular available to us to impact greenhouse gas emissions across the entire life cycle of Volkswagen products: the Group's electric offensive and the Renewable Energies strategy.

The Group Steering Committee for Fleet Compliance and a specially founded Decarbonization Project Center are responsible for strategy and target development and also for implementation of the program and fleet compliance. The Decarbonization Project Center includes experts from all brands and relevant departments. We use a predefined process overseen by the management of the Decarbonization Project Center and the Group Steering Committee for Fleet Compliance to check measures with which we can achieve the objective of decarbonization. All production locations and the brands and regions have prepared decarbonization roadmaps. The degree of target achievement is measured with a tracking system. If we miss our target, we implement corrective measures. TRATON SE's heavy commercial vehicles have a significant carbon footprint and are therefore part of a separate decarbonization program that is connected with the existing decarbonization program for passenger cars and light commercial vehicles via interfaces. The program and associated measures are intended to facilitate progress with reducing greenhouse gas emissions.

Volkswagen Group CO_2 Emissions according to the GHG Protocol for Passenger Cars and Light Commercial Vehicles in the USA

in grams per kilometer by model year



[1] Subject to submission of the final MY report MY23 and subsequent recognition by EPA and CARB (internal data as of September 2023).
[2] Subject to recognition by EPA and CARB (final MY report MY22 submitted but not yet confirmed).

Decarbonization KPIs	Unit	2023	2022	Notes and comments
Decarbonization index[1] | *GRI 305-4* WLTP strategic KPI	in metric tons of CO_2/ vehicle	47.3	47.8 (48.0)	The KPI includes passenger-car manufacturing brands and light-commercial-vehicle-producing brands in the Europe (EU27, United Kingdom, Norway and Iceland), China and USA regions. In particular, savings in the use phase (for example, due to the increased share of electric vehicles) have led to a reduction in the DCI by 0.5 metric tons of CO_2/ vehicle. The DCI for 2022 and 2023 is reported without taking offset measures into account. To enable comparability, the DCI reported in 2022 (48.0 metric tons CO_2/vehicle) was adjusted to new calculation assumptions (rectification of errors in logistics and franchises, inflation adjustment in categories 2, 8 and 13).
Average emissions of the new passenger car fleet (strategic KPI)				
EU	g CO_2/km	119	119	
USA	g CO_2/km	133	142	Emission pool: Volkswagen Passenger Cars, Audi, Lamborghini, Bentley and Porsche. Forecast value: The figure given for model year 2023 is also subject to confirmation by the EPA.
Alternative drive technologies in the Group				Volkswagen Group production: Volkswagen Passenger Cars, Audi, Škoda, SEAT, Volkswagen light commercial vehicles
Worldwide				
Gas drives (natural gas and LPG)	number of vehicles produced/ percentage change	7,189/ –53.3	15,387/ –56.3	
Hybrid drives	number of vehicles produced/ percentage change	253,009/ +10.1	229,882/ –4.2	
All-electric drives	number of vehicles produced/ percentage change	769,431/ +32.7	580,023/ +35.5	
Alternative drives (total)	**number of vehicles produced/ percentage change**	**1,029,629/ +24.8**	**825,292/ +17.4**	

[1] There was an error in the calculation of the DCI figure for Scope 3 categories 4 and 9 (logistics) in previous years because the Chinese joint ventures' vehicle volume was not correctly taken into account. The error was corrected in the reporting year, and historic figures have been restated accordingly. The calculation of the DCI figure for Scope 3 category 14 (franchises) was standardized in the reporting year so that the process-related emissions recorded in the previous year are now divided by the corresponding vehicle volume of the previous year. The previous year's figure was adjusted accordingly.

Decarbonization KPIs	Unit	2023	2022	Notes and comments
Europe				EU27, United Kingdom, Norway and Iceland
Gas drives (natural gas and LPG)	number of vehicles produced/ percentage change	7,104/ –53.4	15,240/ –56.4	
Hybrid drives	number of vehicles produced/ percentage change	206,322/ +24.0	166,415/ –16.2	
All-electric drives	number of vehicles produced/ percentage change	447,656/ +31.3	340,952/ +17.8	
Alternative drives (total)	**number of vehicles produced/ percentage change**	**661,082/ +26.5**	**522,607/ 0.0**	
Product carbon footprint (DCI) | *GRI 305-4*	in metric tons of CO_2/vehicle	47.3	47.8 (48.0)	See also decarbonization index note.
Scope 1 GHG emissions (absolute) [2, 3] | *GRI 305-1*	in million metric tons of CO_2	4.03	4.48	
of which Volkswagen AG	in million metric tons of CO_2	1.83	2.04	
Scope 1 GHG emissions (specific)[3] | *GRI 305-4*	in kg of CO_2/ vehicle	363	418	Passenger cars and light commercial vehicles
in Volkswagen AG	in kg of CO_2/ vehicle	2,243	3,060	
Scope 2 GHG emissions (absolute) [2] | *GRI 305-2*	in million metric tons of CO_2	1.96	2.11	
of which Volkswagen AG	in million metric tons of CO_2	0.12	0.11	
Scope 2 GHG emissions (specific) | *GRI 305-4*	in kg of CO_2/ vehicle	204	236	Passenger cars and light commercial vehicles
in Volkswagen AG	in kg of CO_2/ vehicle	145	167	
Scope 3 GHG emissions | GRI 305-3	**in million metric tons of CO_2**	**413.95**	**396.39**	
Category 1: Purchased Goods and Services	in metric tons of CO_2	89,572,138/ 21.6	80,786,280/ 20.4	The category 1 CO_2 emissions relate to the supply chain emissions of all passenger cars and light commercial vehicles produced in the reporting year. They were calculated on the basis of 68 production-volume-weighted life cycle assessments (LCAs). All vehicle LCAs (passenger cars and light commercial vehicles) have been independently certified in accordance with ISO 14040/44. Key drivers of change include an increased average vehicle weight and increased production number.

[2] Scope: The following sites are not included in the Group assessment in the reporting year: the four Scania Service Centers (Johannesburg, Narasapura, Kuala Lumpur, Taoyuan City); one MAN Truck & Bus SE site (Serendah); one site in China (Suzhou) and one site currently still under construction in China (Changchun) with planned production start at the end of 2024. Data for December of the reporting year may be based on estimates. Any estimated figures for the prior year were replaced when the current data was collected.

[3] The KPIs contain incomplete data for the MAN Truck & Bus SE sites.

Decarbonization KPIs	Unit	2023	2022	Notes and comments
Category 2: Capital goods	in metric tons of CO_2/in %	5,716,214 / 1.4	6,633,357/ 1.7	The emissions associated with capital goods were calculated on the basis of an economic input-output analysis using the investment data in the Volkswagen AG Annual Report. The emission factors used in the calculation will be adjusted for inflation from the 2023 reporting year onward.
Category 3: Fuel- and energy-related emissions (not included in Scope 1 or 2)	in metric tons of CO_2/in %	983,498 / 0.2	1,034,162/ 0.3	The Group-wide consumption of energy is recorded annually in our internal environmental information system and converted into CO_2 equivalents using emission factors for the various energy sources from a representative generic database.
Category 4: Upstream transportation and distribution	in metric tons of CO_2/in %	4,153,587 / 1.0	4,124,894/ 1.0	This number is equivalent to the CO_2 emissions from energy-source supply and use, both from inbound and outbound shipments and transportation processes between our sites worldwide (excluding the Chinese joint ventures). Transportation data are manually derived from internal transport IT systems for all modes of transport and manually recorded processes. Figure based on the 2023 CDP report; the figure for the 2023 reporting year will appear in the 2024 CDP report.
Category 5: Waste	in metric tons of CO_2/in %	1,050,976/ 0.3	909,775/ 0.2	The waste produced across the Group is recorded annually in our internal environmental information system and converted into CO_2 equivalents using emission factors for the various waste streams from a representative generic database.
Category 6: Business travel	in metric tons of CO_2/in %	248,450/ 0.1	123,816/ 0.0	Since the 2022 reporting year, the emissions have been calculated based on Volkswagen AG's actual air and rail travel and extrapolated for the Group. The increase in emissions is due to the removal of travel restrictions during the reporting year.
Category 7:[4] Employee commuting	in metric tons of CO_2/in %	1,114,774/ 0.3	1,099,091/ 0.3	The CO_2 emissions are based on activity data that were collected in a specific survey representing commuting to/from our largest site in Wolfsburg. The calculation assumes 220 working days per year and a distribution between modes of transport of 75% by car, 10% by train (long-distance transport), 5% by public transport (land transport) and 10% by public transport (urban). The corresponding emission factors for these four modes of transport were calculated on the basis of external generic data sources. The global Scope 3 emissions caused by commuting were extrapolated from the Wolfsburg results on the basis of headcount.

[4] Due to the low proportion of emissions (< 0.5%), the previous calculation was based on a generic approach. International, generic reference data will be used to further develop the methodology for emissions in the commuting category in the 2024 reporting year.

Decarbonization KPIs	Unit	2023	2022	Notes and comments
Category 8: Upstream leased assets	in metric tons of CO_2/in %	259,659/ 0.1	413,446/ 0.1	The calculation is based on Group-wide payments for rights to use land, buildings and buildings on third-party land. The emissions for this category were estimated using an economic input-output analysis. The emission factors used in the calculation will be adjusted for inflation from the 2023 reporting year onward.
Category 9: Downstream transportation and distribution				Included in category 4
Category 10: Processing of sold products				Included in Scope 1
Category 11: Use of sold products	in metric tons of CO_2/in %	299,195,581/ 72.3	288,543,814/ 72.8	The CO_2 emissions comprise the well-to-wheel emissions of all passenger cars and light commercial vehicles sold in 2023 at an assumed lifetime mileage of 200,000 km. The calculation is based on the weighted average fleet emissions [g CO_2/km] in the main European markets (EU27, United Kingdom, Norway and Iceland), China and the USA in accordance with the currently legally applicable driving cycles. Region-specific emission factors for fuel and electricity supply chains from a representative generic database were used to calculate the corresponding well-to-tank emissions. In the previous year's report, the figure wrongly took account of the Bugatti brand's vehicles but not the MAN brand's light commercial vehicles. The previous year's figure has therefore been corrected.
Category 12: End-of-life treatment of sold products	in metric tons of CO_2/in %	609,577/ 0.1	552,289/ 0.1	The category 12 CO_2 emissions relate to the potential end-of-life emissions of all passenger cars and light commercial vehicles produced in the reporting year. They were calculated on the basis of 68 production-volume-weighted life cycle assessments (LCAs). All vehicle LCAs (passenger cars and light commercial vehicles) have been independently certified in accordance with ISO 14040/44.
Category 13: Downstream leased assets	in metric tons of CO_2/in %	8,627,724/ 2.1	9,162,826/ 2.3	The calculation is based on, among other things, payments received by the Group for rights to use land, buildings and buildings on third-party land. The emissions for this category were estimated using an economic input-output analysis. The emission factors used in the calculation will be adjusted for inflation from the 2023 reporting year onward.
Category 14: Franchises	in metric tons of CO_2/in %	2,415,100/ 0.6	3,009,100/ 0.8	Since the 2022 reporting year, the calculation has been based on an annual evaluation of the CO_2 emissions of the Volkswagen Group's trading and service partners on the basis of the sites' energy consumption and country-specific emission factors. The latter come from a representative generic database.

EU Taxonomy

Doing business in an environmentally sustainable way is one of the central challenges of our time. The EU has defined criteria for determining the degree of a company's environmental sustainability. With our taxonomy-aligned investments in development activities and in property, plant and equipment, we are today already shaping the future in an environmentally sustainable way as envisaged by the EU Taxonomy.

Background and Objectives

As part of the European Green Deal, the European Union (EU) has placed the topics of climate protection, the environment and sustainability at the heart of its political agenda in order to achieve climate neutrality by the year 2050. The finance sector is expected to make an important contribution to realizing this objective. In this context, the EU published the "Strategy for Financing the Transition to a Sustainable Economy" in 2021. Aimed at supporting the financing of the transition to a sustainable economy, the published strategy contains proposals relating to transition finance, inclusiveness, resilience and contribution of the financial system, and global ambition. It is based on the EU's action plan on Financing Sustainable Growth of 2018. In addition to "Disclosures" and "Tools", another key module is the EU Taxonomy (Regulation (EU) 2020/852 and associated delegated acts).

The EU Taxonomy is a classification system for sustainable economic activities. An economic activity is considered taxonomy-eligible if it is listed in the EU Taxonomy and can therefore potentially contribute to realizing at least one of the following six environmental objectives:

- Climate change mitigation
- Climate change adaptation
- Sustainable use and protection of water and marine resources
- Transition to a circular economy
- Pollution prevention and control
- Protection and restoration of biodiversity and ecosystems.

An activity is only considered environmentally sustainable, i.e. taxonomy-aligned, if it meets all three of the following conditions:

- The activity makes a substantial contribution to one of the environmental objectives by meeting the screening criteria defined for this economic activity, e.g. level of CO_2 emissions for the climate change mitigation environmental objective.
- The activity meets the Do-No-Significant-Harm (DNSH) criteria defined for this economic activity. These are designed to prevent significant harm to one or more of the other environmental objectives, e.g. from the production process or by the product.
- The activity is carried out in compliance with the minimum safeguards, which apply to all economic activities and relate primarily to human rights and social and labor standards.

The Volkswagen Group supports the EU's overarching goal. We are committed to the Paris Climate Agreement and align our own activities with the 1.5 degree goal. We aim to achieve net carbon neutrality by 2050.

Reporting for Fiscal Year 2023

The Volkswagen Group is required by the EU Taxonomy to report on all of the environmental objectives for the first time in fiscal year 2023. Following climate change mitigation and climate change adaptation, definitions have now been assigned to the four remaining environmental objectives, these being sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems. The figures reported on sales revenue, capital expenditure and operating expenditure relate to the companies consolidated in the Volkswagen Group's financial statements. Volumes and financial data for our Chinese joint ventures are therefore excluded.

The wording and terminology used in the EU Taxonomy are still subject to some uncertainty in interpretation, which could lead to changes in the reporting when it is subsequently clarified by the EU. Ultimately, there is a risk that the key performance indicators presented as taxonomy-aligned would need to be assessed differently. Our interpretation is set out below.

Economic Activities of the Volkswagen Group

With the Group strategy "NEW AUTO – Mobility for generations to come", we are preparing ourselves for the global changes in mobility and thus playing a substantial role in driving Volkswagen's transformation into a provider of sustainable mobility. In this context, we pay particular attention to the use of resources and the emissions of our product portfolio, as well as those of our sites.

The Volkswagen Group's activities in its vehicle-related business with passenger cars, light commercial vehicles, trucks, buses and motorcycles cover the development, production and sale of vehicles and extend to our financial services and other vehicle-related products and services. Activities in these areas are suited under the EU Taxonomy to making a substantial contribution to the environmental objective of climate change mitigation by increasing clean or climate-neutral mobility.

The Volkswagen Group's activities in the Power Engineering Business Area comprise the development, design, production, sale and servicing of machinery and equipment. These activities also fall under the environmental objective of climate change mitigation.

An analysis of our economic activities in the context of the EU Taxonomy has not revealed any activities that contribute specifically to one of the other five environmental objectives.

The table below sets out the allocation of our activities in the vehicle-related business and in Power Engineering to the economic activities listed in the EU Taxonomy under the environmental objective of climate change mitigation. Changes may be made to the economic activities in future as the rules around the EU Taxonomy dynamically evolve.

Economic activity in accordance with the EU Taxonomy	Description of economic activity	Allocation in the Volkswagen Group
Environmental objective: climate change mitigation		
3. Manufacturing		
3.2 Manufacture of equipment for the production and use of hydrogen	Manufacture of equipment for the production and use of hydrogen	Power Engineering
3.3 Manufacture of low-carbon technologies for transport	Manufacture, repair, maintenance, retrofitting, repurposing and upgrade of low-carbon vehicles, rolling stock and vessels.	Vehicle-related business
3.6 Manufacture of other low-carbon technologies	Manufacture of technologies aimed at substantial greenhouse gas emission reductions in other sectors of the economy, where those technologies do not fall under other economic activities in the manufacturing sector.	Power Engineering
3.18 Manufacture of automotive and mobility components	Manufacture, repair, maintenance, retrofitting, repurposing and upgrade of automotive and mobility systems and components that are essential for delivering and improving the environmental performance of the vehicle.	Vehicle-related business
9. Professional, scientific and technical activities		
9.1 Close to market research, development and innovation	Research, applied research and experimental development of solutions, processes, technologies, business models and other products dedicated to the reduction, avoidance or removal of greenhouse gas emissions for which the ability to reduce, remove or avoid greenhouse gas emissions in the target economic activities has at least been demonstrated in a relevant environment, corresponding to at least Technology Readiness Level 6.	Power Engineering

Economic Activities in Vehicle-Related Business

Economic activity 3.3 Manufacture of low-carbon technologies for transport

We allocate all activities in our vehicle-related business associated with the development, production, sale (including financial services), operation and servicing of vehicles to this economic activity. This includes all passenger cars, light commercial vehicles, trucks, buses and motorcycles manufactured by us, irrespective of their powertrain technology, and also includes genuine parts.

In our vehicle-related business, we have detailed the vehicles manufactured by us by model and powertrain technology and analyzed the CO_2 emissions associated with them in accordance with the current regulations. In this way, we have identified those vehicles among all of our taxonomy-eligible vehicles that meet the screening criteria and with which the substantial contribution to climate change mitigation is measured. These include all of the Volkswagen Group's all-electric vehicles (BEVs). Until December 31, 2025, they also include passenger cars and light commercial vehicles with CO_2 emissions of less than 50 g/km in accordance with the WLTP. This encompasses the majority of our plug-in hybrids. Buses meeting the Euro 6 standard (Stage E) were also included until December 31, 2022.

Economic activity 3.18 Manufacture of automotive and mobility components

This economic activity was added to the EU Taxonomy in the reporting period to enable those components that play a key role in reducing greenhouse gas emissions also to be taken into account. To this activity, we allocate the sale to third parties of motors and powertrains produced by us for all-electric vehicles; this primarily comprises the sale of these components to our Chinese joint ventures.

At this stage, other activities that are directly associated with the primary vehicle-related business and that in our view should also be allocated to these economic activities have not yet been included or have been interpreted as not yet being taxonomy-eligible. This is because, as the rules of the EU Taxonomy currently stand, it is still unclear where to record them in accordance with the EU Taxonomy. These activities particularly include the sale of additional engines and powertrains, as well as parts deliveries, the sale of non-Group products and production under license by third parties. Based on current assumptions, hedging transactions and individual activities that we present primarily under Other sales revenue in the consolidated financial statements cannot be classified as economic activities under the EU Taxonomy, and we have therefore initially classified them as not being taxonomy-eligible.

Economic activities in Power Engineering

In the Power Engineering Business Area, we have analyzed our activities with respect to their classification under the EU Taxonomy and, with the exception of the business of building new heavy fuel oil engines and individual components for the extraction and processing of fossil fuels, have identified them as taxonomy-eligible. To enable us to also demonstrate the substantial contribution made by individual activities to climate change mitigation, we have developed a systematic method of calculating life-cycle greenhouse gas (GHG) emissions that is based on parameters and is suitable for the building of both individual machines and systems. This approach has been verified for some first projects by an independent third party and will be extended to other applications in future.

Economic activity 3.2 Manufacture of equipment for the production and use of hydrogen

Our activities in relation to the manufacture of equipment for the production of hydrogen are taxonomy-eligible: they include the electrolyzers we manufacture and the complete hydrogen systems we build. To meet the substantial contribution criteria, evidence of the life-cycle GHG emissions of the hydrogen later produced by the equipment's user must also be provided. This depends on the source of the energy used for electrolysis.

The manufacture of equipment for the use of hydrogen, which is required for a hydrogen-based supply of energy and raw materials, makes a substantial contribution to climate change mitigation. This equipment includes the compressors we manufacture for the transport, compression, or liquefaction of hydrogen, tanks and equipment for the storage of hydrogen, and reactors and equipment for processing hydrogen into hydrogen-based synthetic fuels.

Economic activity 3.6 Manufacture of other low-carbon technologies

The description of this economic activity means that only those technologies manufactured for the purpose of reducing greenhouse gas emissions substantially in other sectors of the economy are taxonomy-eligible. At Volkswagen, this comprises all new-build activities that enable the use of gas and climate-neutral synthetic fuels (e.g. manufacturing of gas and dual-fuel engines), all industrial solutions for energy storage and sector coupling (e.g. heat pumps) and all carbon capture, utilization and storage (CCUS) technology. These activities are rounded off by the service and after-sales business, comprising the upgrading and modernization of existing equipment. For example, we retrofit existing maritime fleets with technology that makes it possible to reduce CO_2 emissions.

To count as a substantial contribution to economic activity 3.6, we must demonstrate that the use of the product reported here enables substantial life-cycle GHG emission savings compared to the best-performing alternative available on the market. Examining the life-cycle GHG emissions of the product itself does not suffice; the difference from the emissions of the alternative technology must also be calculated and evaluated. For this purpose, we apply the systematic method based on parameters that is used to calculate life-cycle GHG emissions to the CCUS industrial solutions, large-scale heat pumps, energy storage systems and paper industry applications manufactured by us.

Economic activity 9.1 Close to market research, development and innovation
The description of this economic activity includes applied research in technologies for the reduction or avoidance of greenhouse gas emissions. We allocate our licensing business to this economic activity. In the course of such business we provide our development services in the form of production documents, based on which our licensees are authorized to manufacture corresponding gas and/or dual-fuel engines.

Do No Significant Harm (DNSH)

The DNSH criteria were analyzed in the reporting year for economic activities covered by 3.3 Manufacture of low-carbon technologies for transport, 3.18 Manufacture of automotive and mobility components, 3.2 Manufacture of equipment for the production and use of hydrogen and 3.6 Manufacture of other low-carbon technologies.

In the vehicle-related business, an analysis was performed largely at the level of the production sites where passenger cars, light commercial vehicles, trucks, buses and components are or will be produced that meet the screening criteria for the substantial contribution of economic activities 3.3 Manufacture of low-carbon technologies for transport and 3.18 Manufacture of automotive and mobility components, or that are to meet them in future according to our five-year planning, and based on current regulations. Of the approximately 40 sites included, the majority are located in the EU, with some in the United Kingdom, Türkiye, South Africa, the USA, Mexico, Brazil, Argentina, China and India. We also included the sites that manufacture specific components for electric vehicles.

For the Power Engineering Business Area, an analysis was performed largely at the level of the production sites that produce relevant components for systems or are responsible for supply chains that meet the screening criteria for the substantial contribution of economic activities 3.2 Manufacture of equipment for the production and use of hydrogen and 3.6 Manufacture of other low-carbon technologies, or that are to meet them in future according to our five-year planning. These comprise five sites in Germany, one in Switzerland and one in Sweden.

The wording and terminology used in the EU Taxonomy are subject to some uncertainty in interpretation. To some extent, the Taxonomy goes beyond the regulations to be applied in regular business operations. In addition, the application of the EU Taxonomy to sites outside the EU leads to particular challenges due to the possibility of diverging legislation. Below, we set out our interpretation and describe the main analyses we used to examine whether there was any significant harm to the other environmental objectives. Our assessments confirmed that we met the requirements of the DNSH criteria in the reporting year in the vehicle-related business at the sites producing passenger cars, light commercial vehicles and components, at the sites of the European truck and bus brands, and in the Power Engineering Business Area.

Climate Change Adaptation
We performed a climate risk and vulnerability assessment to identify which production sites may be affected by physical climate risks. The physical climate risks we identified were assessed on the basis of the lifetime of the relevant fixed asset.

Volkswagen's climate-based DNSH assessment is based on the Representative Concentration Pathway (RCP8.5) and on the Shared Socioeconomic Pathway (SSP5-8.5) scenario to the year 2050 and thus assumes the highest concentration of CO_2 according to the Intergovernmental Panel on Climate Change (IPCC). The relevance of the identified threats was assessed for the local environment and, if appropriate, the measures needed to mitigate the risk were developed.

Sustainable Use and Protection of Water and Marine Resources
We evaluated our economic activities with respect to the sustainable use and protection of water and marine resources looking at the three following criteria: preserving water quality, avoiding water stress, and an environmental compatibility assessment (EIA or comparable process). Risks identified in an EIA are examined during the approval process and, if relevant, result in measures and regulatory requirements. We based the analysis primarily on ISO 14001 certificates, information from site approvals and other external data sources related to sites with a high risk exposure.

Transition to a Circular Economy
Environmentally compatible waste management in the manufacturing process, reuse and use of secondary raw materials and a long product lifespan are major parts of Volkswagen's environmental management system. Volkswagen defines guidelines on the circular economy in its environmental principles, in its overall factory white paper and in its goTOzero strategy.

The product-related requirements for passenger cars and light commercial vehicles are taken into account through implementation of the statutory end-of-life vehicle requirements in conjunction with the type approval of the vehicle models. In addition to this, each brand has targets and measures for the use of recycled materials in new vehicles.

For trucks and buses, a review was conducted at the level of each brand to establish the extent to which local legislation or internal rules and regulations cover the specific requirements.

In the Power Engineering Business Area, a major lever for the circular economy can be found particularly in a long product lifespan, supported among other things by our retrofitting business.

Pollution Prevention and Control
To be considered environmentally sustainable, an economic activity may not significantly increase air, water or soil pollutant emissions as compared with the situation before the activity started.

Overall, the automotive sector is already tightly regulated, as demonstrated for example by the publicly accessible Global Automotive Declarable Substance List (GADSL). Approval and monitoring processes have been implemented with the aim of ensuring compliance with the legal requirements and internal rules and regulations applicable to regular business operations. In this context, we also already consider the use of alternative substances in our analyses and assessments.

In July 2023, the European Commission revised the DNSH criterion of the EU Taxonomy. There is room for interpretation as to the effect that the changed requirements will have on internal processes related to the assessment of substitution options for substances of very high concern (SVHC) in the 2023 reporting year.

In the vehicle-related business, standards and processes stipulating in principle that SVHCs should be avoided and substituted are already in place. On this basis, our analyses look at the substances contained in the process materials used in production and in the vehicle-related components of our all-electric vehicles, and at the suppliers of these materials and components, in order to assess whether the SVHCs can be substituted, taking into account factors such as technical and economic criteria. We use pilot projects to test the processes and documentation for assessing substitution options in accordance with the amended EU Taxonomy requirements. It has not yet been possible to verify whether the sites of the truck and bus brands that operate only outside the European Economic Area comply with the new regulations due to factors such as the inadequate lead time for implementation.

In the Power Engineering Business Area, the corresponding processes include surveys relating to the substitution assessments and guidelines for performing these assessments.

Protection and Restoration of Biodiversity and Ecosystems
In order to verify adherence to the requirements on biodiversity and ecosystems, the relevant areas were identified. Where biodiversity-sensitive areas are located close to a production site, we checked whether a nature conservation assessment had been performed and whether nature conservation measures had been defined in the environmental approvals and subsequently implemented. We also checked whether changes had occurred in an area's conservation status.

Minimum Safeguards

The minimum safeguards consist of the OECD Guidelines for Multinational Enterprises, the United Nations Guiding Principles on Business and Human Rights, the Fundamental Conventions of the International Labour Organization (ILO) and the International Bill of Human Rights. The assessments confirm that we meet the requirements of the minimum safeguards in the reporting year.

As a business with a global presence, the Volkswagen Group accepts its corporate responsibility for human rights, fully recognizes these conventions and declarations and reaffirms its agreement with the contents and principles stated therein. In 2022, the Volkswagen Group appointed a Human Rights Officer, whose duties relate primarily to monitoring, checking and advising within the meaning of the *Lieferkettensorgfaltspflichtengesetz* (LkSG – German Supply Chain Due Diligence Act).

The LkSG imposes certain due diligence obligations designed to avoid risks associated with human rights and the environment. These obligations include the performance of risk analyses, the integration of preventive measures, remedial measures and the provision of a complaints mechanism. The due diligence obligations apply both to the Volkswagen Group's own business area and to the Group's supply chain. In the reporting year, the departments responsible performed a risk analysis using questionnaire-based surveys of the Group companies of the Volkswagen Group's own business area; this included all sites that were also examined under the DNSH criteria. The companies were given risk-specific measures to counteract the risks identified in the analysis, and were required to implement these. For risks that are already known, we have begun to revise and initiate preventive measures and to supplement these with other measures where appropriate. The status of implementation of the respective measures is continuously monitored by the Group. If infringements of the frameworks are identified, remedial measures must be initiated and checked for their effectiveness.

Relationships with our business partners are based on agreements such as the Code of Conduct for Business Partners. We review compliance by the relevant suppliers with the binding requirements defined in the Code using sustainability ratings. We address existing sustainability risks and violations of sustainability principles by systematically defining and allocating packages of measures to correct the violations; we also apply this approach to the upstream supply chain. In addition, we also conducted training for suppliers and on-site audits at suppliers with a high risk exposure in the reporting period. We implemented a Human-Rights-Focus-System in 2022 to comply with international frameworks and requirements and specifically the LkSG. The system aims to identify particularly high risks in our supply chain in connection with human rights violations and the environment and to manage these appropriately.

Key Performance Indicators in accordance with the EU Taxonomy Regulation

The EU Taxonomy defines sales revenue, capital expenditure and operating expenditure as the key performance indicators that must be reported on. We explain these below. The tables required by the EU Taxonomy are included at the end of the section.

The financial figures relevant for the Volkswagen Group are taken from the IFRS consolidated financial statements for fiscal year 2023. As we differentiate between economic activities, we have avoided double counting. Where possible, the figures within an economic activity have been allocated directly. In our vehicle-related business, for example, we compiled the financial figures based on the vehicle model and powertrain technology. This applies both to the vehicles themselves and to the corresponding financial services and other services and activities. Only where this was not possible for capital expenditure and operating expenditure were allocation formulas used based on the planned vehicle volumes. In the Power Engineering Business Area, we used allocation formulas based on planned sales revenue. This data and planning form part of the medium-term financial planning for the next five years on which the Board of Management and Supervisory Board have passed a resolution.

Sales Revenue

The definition of turnover in the EU Taxonomy corresponds to the sales revenue reported in the IFRS consolidated financial statements. This amounted to €322.3 billion in fiscal year 2023 (see also note on "Sales revenue" in the notes to the consolidated financial statements; the prior-year figures were adjusted – see disclosures on IFRS 17).

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Of this total, €294.0 billion, or 91.2% of Group sales, was attributable to economic activity 3.3 Manufacture of low-carbon technologies for transport, and was classified as taxonomy-eligible. This includes sales revenue after sales allowances from the sale of new and used vehicles including motorcycles, from genuine parts, from the rental and lease business, and from interest and similar income, as well as sales revenue directly related to the vehicles, such as workshop and other services.

Economic activity 3.18 Manufacture of automotive and mobility components accounted for taxonomy-eligible sales revenue of €165 million or 0.1% of Group sales. This includes the sale of all-electric vehicle motors and powertrains to third parties.

Of the taxonomy-eligible sales revenue from economic activity 3.3 Manufacture of low-carbon technologies for transport, €36.6 billion met the screening criteria used to measure the substantial contribution to climate change mitigation. This includes all of our all-electric vehicles and a large proportion of our plug-in hybrids. In 2023, there were 799 thousand such vehicles, around one third more than in the previous year. Their share of the relevant sales volume – excluding the vehicles from the Chinese joint ventures – rose to 12.7 (11.1)%. Passenger cars and light commercial vehicles made up the bulk at 797 thousand vehicles; trucks and buses were down compared with the previous year, when buses that met the requirements of the Euro VI-E standard were still counted. Sales of all-electric vehicles (BEV) increased very sharply

compared with the prior year. In addition, the taxonomy-eligible sales revenue from economic activity 3.18 Manufacture of automotive and mobility components met the screening criteria used to measure the substantial contribution to climate change mitigation.

Taking into account the DNSH criteria and minimum safeguards, €36.5 (26.1) billion of the sales revenue generated from our vehicle-related business, equating to 11.3 (9.4)% of consolidated sales revenue, was taxonomy-aligned. Of this figure, €165 million related to economic activity 3.18 Manufacture of automotive and mobility components, which is being reported for the first time, while €27.8 billion or 8.6% of consolidated sales revenue was attributable to our BEV models.

In the Power Engineering Business Area, our activities that fall under economic activity 3.2 Manufacture of equipment for the production and use of hydrogen generated completely taxonomy-aligned sales revenue of €28 million (previous year: €18 million). The increase in taxonomy-aligned sales revenue is attributable to the expansion of the business. Most of our taxonomy-eligible sales revenue in the Power Engineering Business Area was attributable to economic activity 3.6 Manufacture of other low-carbon technologies (€3.1 billion), €68 million of which is taxonomy-aligned. In the reporting year, the complex evidential requirements were fulfilled for a portion of the activities for the first time. A further €58 million was contributed to taxonomy-eligible sales revenue by economic activity 9.1 Close to market research, development and innovation.

Of the Volkswagen Group's total sales revenue in fiscal year 2023,

- €297.4 (256.9) billion, or 92.3 (92.0)%, was taxonomy-eligible sales revenue and
- €36.6 (26.1) billion, or 11.4 (9.4)%, was taxonomy-aligned sales revenue.

Sales Revenue 2023

	Sales Revenue		Substantial Contribution to Climate Change Mitigation		Compliance with DNSH Criteria	Compliance with Minimum Safeguards	Taxonomy-Aligned Sales Revenue	
Economic activities	€ million	%[1]	€ million	%[1]	Y/N	Y/N	€ million	%[1]
A. Taxonomy-eligible activities	**297,359**	**92.3**	**36,847**	**11.4**	**Y/N**	**Y**	**36,644**	**11.4**
Vehicle-related business								
3.3 Manufacture of low-carbon technologies for transport	294,049	91.2	36,586	11.4	Y/N	Y	36,383	11.3
of which taxonomy-aligned BEVs					Y	Y	27,759	8.6
3.18 Manufacture of automotive and mobility components	165	0.1	165	0.1	Y	Y	165	0.1
Power Engineering								
3.2 Manufacture of equipment for the production and use of hydrogen	28	0.0	28	0.0	Y	Y	28	0.0
3.6 Manufacture of other low-carbon technologies	3,059	0.9	68	0.0	Y	Y	68	0.0
9.1 Close to market research, development and innovation	58	0.0	–	–	–	–	–	–
B. Taxonomy-non-eligible activities	**24,925**	**7.7**						
Total (A + B)	**322,284**							

[1] All percentages relate to the Group's total sales revenue.

Capital Expenditure

Capital expenditure for the purposes of the EU Taxonomy refers to the following items in the IFRS consolidated financial statements: additions to intangible assets, additions to property, plant and equipment, and additions to lease assets and investment property. These are reported in the notes to the 2023 consolidated financial statements in the notes on "Intangible assets", "Property, plant and equipment" and "Lease assets and investment property". Additions from business combinations, each of which is reported under "Changes in consolidated Group", are also included. By contrast, additions to goodwill are not included in the calculation.

In fiscal year 2023, additions in the Volkswagen Group as defined above amounted to

- €12.3 billion from intangible assets,
- €14.8 billion from property, plant and equipment and
- €33.0 billion from lease assets (mainly vehicle leasing business) and investment property.

Other additions to be included resulted from changes in the consolidated Group, amounting to €1.4 billion in fiscal year 2023. Total capital expenditure to be included in accordance with the EU Taxonomy therefore came to €61.5 billion.

All capital expenditure attributable to our vehicle-related business is associated with economic activity 3.3 Manufacture of low-carbon technologies for transport. Taxonomy-eligible capital expenditure for the vehicle-related business amounted to €61.1 billion, or 99.4% of the Group's capital expenditure.

To determine the substantial contribution in the vehicle-related business, we compiled the financial figures based on the vehicle model and powertrain technology in the same way as for sales revenue. Where possible, capital expenditure was directly attributed to vehicles. It was included if the vehicles in question make a substantial contribution to the climate change mitigation objective. Any capital expenditure directly attributable to vehicles that do not meet the screening criteria was not included. Capital expenditure that was not clearly attributable to a particular vehicle was taken into account on a proportionate basis using allocation formulas. In our vehicle-related business, we developed allocation formulas based on planned vehicle volumes for the Group companies. In the sales companies, for example, we used allocation formulas related either to individual brands or to all brands, depending on the primary business activity, while site-based allocation formulas were used for production companies. This means that capital expenditure was counted in full via the allocation formulas for sites that according to our medium-term planning will produce only vehicles meeting the screening criteria for the substantial contribution in the next five years. In contrast, capital expenditure on sites that only produce vehicles not meeting the screening criteria was not counted under the allocation formula. Calculated in this way, capital expenditure relating to vehicles that meet the screening criteria for the substantial contribution amounted to €20.1 billion.

Taking into account the DNSH criteria and minimum safeguards, capital expenditure of €20.0 (16.9) billion was taxonomy-aligned. This represented 32.6 (34.5)% of the Group's total capital expenditure. Of this figure, €5.9 billion was attributable to intangible assets, €6.3 billion to property, plant and equipment and €7.9 billion to lease assets and investment property. The figure includes additions to capitalized development costs of €4.9 billion and additions to property, plant and equipment of €6.1 billion for our all-electric vehicles (BEV). The increase in taxonomy-aligned capital expenditure of €3.1 billion is attributable to the growing number of environmentally sustainable vehicle projects under the EU Taxonomy.

In the reporting period, we refinanced taxonomy-aligned capital expenditure from fiscal years 2021 and 2022 based on the Green Finance Framework updated in October 2022 by issuing green bonds in the amount of €3.5 billion. Only capital expenditure in connection with all-electric vehicles was included here.

In 2022, Scania issued a green bond totaling SEK 3.0 billion to finance research and development activities relating to all-electric vehicles. The remaining €91 million was used in the reporting period; of this amount, €46 million was attributable to taxonomy-aligned capital expenditure. Adjusted for this figure, taxonomy-aligned capital expenditure attributable to the vehicle-related business accounted for 32.5 (34.3)% of total capital expenditure in accordance with the EU Taxonomy.

€37 million of the taxonomy-eligible capital expenditure in the Power Engineering Business Area is attributable to economic activity 3.2 Manufacture of equipment for the production and use of hydrogen and €85 million is attributable to economic activity 3.6 Manufacture of other low-carbon technologies. For the latter, capital expenditure was broken down based on planned sales revenue.

Taxonomy-aligned capital expenditure for the manufacture of equipment for the production and use of hydrogen was disclosed in the amount of €37 million, half of which was attributable to intangible assets and half to property, plant and equipment. Capital expenditure amounting to €24 million for the manufacture of other low-carbon technologies was disclosed as taxonomy-aligned, more than 90% of this was attributable to property, plant and equipment.

Of the Volkswagen Group's total capital expenditure in fiscal year 2023,

- €61.3 (48.9) billion, or 99.6 (99.6)%, was taxonomy-eligible capital expenditure and
- €20.1 (16.9) billion, or 32.7 (34.5)%, was taxonomy-aligned capital expenditure.

Capital Expenditure 2023

	Capital Expenditure		Substantial Contribution to Climate Change Mitigation		Compliance with DNSH Criteria	Compliance with Minimum Safeguards	Taxonomy-Aligned Capital Expenditure	
Economic activities	€ million	%[1]	€ million	%[1]	Y/N	Y/N	€ million	%[1]
A. Taxonomy-eligible activities	**61,250**	**99.6**	**20,188**	**32.8**	**Y/N**	**Y**	**20,091**	**32.7**
Vehicle-related business								
3.3 Manufacture of low-carbon technologies for transport	61,129	99.4	20,126	32.7	Y/N	Y	20,029	32.6
of which additions to capitalized development costs for BEVs							4,920	8.0
of which additions to property, plant and equipment for BEVs							6,107	9.9
3.18 Manufacture of automotive and mobility components	–	–	–	–	–	–	–	–
Power Engineering								
3.2 Manufacture of equipment for the production and use of hydrogen	37	0.1	37	0.1	Y	Y	37	0.1
3.6 Manufacture of other low-carbon technologies	85	0.1	24	0.0	Y	Y	24	0.0
9.1 Close to market research, development and innovation	–	–	–	–	–	–	–	-
B. Taxonomy-non-eligible activities	**221**	**0.4**						
Total (A + B)	**61,472**							

[1] All percentages relate to the Group's total capital expenditure.

Operating Expenditure

The operating expenditure reported by us for the purposes of the EU Taxonomy comprises both non-capitalized research and development costs, which can be taken from the note on "Intangible assets", and the expenditure for short-term leases recognized in our consolidated financial statements, which can be found in the note on "IFRS 16 (Leases)", as well as expenditure for maintenance and repairs.

The allocation of operating expenditure to the economic activities followed the same logic as that described for capital expenditure.

All operating expenditure attributable to the vehicle-related business is associated with economic activity 3.3 Manufacture of low-carbon technologies for transport and has been classified as taxonomy-eligible.

Where possible, non-capitalized research and development costs were directly attributed to vehicles. They were included if the vehicles in question make a substantial contribution to the climate change mitigation objective. We did not include any non-capitalized research and development costs directly attributable to vehicles that do not meet the screening criteria. Non-capitalized research and development costs that were not clearly attributable to a particular vehicle were taken into account on a proportionate basis using allocation formulas. For these and other operating expenses, allocation formulas were used, similarly to capital expenditure. Of the taxonomy-aligned operating expenditure of €5.7 (4.9) billion, around 85% was attributable to non-capitalized research and development costs. The absolute value of the increase in taxonomy-aligned operating expenditure is attributable to the growing number of environmentally sustainable vehicle projects under the EU Taxonomy.

Including the share of the bond issued by Scania attributable to taxonomy-aligned operating expenditure, the share of taxonomy-aligned operating expenditure declined from 43.2 (42.7)% to 42.9 (42.0)% of total operating expenditure in accordance with the EU Taxonomy.

€9 million of the taxonomy-eligible operating expenditure in the Power Engineering Business Area is attributable to economic activity 3.2 Manufacture of equipment for the production and use of hydrogen and €219 million is attributable to economic activity 3.6 Manufacture of other low-carbon technologies. For the latter, operating expenditure that could not be directly allocated was broken down based on planned sales revenue.

Taxonomy-aligned operating expenditure for the manufacture of equipment for the production and use of hydrogen was disclosed in the amount of €9 (4) million and was attributable to non-capitalized research and development costs. €61 million of the operating expenditure was disclosed for the manufacture of other low-carbon technologies, nearly two-thirds of which was attributable to non-capitalized research and development costs. Operating expenditure that could not be directly allocated was broken down on the basis of the planned taxonomy-aligned sales revenue.

Operating Expenditure 2023

	Operating Expenditure		Substantial Contribution to Climate Change Mitigation		Compliance with DNSH Criteria	Compliance with Minimum Safeguards	Taxonomy-Aligned Operating Expenditure	
Economic activities	€ million	%[1]	€ million	%[1]	Y/N	Y/N	€ million	%[1]
A. Taxonomy-eligible activities	**13,120**	**98.9**	**5,834**	**44.0**	**Y/N**	**Y**	**5,807**	**43.8**
Vehicle-related business								
3.3 Manufacture of low-carbon technologies for transport	12,893	97.2	5,764	43.5	Y/N	Y	5,737	43.2
3.18 Manufacture of automotive and mobility components	–	–	–	–	–	–	–	–
Power Engineering								
3.2 Manufacture of equipment for the production and use of hydrogen	9	0.1	9	0.1	Y	Y	9	0.1
3.6 Manufacture of other low-carbon technologies	219	1.6	61	0.5	Y	Y	61	0.5
9.1 Close to market research, development and innovation	–	–	–	–	–	–	–	–
B. Taxonomy-non-eligible activities	**145**	**1.1**						
Total (A + B)	**13,265**							

[1] All percentages relate to the Group's total operating expenditure.

Capex Plan under the EU Taxonomy

The EU Taxonomy requires the reporting to state the extent to which taxonomy-aligned capital and operating expenditures a) relate to assets or processes associated with environmentally sustainable economic activities or b) are part of a plan to expand taxonomy-aligned economic activities or to allow taxonomy-eligible economic activities to become taxonomy-aligned (CapEx plan). A CapEx plan under the EU Taxonomy shows the total capital expense, i.e. the sum of capital and operating expenditures expected to be incurred in the reporting period and during the five-year medium-term planning in order to expand taxonomy-aligned economic activities or allow taxonomy-eligible economic activities to become taxonomy-aligned.

For the vehicle-related business, the CapEx plan drawn up under the EU Taxonomy relates to economic activity 3.3 Manufacture of low-carbon technologies for transport within the climate change mitigation environmental objective.

Additions from lease assets (mainly vehicle leasing business) are based on existing environmentally sustainable activities and have therefore not been included in the CapEx plan. We allocated additions from intangible assets and property, plant and equipment, as well as non-capitalized research and development costs to the CapEx plan if they allow taxonomy-eligible economic activities to become taxonomy-aligned or lead to the expansion of taxonomy-aligned economic activities. For this, we compared the average taxonomy-aligned production volume from the medium-term planning with the taxonomy-aligned vehicles from the reporting period and allocated the taxonomy-aligned capital expenditure according to this ratio, whereby we also took into account the share exceeding the current taxonomy-aligned production volume.

As a result, €8 (9) billion of the taxonomy-aligned capital expenditure and €3 (3) billion of the taxonomy-aligned operating expenditure in the reporting period is attributable to the CapEx plan under the EU Taxonomy. The total capital expense from the CapEx plan under the EU Taxonomy that is expected to be incurred in the reporting period and during the five-year medium-term planning amounts to €90 (100) billion.

In the Power Engineering Business Area, the CapEx plan under the EU Taxonomy relates to economic activity 3.2 Manufacture of equipment for the production and use of hydrogen, and economic activity 3.6 Manufacture of other low-carbon technologies, both of which are listed in the climate change mitigation environmental objective.

In respect of the manufacture of equipment for the production and use of hydrogen, we allocated €36 (26) million of the taxonomy-aligned capital expenditure and €8 (4) million of the taxonomy-aligned operating expenditure to the CapEx plan based on the ratio of sales revenue in the reporting period to the average sales revenue envisaged in the medium-term planning. The total capital expense from this CapEx plan under the EU Taxonomy that is expected to be incurred in the reporting period and during the medium-term planning amounts to approximately €455 (300) million.

In respect of the manufacture of other low-carbon technologies, we allocated €23 million of the taxonomy-aligned capital expenditure and €37 million of the taxonomy-aligned operating expenditure to the CapEx plan based on the ratio of sales revenue in the reporting period to the average sales revenue envisaged in the medium-term planning. The total capital expense from this CapEx plan under the EU Taxonomy that is expected to be incurred in the reporting period and during the medium-term planning amounts to approximately €380 million.

Sales Revenue 2023

				Criteria for a Significant Contribution						DNSH Criteria (Do No Significant Harm)									
	Code	Sales revenue	Proportion of sales revenue 2023	Climate change mitigation	Climate change adaptation	Water	Pollution	Circular economy	Biodiversity	Climate change mitigation	Climate change adaptation	Water	Pollution	Circular economy	Biodiversity	Minimum Safeguards	Taxonomy-aligned (A.1) or taxonomy-eligible (A.2) proportion of sales revenue 2022	Enabling activities category	Transition activities category
Economic activities		€ (million)	%[1]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%[1]	E	T
A. Taxonomy-eligible activities																			
A.1 Environmentally sustainable activities (taxonomy-aligned)																			
Manufacture of low-carbon technologies for transport	CCM 3.3	36,383	11.3	Y	N/EL	N/EL	N/EL	N/EL	N/EL		Y	Y	Y	Y	Y	Y	9.4	E	
Manufacture of automotive and mobility components	CCM 3.18	165	0.1	Y	N/EL	N/EL	N/EL	N/EL	N/EL		Y	Y	Y	Y	Y	Y	-	E	
Manufacture of equipment for the production and use of hydrogen	CCM 3.2	28	0.0	Y	N/EL	N/EL	N/EL	N/EL	N/EL		Y	Y	Y	Y	Y	Y	0.0	E	
Manufacture of other low-carbon technologies	CCM 3.6	68	0.0	Y	N/EL	N/EL	N/EL	N/EL	N/EL		Y	Y	Y	Y	Y	Y	-	E	
Sales revenue from environmentally sustainable activities (taxonomy-aligned) (A.1)		**36,644**	**11.4**	**11.4**	**-**	**-**	**-**	**-**	**-**		**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**9.4**		
Of which enabling activities		36,644	11.4	11.4	-	-	-	-	-		Y	Y	Y	Y	Y	Y	9.4	E	
Of which transition activities		-	-	-							-	-	-	-	-	-	-		
A.2 Taxonomy-eligible but not environmentally sustainable activities (activities that are not taxonomy-aligned)				**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**										
Manufacture of low-carbon technologies for transport	CCM 3.3	257,666	80	EL	N/EL	N/EL	N/EL	N/EL	N/EL								81.8		
Manufacture of other low-carbon technologies	CCM 3.6	2,991	0.9	EL	N/EL	N/EL	N/EL	N/EL	N/EL								0.9		
Close to market research, development and innovation	CCM 9.1	58	0.0	EL	N/EL	N/EL	N/EL	N/EL	N/EL								0.0		
Sales revenue from taxonomy-eligible but not environmentally sustainable activities (activities that are not taxonomy-aligned) (A.2)		**260,715**	**80.9**	**80.9**	**-**	**-**	**-**	**-**	**-**								**82.7**		
Sales revenue from taxonomy-eligible activities (A.1 + A.2)		**297,359**	**92.3**	**92.3**	**-**	**-**	**-**	**-**	**-**								**92.0**		
B. Taxonomy-non-eligible activities																			
Sales revenue from activities that are not taxonomy-eligible (B)		24,925	7.7																
Total (A + B)		**322,284**	**100.0**																

[1] All percentages relate to the Group's total sales revenue.
[2] Y: Yes, taxonomy-eligible activity and taxonomy-aligned with the relevant environmental objective; N: No, taxonomy-eligible activity but not taxonomy-aligned with the relevant environmental objective; N/EL: 'Not eligible', activity not taxonomy-eligible for the relevant environmental objective.
[3] EL: Taxonomy-eligible activity for the relevant objective; N/EL: Activity that is not taxonomy-eligible for the relevant objective.

Capital Expenditure 2023

				Criteria for a Significant Contribution						DNSH Criteria (Do No significant Harm)									
	Code	CapEx	Proportion of CapEx 2023	Climate change mitigation	Climate change adaptation	Water	Pollution	Circular economy	Biodiversity	Climate change mitigation	Climate change adaptation	Water	Pollution	Circular economy	Biodiversity	Minimum Safeguards	Taxonomy-aligned (A.1) or taxonomy-eligible (A.2) proportion of CapEx 2022	Enabling activities category	Transition activities category
Economic activities		€ (million)	%[1]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%[1]	E	T
A. Taxonomy-eligible activities																			
A.1 Environmentally sustainable activities (taxonomy-aligned)																			
Manufacture of low-carbon technologies for transport	CCM 3.3	20,029	32.6	Y	N/EL	N/EL	N/EL	N/EL	N/EL		Y	Y	Y	Y	Y	Y	34.5	E	
Manufacture of equipment for the production and use of hydrogen	CCM 3.2	37	0.1	Y	N/EL	N/EL	N/EL	N/EL	N/EL		Y	Y	Y	Y	Y	Y	0.1	E	
Manufacture of other low-carbon technologies	CCM 3.6	24	0.0	Y	–	–	–	–	–		Y	Y	Y	Y	Y	Y	–	E	
CapEx from environmentally sustainable activities (taxonomy-aligned) (A.1)		**20,091**	**32.7**	**32.7**	**–**	**–**	**–**	**–**	**–**		**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**34.5**		
Of which enabling activities		20,091	32.7	32.7	–	–	–	–	–		Y	Y	Y	Y	Y	Y	34.5	E	
Of which transition activities		–	–	–							–	–	–	–	–	–	–		
A.2 Taxonomy-eligible but not environmentally sustainable activities (activities that are not taxonomy-aligned)				**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**										
Manufacture of low-carbon technologies for transport	CCM 3.3	41,099	66.9	EL	N/EL	N/EL	N/EL	N/EL	N/EL								64.9		
Manufacture of other low-carbon technologies	CCM 3.6	60	0.1	EL	N/EL	N/EL	N/EL	N/EL	N/EL								0.1		
CapEx from taxonomy-eligible but not environmentally sustainable activities (activities that are not taxonomy-aligned) (A.2)		**41,160**	**67.0**	**67.0**	**–**	**–**	**–**	**–**	**–**								**65.1**		
CapEx from taxonomy-eligible activities (A.1 + A.2)		**61,250**	**99.6**	**99.6**	**–**	**–**	**–**	**–**	**–**								**99.6**		
B. Taxonomy-non-eligible activities																			
CapEx from activities that are not taxonomy-eligible (B)		221	0.4																
Total (A + B)		**61,472**	**100.0**																

[1] All percentages relate to the Group's total capital expenditure.
[2] Y: Yes, taxonomy-eligible activity and taxonomy-aligned with the relevant environmental objective; N: No, taxonomy-eligible activity but not taxonomy-aligned with the relevant environmental objective; N/EL: 'Not eligible', activity not taxonomy-eligible for the relevant environmental objective.
[3] EL: Taxonomy-eligible activity for the relevant objective; N/EL: Activity that is not taxonomy-eligible for the relevant objective.

Operating Expenditure 2023

				Criteria for a Significant Contribution						DNSH Criteria (Do No significant Harm)									
	Code	OpEx	Proportion of OpEx 2023	Climate change mitigation	Climate change adaptation	Water	Pollution	Circular economy	Biodiversity	Climate change mitigation	Climate change adaptation	Water	Pollution	Circular economy	Biodiversity	Minimum Safeguards	Taxonomy-aligned (A.1) or taxonomy-eligible (A.2) proportion of OpEx 2022	Enabling activities category	Transition activities category
Economic activities		€ (million)	%[1]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y; N; N/EL[2]	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	Y/N	%[1]	E	T
A. Taxonomy-eligible activities																			
A.1 Environmentally sustainable activities (taxonomy-aligned)																			
Manufacture of low-carbon technologies for transport	CCM 3.3	5,737	43.2	Y	N/EL	N/EL	N/EL	N/EL	N/EL		Y	Y	Y	Y	Y	Y	42.7	E	
Manufacture of equipment for the production and use of hydrogen	CCM 3.2	9	0.1	Y	N/EL	N/EL	N/EL	N/EL	N/EL		Y	Y	Y	Y	Y	Y	0.0	E	
Manufacture of other low-carbon technologies	CCM 3.6	61	0.5	Y	N/EL	N/EL	N/EL	N/EL	N/EL		Y	Y	Y	Y	Y	Y	–	E	
OpEx from environmentally sustainable activities (taxonomy-aligned) (A.1)		**5,807**	**43.8**	**43.8**	**–**	**–**	**–**	**–**	**–**		**Y**	**Y**	**Y**	**Y**	**Y**	**Y**	**42.7**		
Of which enabling activities		5,807	43.8	43.8	–	–	–	–	–		Y	Y	Y	Y	Y	Y	42.7	E	
Of which transition activities		–	–	–							–	–	–	–	–	–	–		
A.2 Taxonomy-eligible but not environmentally sustainable activities (activities that are not taxonomy-aligned)				**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**	**EL; N/EL[3]**										
Manufacture of low-carbon technologies for transport	CCM 3.3	7,156	53.9	EL	N/EL	N/EL	N/EL	N/EL	N/EL								54.4		
Manufacture of other low-carbon technologies	CCM 3.6	158	1.2	EL	N/EL	N/EL	N/EL	N/EL	N/EL								1.7		
OpEx from taxonomy-eligible but not environmentally sustainable activities (activities that are not taxonomy-aligned) (A.2)		**7,314**	**55.1**	**55.1**	**–**	**–**	**–**	**–**	**–**								**56.1**		
OpEx from taxonomy-eligible activities (A.1 + A.2)		**13,120**	**98.9**	**98.9**	**–**	**–**	**–**	**–**	**–**								**98.9**		
B. Taxonomy-non-eligible activities																			
OpEx from activities that are not taxonomy-eligible (B)		145	1.1																
Total (A + B)		**13,265**	**100.0**																

[1] All percentages relate to the Group's total operating expenditure.
[2] Y: Yes, taxonomy-eligible activity and taxonomy-aligned with the relevant environmental objective; N: No, taxonomy-eligible activity but not taxonomy-aligned with the relevant environmental objective; N/EL: 'Not eligible', activity not taxonomy-eligible for the relevant environmental objective.
[3] EL: Taxonomy-eligible activity for the relevant objective; N/EL: Activity that is not taxonomy-eligible for the relevant objective.