



PORSCHE



Taking our responsibilities seriously.

2016/2017 Environmental Statement • Zuffenhausen

Foreword



“One of our core values is ensuring that the work done by every single one of our employees and managers is sustainable.”

Albrecht Reimold, Member of the Executive Board of Dr. Ing. h.c. F. Porsche AG for Production and Logistics

The Porsche Strategy 2025 is a project dedicated to shaping the future of the sports car. It centres around the future product portfolio. The sports car of the future will blend the tradition and values of the Porsche brand with innovative technologies, while at the same time ensuring sustainability. Careful use of resources and environmentally conscious, energy-efficient activities play a key role in this respect, and are firmly anchored in the company's strategy.

Taking our responsibilities seriously and conserving energy and resources are overriding strategic goals for Porsche. Economic success, environmental awareness and social responsibility are not opposing concepts. On the contrary, they can be combined to form an overall idea that defines the company's attitude.

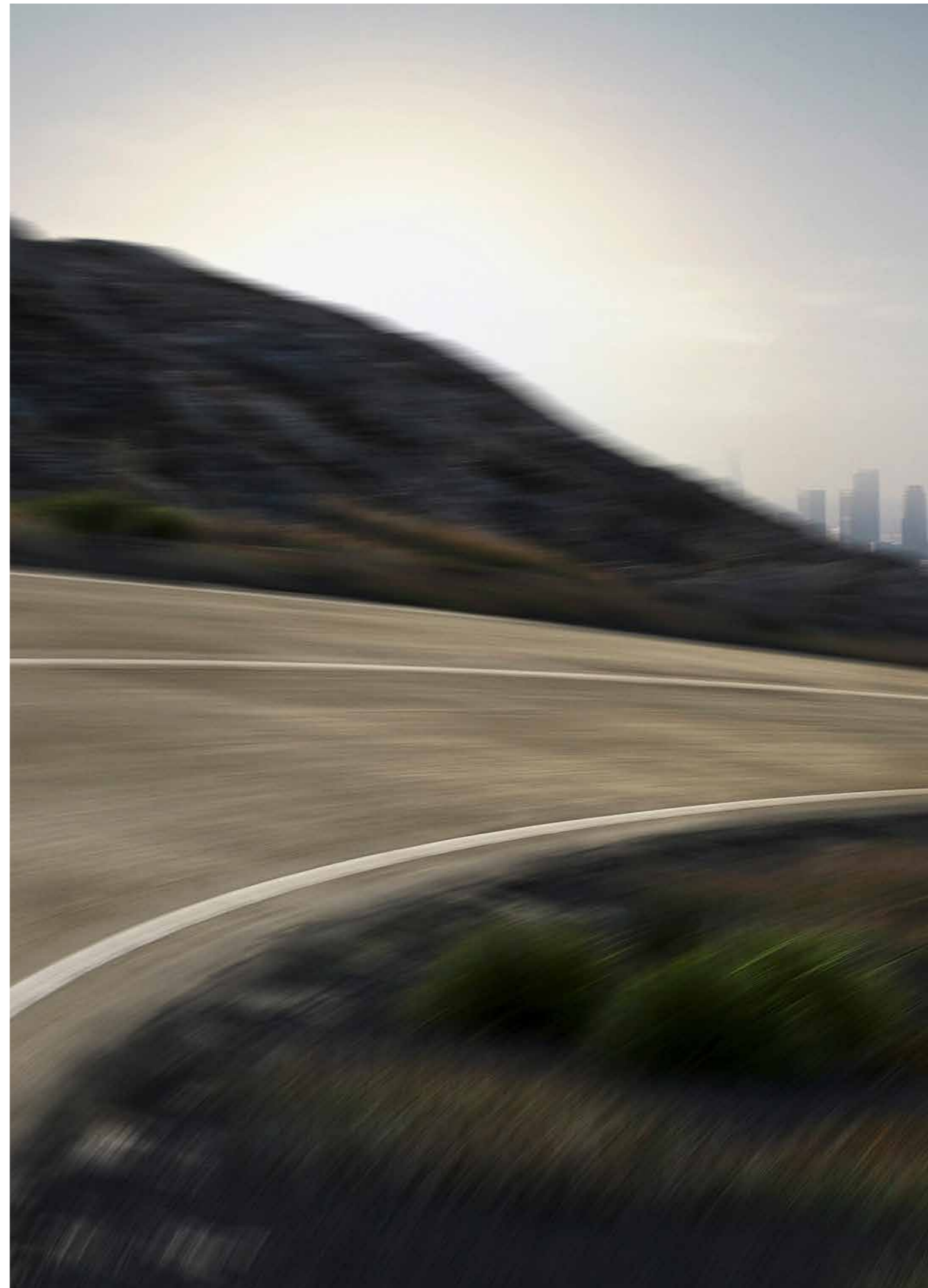
Commercial success and continuous improvement are what sets Porsche apart from its competitors. We challenge the status quo time and again – and the same is true when it comes to protecting the environment. As a manufacturer of exclusive, powerful sports cars, Porsche is committed to achieving greater acceptance of its company and products around the world through socially and environmentally responsible conduct.

Responsible actions that benefit not only the company, but also the environment and society, are not just expected by customers, business partners and investors – they are also crucial for ensuring competitiveness.

Back in 1996, Porsche introduced an environmental management system at its Zuffenhausen site – as one of the first companies in Baden-Württemberg to do so. This system defined various processes and responsibilities with the overall aim of progressing incrementally towards an environmentally friendly future. For over 20 years, this system has been monitored by independent auditors from the German TÜV.

These experts ask a wide range of questions: Is Porsche complying with environmental and energy-related legislation? How does the company conserve resources? How much energy does it use? All external sites were included for the first time in 2016. Porsche succeeded in obtaining an EMAS certification (a voluntary instrument developed by the EU) once again. The company is also certified in accordance with the internationally recognised standards ISO 14001 (environmental management) and ISO 50001 (energy management).

Although it designs the sports cars of the future, Porsche is already firmly committed to reducing carbon dioxide (CO₂) and particulate matter (PM) in today's vehicles. This Environmental Statement not only documents our extensive efforts, but also serves as an incentive for us to persevere tirelessly in these efforts.





The sports car of the future will blend the tradition and values of the Porsche brand with innovative technologies, while at the same time ensuring sustainability.

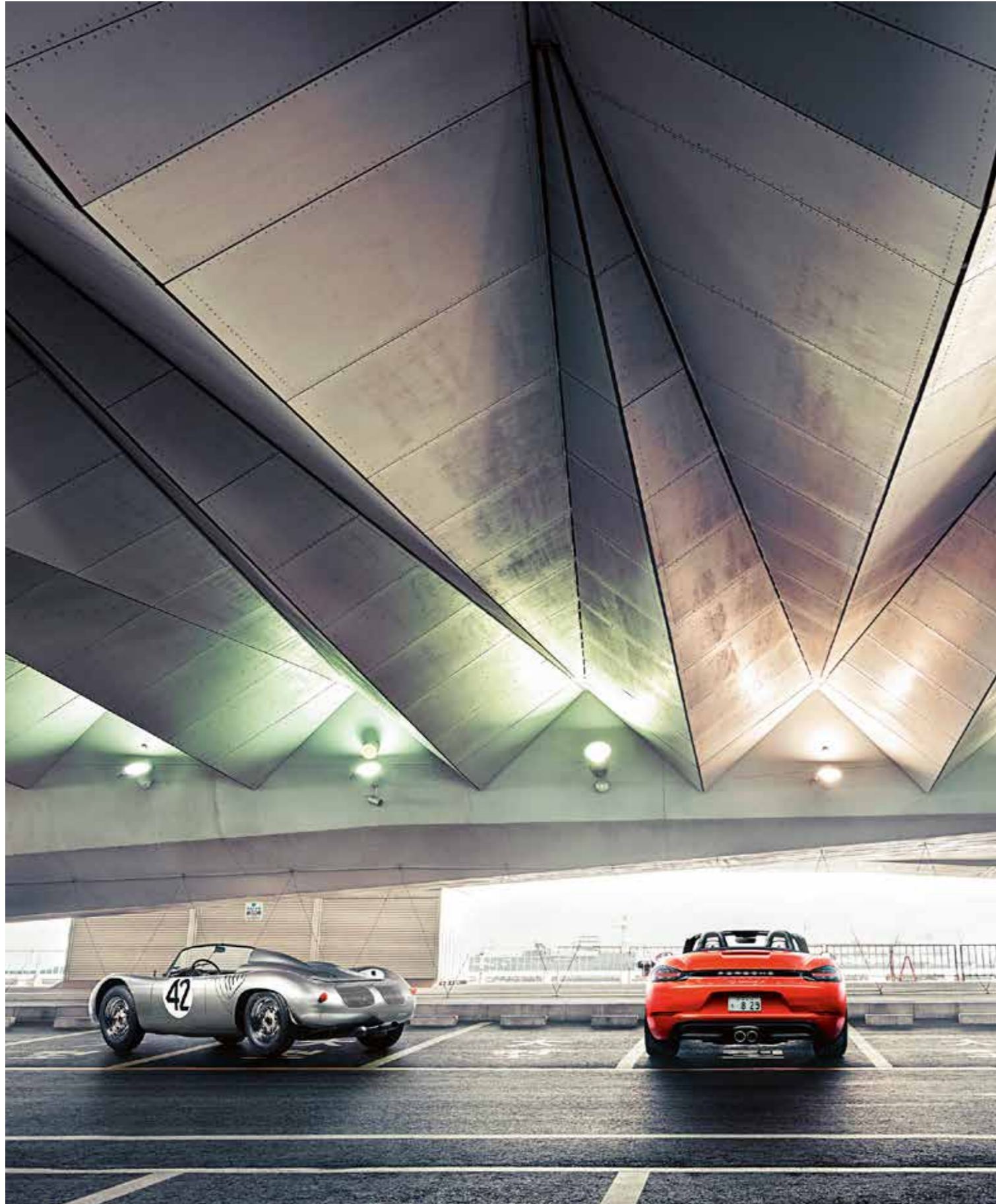


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01 What?

Porsche and sustainability



Sustainability is of the utmost importance for Porsche. Sustainable action is a central business objective of the Porsche Strategy 2025. As a cross-sectoral issue, sustainability is firmly anchored in all areas of the company. The Chairman of the Executive Board is directly responsible for this matter. Porsche believes that one of its core tasks is assuming its responsibility towards people, the environment and society. The company also wants to set new benchmarks in this area.

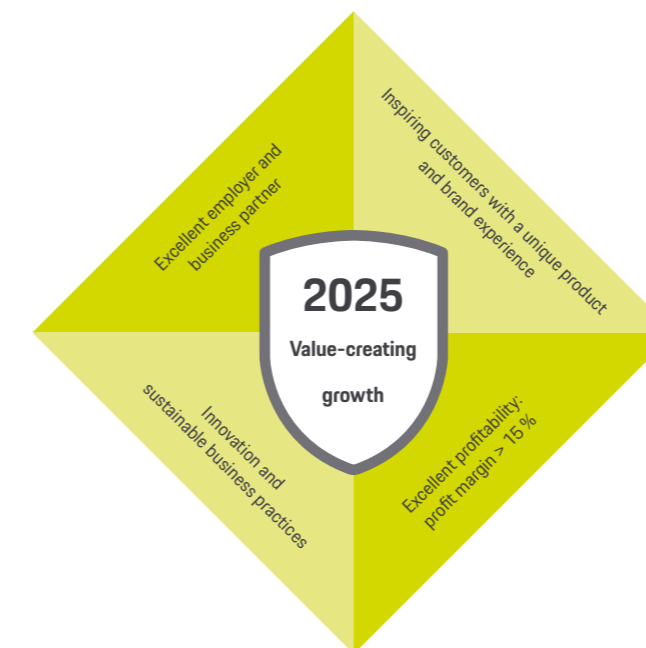
Sustainability in the Porsche Strategy 2025

The Porsche Strategy 2025 is a project dedicated to shaping the future of the sports car. In the 2016 reporting year, the workforce and management jointly developed this new business strategy for the decade ahead. The strategy centres around the future product portfolio. The sports car of the future will blend the tradition and values of the Porsche brand with innovative technologies, while at the same time ensuring sustainability. Topics such as electromobility, digitalisation and connectivity are vital in this regard. Porsche has set itself the task of shaping the exclusive and sporty mobility of tomorrow. The company's main objective is to achieve value-creating growth. Only by doing so can Porsche make sustainable investments in innovative technologies, new products and employees.

Porsche inspires its customers with unique products and services. The company wants to further strengthen its excellent reputation as an outstanding employer and business partner that assumes responsibility for society and the environment. Profitability, efficiency and social responsibility are not mutually exclusive for Porsche.

In the future, sustainability aspects are to be well represented and promoted in all areas of the company – from development to sales. All departmental sub-strategies therefore contain objectives and projects relevant to sustainability. These include specific measures for enhancing sustainability in the supply chain, for improving the environmental compatibility of products throughout their lifecycle and for the further integration of sustainability in important company processes, such as risk management. All corresponding topics are structured according to the four central focus areas for sustainability at Porsche, as well as the additional work packages of "Integration in processes" and "Communication and stakeholder dialogue". The ongoing definition and measurability of content, as well as the continuous implementation of the overarching concept, are the responsibility of the sustainability team of the "Politics and External Relations" department in co-operation with the individual subject managers in the specialist areas.

The objectives of the Porsche Strategy 2025



Focus areas at Porsche AG

Porsche has defined four focus areas as a basis for structuring and managing the company's sustainability activities: These not only cover the classic sustainability dimensions of economy, ecology and social matters, but also consider the role of Porsche as a manufacturing company. The four focus areas are used to structure all business activities and projects relating to sustainability, as well as the company's strategic considerations and objectives.

In day-to-day activities and also far-reaching company decisions, managers and employees alike are guided by the overarching principles of corporate governance. These provide a framework for productive and responsible co-operation in accordance with the law and contain guidelines for decision-making and management processes. The internal compliance code, for example, facilitates the observance of legal regulations and company-specific guidelines. As part of the Porsche Strategy 2025, sustainability is established as a central component of the compliance code. The Porsche culture is described in the management guidelines, and serves internally as a foundation for important topics such as employee development, internationality and cultural diversity, as well as the specific matters of sustainability and social responsibility. In addition, numerous operating agreements and Group and company guidelines provide a regulatory framework.

Focus areas at Porsche AG



Sustainability principles

The company's sustainability activities are guided by four principles, which are based on the aforementioned focus areas and have been approved at the highest level by the Executive Board of Porsche AG.

1. Business & customers

Our corporate activities aim to create satisfied customers, economic stability, value-creating growth and socially accepted products. We combat corruption and embrace fair competition, respect the observance of internationally recognised human rights and categorically reject any type of forced or child labour.

2. Product responsibility

We develop high-quality, innovative and durable products that offer typical Porsche performance. Quality, environmental compatibility and safety are continuously optimised throughout the lifecycle of our vehicles.

3. Environment & energy

The conservation of natural resources is one of the primary objectives of our company. The environmental impact of development and manufacturing processes must be kept to an absolute minimum. With this in mind, environmental compatibility and the efficient use of energy are checked on a continuous basis along the entire value chain, and improvements made where necessary.

4. Employees & society

People are at the heart of Porsche – this applies both to our employees as well as to our society, of which we consider ourselves a part. We accept responsibility for these people and want to invest in their future. In addition to the continuous development and qualification of our employees, other important aspects of this Porsche culture include equal opportunities, diversity and co-determination, as well as the ongoing improvement of our employees' work-life balance and providing fair, performance-based remuneration. As part of our local and international social commitment in the areas of "social matters", "education and science", "culture" and "sport", we initiate our own projects and support external partners in conducting their own important social activities.

Sustainability organisation

A clear internal structure with defined roles and responsibilities enables the stringent and effective processing of sustainability topics within the company. The Executive Board of Porsche AG serves as the highest sustainability committee, and meets at least twice a year in the form of the "Sustainability Board". As well as deciding the company's basic strategic orientation, the Sustainability Board also addresses the implementation of flagship projects and far-reaching sustainability measures. The sustainability team of the "Politics and External Relations" department acts as an interface for all sustainability-related topics within the company. It is tasked with the co-ordination of all sustainability activities, implementation of the sustainability strategy, reporting and inclusion in the Group-wide sustainability activities of the Volkswagen Group. In addition, it safeguards internal and external communication, as well as the ongoing development of the stakeholder dialogue.

The "Sustainability Expert Group" is responsible for the alignment and content of the company's sustainability activities and for devising corresponding proposals for the Executive Board. It features a cross-departmental structure and convenes four times a year. The permanent members of the Sustainability Expert Group represent sustainability-related areas from all company departments, within which they function as multipliers for sustainability issues.

Porsche AG sustainability organisation



02 Why?

Environmental policy of Porsche AG



The prevailing social and ecological conditions and the burdens placed on the environment through the growth in population and production demand a new self-perception for entrepreneurial considerations and actions. The effects of all operational actions and manufactured products on the natural foundations of life must be regarded holistically and incorporated into entrepreneurial actions.

The declared goal of Porsche AG is to minimise the damaging effects of all activities on the environment to the greatest extent possible and, in addition to this, to support international efforts to achieve solutions to the global problems of environmental protection. No revision of our environmental policy was required in the period under review.

- We develop, produce, sell and service high-quality, exclusive sports cars that feature the highest level of environmental and safety technology and exude a great fascination.
- We want to use resources sparingly and keep harmful environmental impact as low as possible.
- We develop products and manufacturing processes that are as environmentally friendly as possible, and we constantly strive to assess their environmental impact in advance.
- The long service life of our products is an essential component of the Porsche concept. This enables us to actively save on resources and power.
- It goes without saying that Porsche meets all applicable environmental regulations. The continuous improvement of environmental protection in the workplace is a top priority.
- We will inform the public regularly concerning environment-related procedures at the company, and we are committed to an open and trusting dialogue with the governmental authorities and relevant organisations.

The Environmental Guidelines of Porsche AG support the implementation of the environmental principles.

Porsche environmental guidelines

- Our employees are our most important partners when it comes to protecting the environment. They are well informed about the importance of their activities for the environment and receive systematic training.
- Our facilities are set up and operated to have as little impact on the environment as possible. The effects on the environment are established and assessed at regular intervals.
- We include our business and contractual partners in our efforts to protect the environment.
- The environmental impacts of our activities are regularly analysed, assessed and appraised, and are continually optimised using the best and most economically viable technologies available.
- Specific environmental targets and programmes have been drafted and implemented for all operational functions.

Porsche is conscious of its responsibility in terms of environmental protection that is fit for the future and takes a responsible approach to resources and energy. Over and above mere compliance with laws and regulations, Porsche believes it is self-evident that the company should make sustainable use of innovative and energy-efficient plant technology that is also resource- and climate-friendly.

Milestones on the journey from an environmental policy to a vision of a Zero Impact Factory

- 1995: Adoption of an environmental policy by Porsche AG 1995 onwards: Implementation and further development of environmental management
- 1996 onwards: EMAS validation
- 1999 onwards: ISO 14001 certification
- 2005 onwards: Participation in greenhouse gas emissions trading scheme
- 2011: Implementation of Group Directive on "Environmental Management"
- 2011 onwards: ISO 50001 (energy management) certification
- 2012: Porsche Strategy 2018
- 2014: Publication of first sustainability report (for 2013)
- 2015: DGNB (Deutsche Gesellschaft für Nachhaltiges Bauen, German Sustainable Building Council) pre-certificate for Plant 4
- 2016: 20 years of EMAS at the Zuffenhausen site
- 2016: Porsche Strategy 2025
- 2017: Vision of a Zero Impact Factory
- 2017: DGNB platinum certificate for Plant 4

03 Why?

Mission E: On the route to a Zero Impact Factory



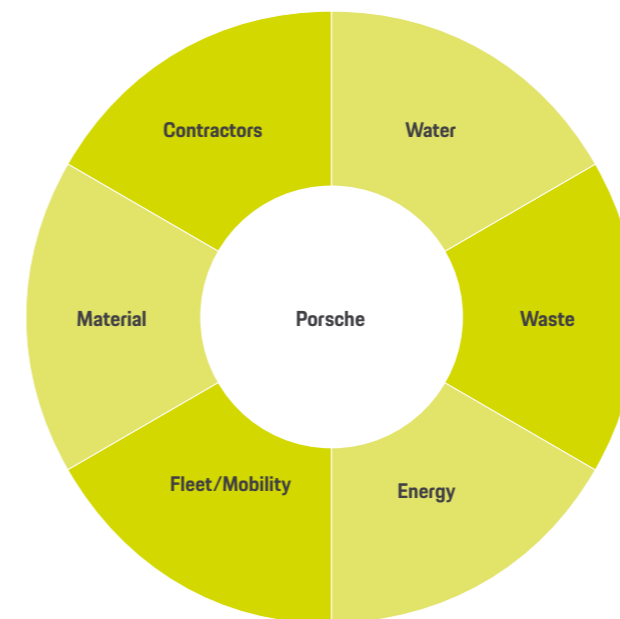
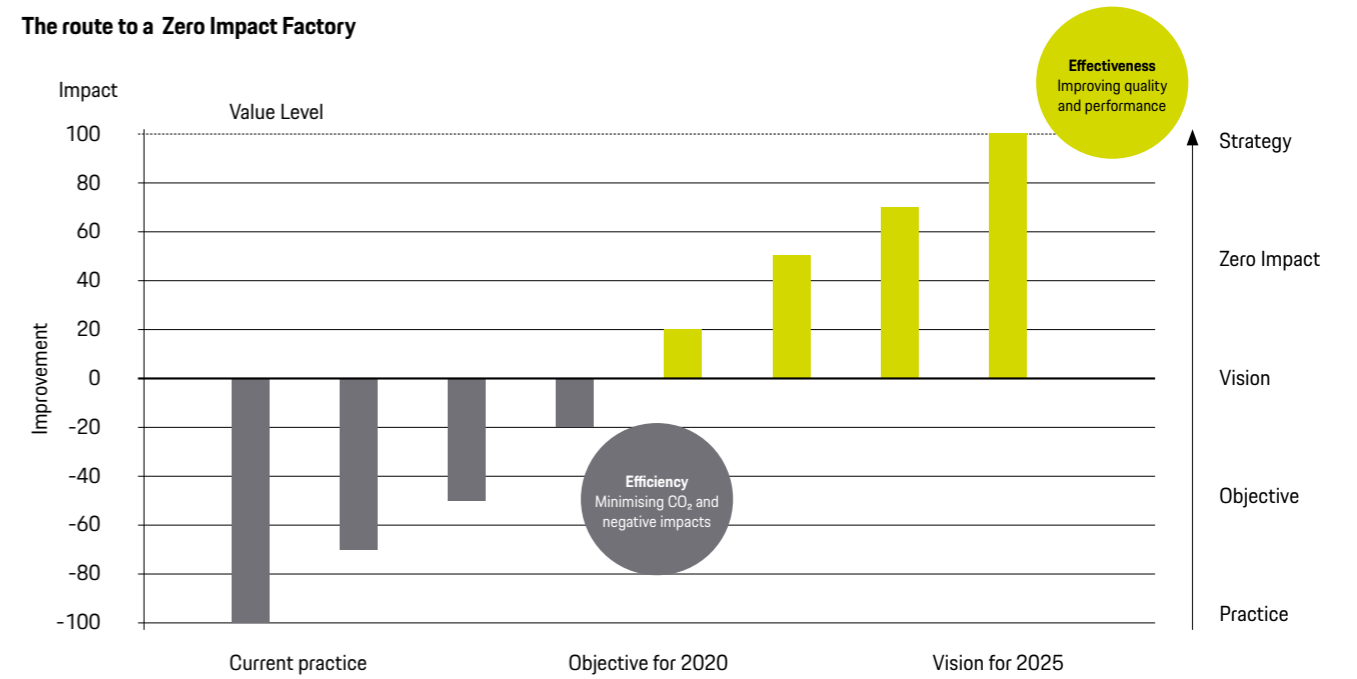
Green light for Mission E at the Zuffenhausen site

The first fully electric Porsche vehicle is soon to hit the road. It marks the beginning of a new chapter in sports car history. The market launch is scheduled for the end of this decade.

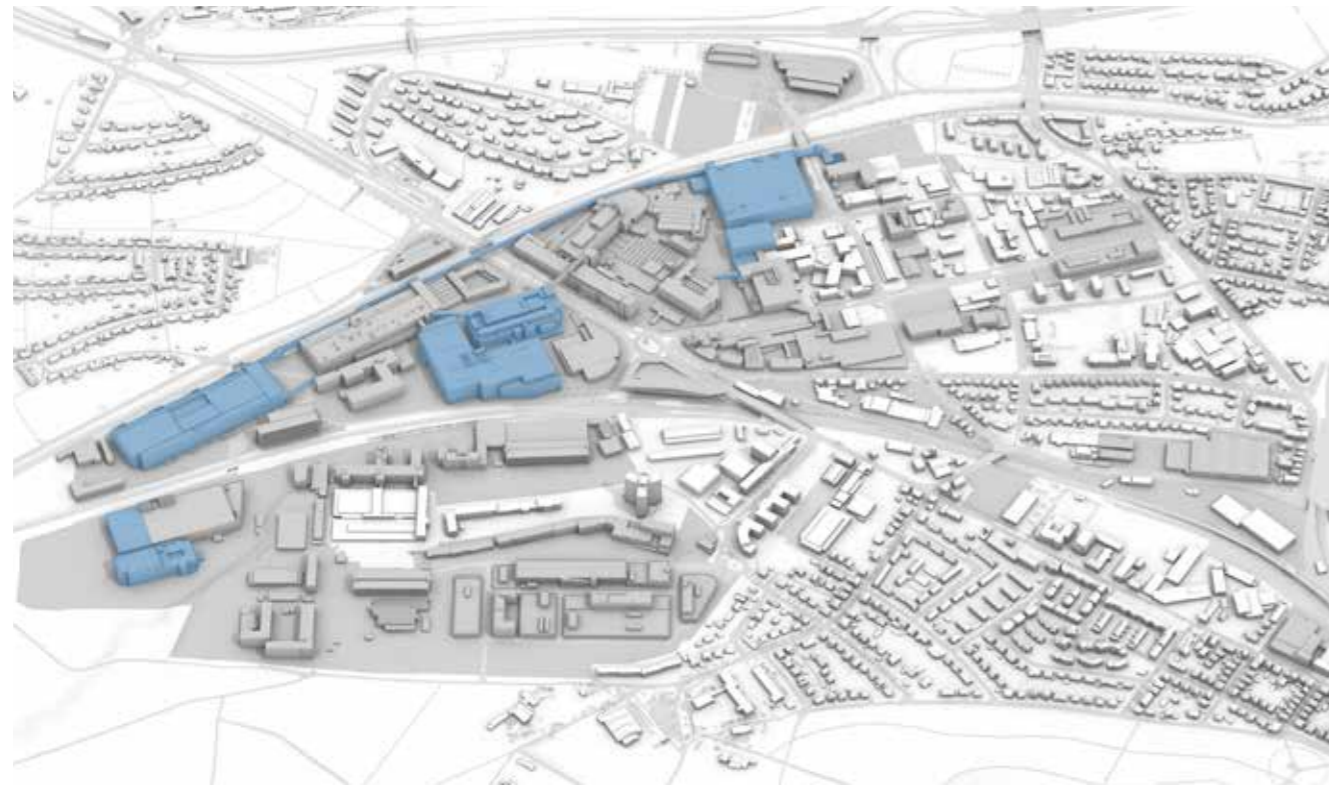
Faced with the challenge of e-mobility, Porsche has made the logical choice to build a new factory that is fit for the future. With this in mind, a vision has been developed that lays out a new path and that broadens the DGNB certification method to include a range of

new factors. These include not only the carbon footprint, but all environmental impacts such as energy and resource consumption, water, waste and mobility around the site. Taking into account the need to compensate for these environmental impacts, over the long term Porsche aims to move its production site ever closer towards the goal of becoming a Zero Impact Factory.

The route to a Zero Impact Factory



This vision emphasises the significance of our main plant at Zuffenhausen, Baden-Württemberg as a technological hub, and the German automotive industry as a whole.



Expansion of the new engine plant | new paint shop | new body shop | final assembly of Mission E | conveyor technologies

The mission begins

To make the Mission E a success, new production facilities are scheduled for completion in May 2019. The Zuffenhausen site has been restructured so that it can produce not only the sports car models already manufactured there, but also the first fully electric Porsche vehicle. This involves expanding the body shop and building a new paint shop, assembly hall and engine assembly line, as well as installing new conveyor technology throughout the site. Before commencing a project of this kind, it was necessary to provide local residents with comprehensive information and involve them in the process. Prior to submission of the permit application on 14 March 2016, Porsche therefore issued invitations to a Neighbourhood Information Event at the Porsche Museum. At this event, local residents asked questions and expressed concerns; these were then incorporated into the project. Additional information events for local residents and interested parties were organised on 18 April and 14 October 2016.

Everyone present at these events was very keen to exchange information and opinions. The local newsletter "targa", which is distributed to local residents several times a year, also contains news and important information about the Mission E project.

The Mission E project and the associated construction works are in full swing, and the first fully electric Porsche vehicle is expected to be manufactured in 2019. An application for approval under pollution protection legislation – including planning permission with all the relevant clauses – was submitted to Stuttgart Regional Council in August 2016.

Approval processes of this kind are always time-consuming, and this was particularly true in the case of the Mission E project given the need for public consultation. All of the environmental impacts of the construction and redevelopment project had to be identified, such as potential impacts on humans, flora and fauna, the landscape and cultural heritage. After local government officials had examined the application for seven months, Porsche was granted approval in late February 2017 – without any objections having been lodged. The first redevelopment application was submitted in early April 2017, and was followed by a second application at the end of the year.

Prior to the demolition works and the start of construction, extensive investigations were carried out on the site to identify any existing pollution. A dust reduction concept has been developed and implemented to reduce the dust generated during demolition. Several wet sweeping machines will remove dust and sprinkle the roads with water. Fog machines have been installed at the construction site exits, with water curtains to prevent diffuse dust emissions.

Noise levels are monitored on a regular basis to maintain constant awareness of the noise generated by the construction sites. Findings are regularly evaluated and documented.

Nature conservation also plays a key role in the implementation of the Mission E project. Expert opinions on species and nature conservation were produced for all of the construction sites. Action plans were drawn up on the basis of these expert opinions with a view to compensating for the loss of habitats and preventing any accidental animal deaths during construction site activities. Several hundred metres of reptile protection fences have been erected. Nesting boxes for birds and bats have also been installed at the Zuffenhausen site. Despite the construction of the new buildings, birds and bats will continue to have a home here.

A factory site which is close to nature

Densely populated regions such as the metropolitan area of Stuttgart are characterised by a significant lack of habitats for flora and fauna. Valuable habitats and refuges for wildlife can be created on land owned by companies. Especially in urban areas, replacement biotopes are quickly populated by plants and animals.

The Mission E project in Zuffenhausen will involve major redevelopments – not only of the factory, but also of the green spaces around it. This redesigning of the company's outdoor areas will be based on a concept that is currently at the planning stage.

Mobility concepts

To achieve lasting improvements in transport and mobility for all employees at Porsche sites – Zuffenhausen in particular – a cross-departmental project has been launched under the name "(Employee) mobility at Porsche". The project incorporates measures to reduce traffic on the main entrance and exit routes for employees, as well as on shuttle routes between the sites. Improvements to parking and mobility on company grounds are also planned. The following measures have already been implemented successfully:

Porsche and public transport

One of the pillars of the new Porsche mobility concept is to make it easier for employees to commute to work using public transport.

- Since September 2016, Porsche employees have been entitled to a 10 % discount on a corporate season ticket for journeys within the VVS area (Verkehrsverbund Stuttgart, Stuttgart Transport Association), instead of a 5 % discount as was previously the case. Porsche also provides its employees with a monthly season ticket grant.

- A Porsche factory ID card can be used as a ticket for business-related travel on the suburban train shuttle route between Zuffenhausen (Neuwirtshaus, Porscheplatz) and the new Porsche site at Weilimdorf.

- On days when the city of Stuttgart has issued a "particulate matter alarm", all Porsche employees are entitled to travel for free on public transport within the VVS area using their factory ID card.

Carpooling app for Porsche employees

To reduce congestion and parking problems at the Porsche site, a carpooling app has been introduced for Porsche employees. The free app gives employees a quick and easy way to find carpooling opportunities amongst their colleagues – whether travelling to and from work or on their next business trip.

Porsche prepares for the age of e-mobility

As part of the electrification of the Porsche sites, new billable charging stations for electric vehicles are now available to every Porsche employee and every external visitor. The system is compatible with all electric vehicles available on the market, as well as plug-in hybrid vehicles.



Restructuring of the Zuffenhausen site in readiness for production of the first fully electric Porsche is in full swing.

04 Where?

Porsche and the Zuffenhausen site



Porsche production at Zuffenhausen – facing the future with courage

In 2017, the millionth 911 rolled off the production line in Zuffenhausen – a Carrera S in the special colour “Irish Green” to emulate the original 911 models from 1963. The two-door car remains the most strategically important model in the product range and makes a huge contribution to maintaining Porsche’s position as one of the most profitable car manufacturers in the world.

Ramping up production at Porsche: Efficiency rather than overload

With the new generation of the 718 Cayman, the production of all two-door models (911, 718 Boxster and 718 Cayman) has been bundled together at Zuffenhausen. The company used the gradual shift of 718 Cayman production operations from the Volkswagen Osnabrück plant to Stuttgart as an opportunity to increase productivity significantly, to around 240 sports cars per day. This was achieved through technical and organisational optimisation of the production system.

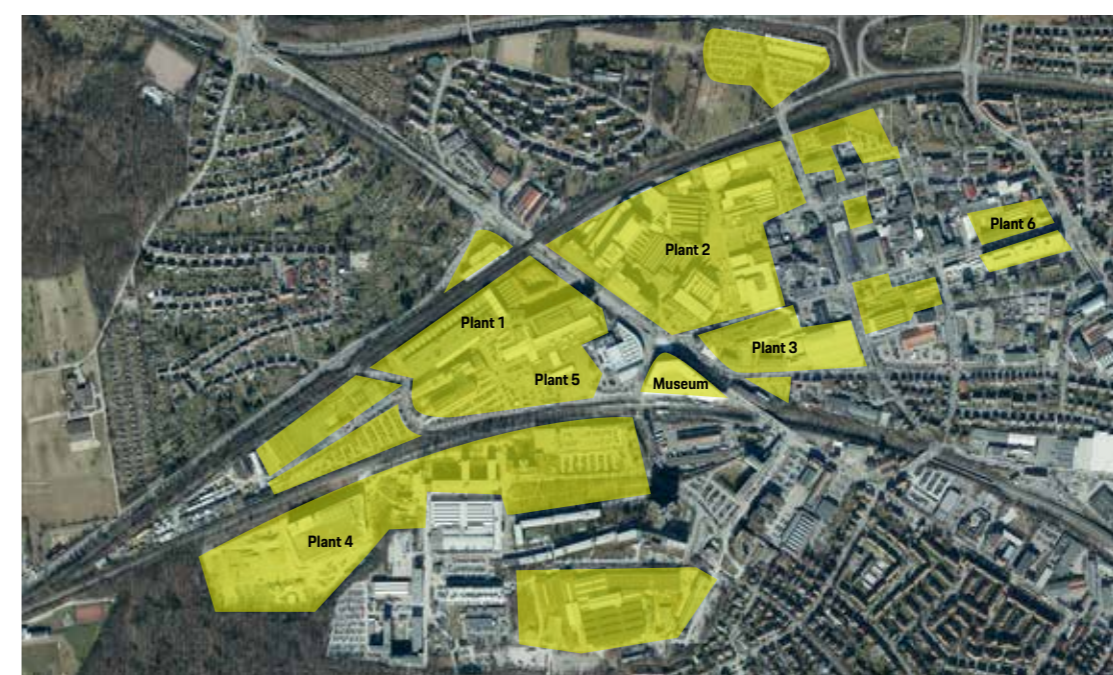
Facts and figures about the Zuffenhausen site

The Zuffenhausen site manufactures the 911, 718 Boxster and 718 Cayman model lines, as well as flat and V8 petrol engines for all Porsche sports cars manufactured at the Zuffenhausen, Leipzig, Bratislava and Osnabrück production sites.

The complex of buildings at the production site, which is located in the Zuffenhausen area of Stuttgart, has grown over the course of time. Several roads criss-cross the area. Tailored solutions are needed to allow flexible production in a confined space. The multi-storey production setup in the area of body and vehicle assembly is a further special feature that underlines the unique character of the Porsche factory in Zuffenhausen.

As well as sports car and engine manufacture, the Zuffenhausen site is also home to the company’s administrative departments (including HR, Finance, Production and Distribution), the Group Works Council, the Training Centre, Porsche IT, the Health Centre, multiple staff canteens and – last but not least – the Porsche Museum.

- 911, 718 Boxster, 718 Cayman model lines:** 49,705 vehicles
- Engines for all model lines:** 110,475 engines
- Employees at Zuffenhausen site:** 9,417 employees
- Area:** 643,460 m²



Scope of EMAS at Zuffenhausen site



Production areas at the Zuffenhausen site: body shop | paint shop | vehicle assembly | QA | saddlery | logistics

Body shop

In the semi-automated, high-tech body shell construction area, vehicles are produced in a model-mix system. This means that all variants of the Porsche 911, 718 Boxster and 718 Cayman can be manufactured in any sequence on a single production line.

More than 300 pressed parts, profiles, cast parts and sub-assemblies are required for the body shell. On production islands, the individual components are packetised by joining technology robots to form sub-assemblies such as the front vehicle, back vehicle, central undercarriage and side panels. These individual components are joined to form the undercarriage assembly on the undercarriage line. The side panels are then fitted to the undercarriage assembly on the geometry line and are fully welded, thus creating the body shell. In the final assembly area, the attachment parts such as doors, bonnets and wings that were also made on separate production islands are joined to the body shell. The fully assembled body shell

then runs through various finishing stations before being transported to the paint shop over the new connecting bridge. The roof of the current Porsche 911 generation is no longer welded but supplied as a module and attached to the painted car body.

In the assembly area, the once-favoured spot welding procedure is no longer the primary joining technology. The vehicles' aluminium/steel hybrid construction means that other cold production processes such as clinching, punch riveting and flowdrill screws are coming to the fore. The use of adhesives not only increases the stability of the body shell, but also prevents contact corrosion and additionally seals the body shell. Measures to optimise adhesive consumption and reduce adhesive residues have been specified in the environmental and energy objectives. Low-resource and efficient use of materials and energy has traditionally been afforded high priority in car body production.

04 Where? Porsche and the Zuffenhausen site

Paint shop

The painting process is subdivided into several stages. The car bodies are first prepared for surface coating by being cleaned, degreased and chemically treated in a pre-treatment tunnel using various dip, rinsing and spray treatments. Next the car bodies undergo cathodic dip priming: in this electrochemical process, the metal receives a first coat of paint in a dip bath and is then heated to the reaction temperatures required for hardening. The car bodies then pass through various sealing stations.

In three subsequent coating stages, the surface is coated with water-based filler coating paint, water-based colour paint and a two-component clear varnish to protect the body against environmental impacts. After each individual stage, the paint is hardened in dryers.

An electrostatic separating system binds excess paint mist. The solvents released in this process are filtered by a wet-chemical waste-air cleaning system and can be reprocessed. 70 % of the cleansed air is circulated back into the cycle; the remaining 30 % waste air contains a far lower concentration of solvents than the statutory threshold value. Measurements are less than half the threshold value of 35 g/m² of body area.

Thanks to the efficient use of materials, waste is either avoided, reduced or re-used. Intelligent energy management, consistent heat recovery and insulation of the dryers used in the interim phases also save additional energy.

Vehicle assembly

A further speciality of the Zuffenhausen site is vehicle assembly in a model mix distributed over several floors in the building; this demands innovative and efficient plant technology and also committed, flexible and highly qualified employees. Final assembly starts with the wiring. The cockpits are pre-assembled parallel to the production line and then fitted into the vehicles on the line.

To complete the interior, the vehicles are then lowered down to the first floor. The engine, gearbox and axles are assembled onto synchronised driverless transport systems and then fitted into the car body. The "marriage" then takes place, when the power transmission and chassis are joined to the car body. After the assembly of further add-on components, the vehicle is placed on its wheels for the first time.

The doors completed on the pre-assembly line are supplied to the line just in time and mounted. Then the seats are installed, before conveyor equipment passes the finished vehicles over to final assembly on the ground floor where each vehicle is tested and prepared for its first journey.

At further control stations, the checks carried out include a visual inspection of the cables, the torque and the screw connections, followed by a leak test and other precision work on the finishing line. A blow nozzle test stand that simulates headwind enables even the slightest wind noises to be detected – independently of weather and traffic. After the final paint checks and cleaning, the vehicles stand at "counting point 8" ready for delivery.

In the vehicle assembly area, the focus of environmental efforts is on preserving resources, energy efficiency, pollution control and plant safety. Work is continually undertaken to reduce or entirely avoid packaging materials and the associated waste.

Saddlery

Porsche places great emphasis on tradition, which is why the company still operates its own saddlery. This is where the majority of the leather interiors are manufactured for the series fittings and special options of the Carrera and Boxster vehicle types, which involves a high level of craftsmanship and widely varied production depth. Meeting individual customer requirements is the number-one priority.

The saddlery's tasks include covering the instrument panel, the door trims, the sides at the rear of the passenger compartment and the centre console with leather. The leather-covered interior parts are delivered just in sequence to the assembly line in Zuffenhausen.

Process optimisation and the use of robot technology in the saddlery have contributed towards reducing solvent emissions and the consumption of adhesives. Measurements are less than half the threshold value of 50 mg/m³ total carbon emissions thanks to treatment of the waste air containing solvents in a downstream waste-air purifying system.

Porsche attaches great importance to the responsible use of leather products, as well as to their origin and processing. The leather used for our vehicles is procured exclusively from European tanneries that guarantee that their raw goods are obtained from European bulls. All our leather suppliers are located in the European Union, as are the regional abattoirs. Of course, these abattoirs must always comply with the statutory regulations on animal welfare and slaughtering that apply in the relevant countries.

Sustainable and high-quality work: Over 70 %
of all 911s ever built are still roadworthy today.



Logistics

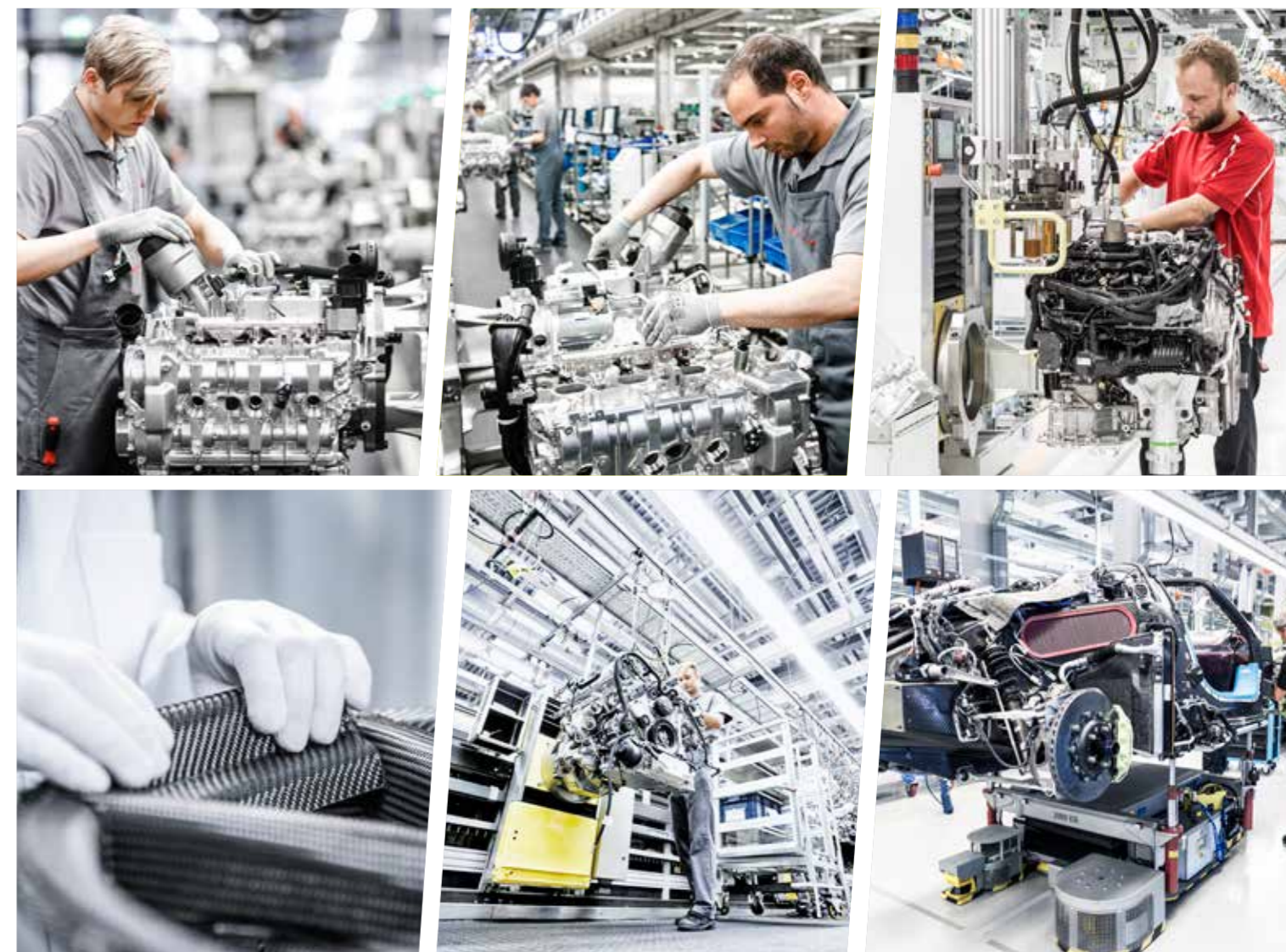
The maxim that always applies to logistics at Porsche is to make the right goods available, in the right quantity and quality, at the right time and place. Logistics is responsible for planning, cross-functional organisation and control and for handling the entire flow of goods and materials, including the corresponding information and documentation systems. Sustainable, efficient and environmentally sound processes are of great importance in this respect. The aim is to minimise packaging materials, avoid transport operations and use environmentally friendly carriers to conserve resources, reduce emissions and waste, and minimise risks.

The carriers contracted for transport logistics must also comply with environmental requirements, such as the use of low-emission vehicles, the completion of driver training or specific maintenance intervals for vehicles. 100 % of lorries belonging to carriers used by Porsche were classified in the emission class 5 or better in 2016.

Another focus is on the use of alternative, low-emission drive technologies to reduce emissions. A diesel/LPG hybrid lorry was put into operation on the daily round trip between Soest and Zuffenhausen in 2016. Based on an annual distance of around 410,000 kilometres, CO₂ emissions were reduced by around 22.5 tonnes. This corresponds to a reduction of at least 10 %. Since 2017, two CNG lorries have also been used for daily transport operations between the sites in Baden-Württemberg. This has reduced previous CO₂ emissions by up to 20 %. The CNG lorries emit 80 % less particulate matter and 90 % less carbon monoxide than conventional tractor units. Last but not least, CNG trucks are also considerably quieter. Plans exist for the use of alternative technologies on additional transport links.

At the end of the production chain, Logistics ensures that service providers deliver the vehicles promptly to dealers worldwide. Depending on the target destination, transport is either by means of lorry, rail or ship. Porsche set a course towards eco-friendly transport logistics at an early stage, and the proportion of transport by rail has increased to approximately 50 % across all sites.

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Engine assembly and components:
assembly of flat engine | assembly of old V engines | assembly of new V engines | JIT supply of materials | picking | axle assembly

Engine assembly and components

A high level of efficiency and flexibility: these concepts are experienced anew every day in the two engine plants at the Zuffenhausen site. Whether engines for the 911 derivatives, 718 Boxster or 718 Cayman, or V8 engines for the Cayenne and Panamera – all of them are manufactured in Zuffenhausen. All flat engines and the V8 engines for the Cayenne and Panamera model lines are produced in a model mix on one line and then supplied to the production division in Zuffenhausen, to Porsche Leipzig and to Volkswagen in Osnabrück and Bratislava.

Axle mounting

The front and rear axles for the two-door sports car model lines 911 and 718 are manufactured completely in-house. The axle assembly area produces approximately 300 variants in sequence for the two vehicle factories at Porsche Zuffenhausen and Volkswagen Osnabrück.

Series and spare part production in mechanical production

A high-performance cylinder head has been specially developed for the Porsche 911 GT3 engine; it is partly made on a special five-axle processing machine in the mechanical production area.

Mechanical production for spare parts/replacement parts concentrates on manufacturing crankcases, cylinder heads, piston rods, bearing brackets and bucket tappet housings to meet the demand for spare parts.

Production of spare and replacement engines

Spare and replacement engines are manufactured in Plant 6 of the Zuffenhausen site. During the production of replacement engines, used engines recovered from the market using efficient recovery logistics are disassembled, cleaned, tested, reconditioned and reassembled. Various technical parameters are then checked on a cold test rig.

Expansion of the Zuffenhausen site

The company's investment programmes mean that Porsche is growing faster than ever before. In Zuffenhausen alone, Porsche has invested more than €300 million over recent years. With a view to implementing future projects and further developing the inner-city real estate it already owns, Porsche AG has spent a number of years expanding its property portfolio in Stuttgart by more than 600,000 m², more than doubling it in the process.

Porsche is planning further investments over the years to come – totalling more than €1 billion – which will safeguard the company's future growth. The main driver of these innovations is the first fully electric sports car. More than 1,200 new jobs will be created in Zuffenhausen alone. The company is investing over €700 million in Zuffenhausen.

Eight-cylinder engines in Plant 4

Our new engine plant is located in the western expansion zone of the Zuffenhausen site. This new facility focuses on flexible manufacturing based on the harmonious and efficient dovetailing of manufacture and automation. Assembly of the innovative eight-cylinder V engines requires ultra-precision processes.

Construction of this engine plant also represents a milestone for Porsche in terms of sustainability. The new building forms part of Plant 4, which was one of the first industrial complexes in all of Germany to be awarded a gold pre-certificate by the DGNB in 2015, and then a platinum certificate in 2017. These certificates are awarded on the basis of 40 sustainability criteria. One of the most noteworthy features of this building is the photovoltaic system on its roof, which generates up to 242,500 kWh of electricity annually. This equates to a saving of 105 tonnes of carbon dioxide compared with conventional methods. Large sections of the roof have also been covered with plants to help improve air quality.



Eight-cylinder engines will be manufactured within the award-winning Plant 4.

New body shop in Plant 5

In the immediate vicinity of the existing body shop, a cutting-edge building is being constructed that also reflects the state of the art in terms of energy efficiency: The new body shop will be used not only for the successor models of the current two-door sports cars, but also for the first fully electric Porsche, which will be launched on the market at the end of the decade. All the possible body derivatives will roll off the production line on the basis of a model mix approach. Where the future has tradition: The assembly building for the first electric Porsche vehicles is being constructed in Plant 2.



Where the future has tradition: The assembly building for the first electric Porsche vehicles is being constructed in Plant 2.

Mission E

The measures taken in respect of official approvals and building works for the fully electric Mission E, as well as the low-resource and energy-efficient objectives set for the construction of its new production facilities, are described above in Chapter 3.



A high level of efficiency and flexibility in the two engine plants at the Zuffenhausen site: all flat engines and the V8 engines for the Cayenne and Panamera model lines are produced in a model mix on one line.

05 How?

Environmental and energy management system



Guided by the requirements of Regulation (EC) No. 1221/2009 (EMAS) and by the international standards ISO 14001:2015 and ISO 50001:2011, environmental and energy management at the Zuffenhausen facility is a holistic system of interlocking measures.

The environmental management system for the Zuffenhausen production site was validated in line with EMAS for the first time in 1996. Since 1999, the Zuffenhausen site has also been certified in accordance with the international standard ISO 14001. In 2011, the integrated energy management system was certified in line with the international standard ISO 50001.

The Group Guideline P20 "Environmental and Energy Management", the corresponding corporate guideline for the Zuffenhausen site and the updated Environmental and Energy Management Manual describe all of the key environmental responsibilities and processes, and are updated on a regular basis.

Organisation of environmental and energy management

The previous organisational structure for operational environmental protection has been adapted to the new structure. The Group Guideline "Environment and Energy Management" redefines the roles of environmental management officer and energy management officer at Group and site level.

Responsible operator pursuant to Section 52bBlmSchG and Section 58 KrWG

The Member of the Executive Board for Production and Logistics, Albrecht Reimold, holds overall responsibility for environmental protection at the Porsche Zuffenhausen site on the basis of his appointment pursuant to Section 52b of the Federal Immissions Control Act (Bundes-Immissionsschutzgesetz, BImSchG) and Section 58 of the Closed Substance Cycle Management Act (Kreislaufwirtschaftsgesetz, KrWG). All systems operated at the site that may be relevant to environmental protection are assigned to him with regard to liability considerations.



"Careful use of resources and environmentally conscious, energy-efficient activities are a top priority for Porsche. They are firmly anchored in our corporate strategy."

Albrecht Reimold, Member of the Executive Board for Production and Logistics

**Group Environment and Energy Management Officer
Head of Environment and Energy Management**



"In recent years, awareness of the environment has come to characterise the culture in our factories just as much as it does our cars," explains Anke Höller. "Our vision of tomorrow's products should be based on the concept of a factory that does not have any impacts on the environment. This is what we call the Zero Impact Factory."

Anke Höller, Head of Environmental and Energy Management, is the Porsche Group's Environmental Management Officer

Operational environmental protection representatives

Representatives have been appointed for the topics of waste, water protection, pollution control and hazardous materials. They are responsible for providing technical advice during the planning process for new facilities. Their task is to encourage the use of low-resource, low-emission and energy-efficient technologies within the company. The representatives monitor compliance with the statutory regulations throughout the planning and approval stages, and subsequently during the construction and operation of buildings and facilities.

Environment and energy spokespersons

In production, the environment and energy spokespersons are the points of contact on matters relating to environmental and energy management. Their main task is to implement the environmental and energy management system. They regularly compile environmental and energy data and check its plausibility, steer environmental and energy audits for production and update the Head of Production about their activities on a regular basis.

"The company's renewed focus on low-resource and energy-efficient production means that existing processes are being investigated to see whether additional savings can be made. And aiming for the highest possible level of resource efficiency is naturally an integral part of any new project. As an environmental and energy spokesperson, I play an active role in bringing these measures to fruition. They help to make our factories even more efficient, and take us one step further along the road to the carbon-neutral factory of the future."

Andreas Tobisch, who has held the position of environmental and energy spokesperson for over 20 years

Elements of environmental and energy management

EMAS validation/ISO 14001 and ISO 50001 certification

The control audit requirement pursuant to EMAS, ISO 14001 and ISO 50001 was carried out in both 2015 and 2016. The certification organisations asked to perform these audits did not identify any major shortcomings. Documentary evidence was supplied of compliance with the requirements of EMAS, ISO 14001 and ISO 50001, and the effectiveness of the environmental management system.

Internal environmental and energy audits

Internal environmental and energy audits are conducted in all areas every year. Porsche sets the highest possible standards for these audits, and they are deliberately carried out with the involvement of an external environmental auditor.

Porsche compliance

Compliance involves meeting the requirements laid down in the applicable laws and in the company's own guidelines. It also means taking responsibility, and involves mutual respect and trust. Ensuring compliance is a task for all managers and all employees.

The compliance organisation that operates within Porsche AG includes environmental protection as one of its six thematic areas. Porsche has set itself the goal of protecting the environment; this involves not only complying with statutory regulations, but also making careful use of resources and energy. Its success depends on the efforts of every single one of its employees. A video published on the intranet entitled "Everyday environmental protection: you too can play a role" is intended to raise awareness of the issue of compliance, and offers valuable tips that employees can put into practice as they move through their working day.

Compliance with environmental and energy legislation

Compliance with all statutory requirements is a matter of course for Porsche AG and each of its employees. These requirements are laid down in EU-wide regulations, legislation adopted by the German Federal Government and the individual Federal States, and in municipal codes. Representatives within the Environmental and Energy Management Department monitor and evaluate all the relevant legislative developments, and inform other areas of the company about any changes they need to know about. No breaches of environmental legislation are known to have occurred at the site during the reporting period.

Risk prevention organisation

The aim of the risk prevention organisation within Porsche is to ensure that existing risks are identified and evaluated at an early stage using a systematic and continual Porsche approach based on a risk strategy. The risk prevention organisation also ensures that information on any irregularities is communicated to the responsible decision-makers in a systematic and organised manner and is coordinated by the responsible decision-makers in a three-stage catalogue of actions at an operative level and that the irregularities are then eliminated.

No significant discharges were identified during the 2016 reporting period. Two irregularities relating to the handling of water-polluting substances occurred on the company's premises; in both instances, these were minor leaks that could be stopped immediately or absorbed using binding agents.

Complaints were received during the reporting period about the noise generated by building work. The causes of these complaints were investigated, and the parties involved were informed. Noise measurements were performed on a regular basis in order to monitor the amount of noise generated by these building works.

Suppliers

Procurement is the key to value-driven growth. The goal must be end-to-end compliance with social and ecological standards along supply chains, and it is becoming ever more important for Porsche suppliers to achieve this goal. For some time now, these standards have therefore formed an integral part of the contracts concluded between the sports car manufacturer and its suppliers.

**Environmental and Energy Management Officer for the
Zuffenhausen site, Immissions Control Officer**

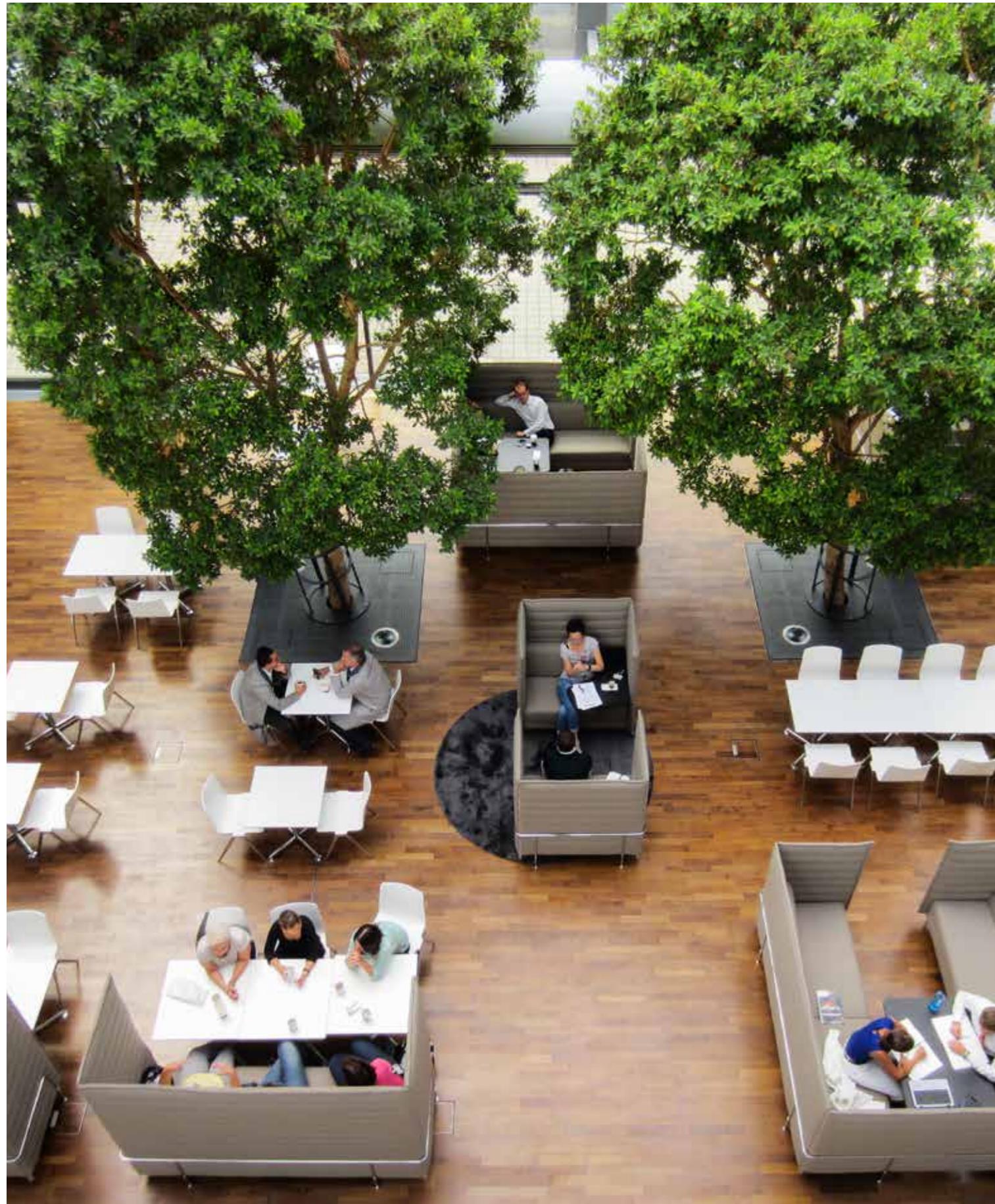


"The most important building block for a properly functioning environmental and energy management system is the involvement – and the enthusiasm – of our employees", explains Christoph Warth. "Support from each and every individual has enabled Porsche to protect the environment in the past and will make it possible to do an even better job in the future."

Christoph Warth, Environmental and Energy Management Officer for the Zuffenhausen site, Immissions Control Officer

06 Who?

Communications and publicity



Communications and publicity

Porsche promotes an open dialogue on environmental topics with governmental authorities, interest groups, local residents and the workforce. An Environmental Statement is published every year by the Zuffenhausen site as part of the EMAS validation. This contains a description of production, environmental and energy-related activities and the environmental impacts of the production site. The companies' environment and energy activities at the individual sites also form a central component of the Porsche AG Financial and Sustainability Report.

Dialogue with local residents

As mentioned in Chapter 3, a number of events were held in 2016 with local residents and other interested members of the public to continue the Porsche tradition of providing information in an open and transparent manner.

Around 600 local residents from Zuffenhausen attended a Neighbourhood Information Event held in March 2016 to find out more about the Mission E project and the associated building works. A large number of individuals also came to inspect the planning applications for this project when they were put on public display. Porsche places great importance on its dialogue with local residents, which is a source of important insights.



The local newsletter "targa", which is published twice a year, provides households in the communities of Zuffenhausen, Weissach and Leipzig (all of which are adjacent to Porsche sites) with information about the company's activities and future plans.

Internal communications

Information for employees

Motivated and qualified employees, whose ideas are incorporated into the work process, are our most important asset. Because it is only with the help of their knowledge, experience and expertise that the processes and rules of an environmental and management system can come to life. Porsche uses a range of media for this purpose, such as the Porsche Intranet ("Carrera Online") and the "Carrera-Standortzeitung" (the site's in-house newspaper). The "Carrera-Standortzeitung" is published every 14 days and contains news on topics relevant to the company. The Carrera Magazine is also published twice a year, and features a wealth of background information.

Environmental protection qualifications

Porsche employees engaged in environmental and energy management efforts conduct site-specific and plant-focused environmental and energy-related training courses. For example, these courses are offered to employees in the planning and maintenance departments, persons with responsibility for hazardous goods and individuals who hold corporate responsibility under the German Water Management Act (Wasserhaushaltsgesetz, WHG).

Idea management - ideas for our future

Idea management at Porsche offers every individual employee an opportunity to participate in the life of the company beyond his or her individual tasks. It represents an important building block of organisational development within the Porsche Group. Idea management promotes the concept of a learning organisation, provides an incentive to make vital improvements to processes and drives innovation.

1. An idea is submitted

2. The idea is reviewed and evaluated

3. A prize is awarded for the idea

07 By what means?

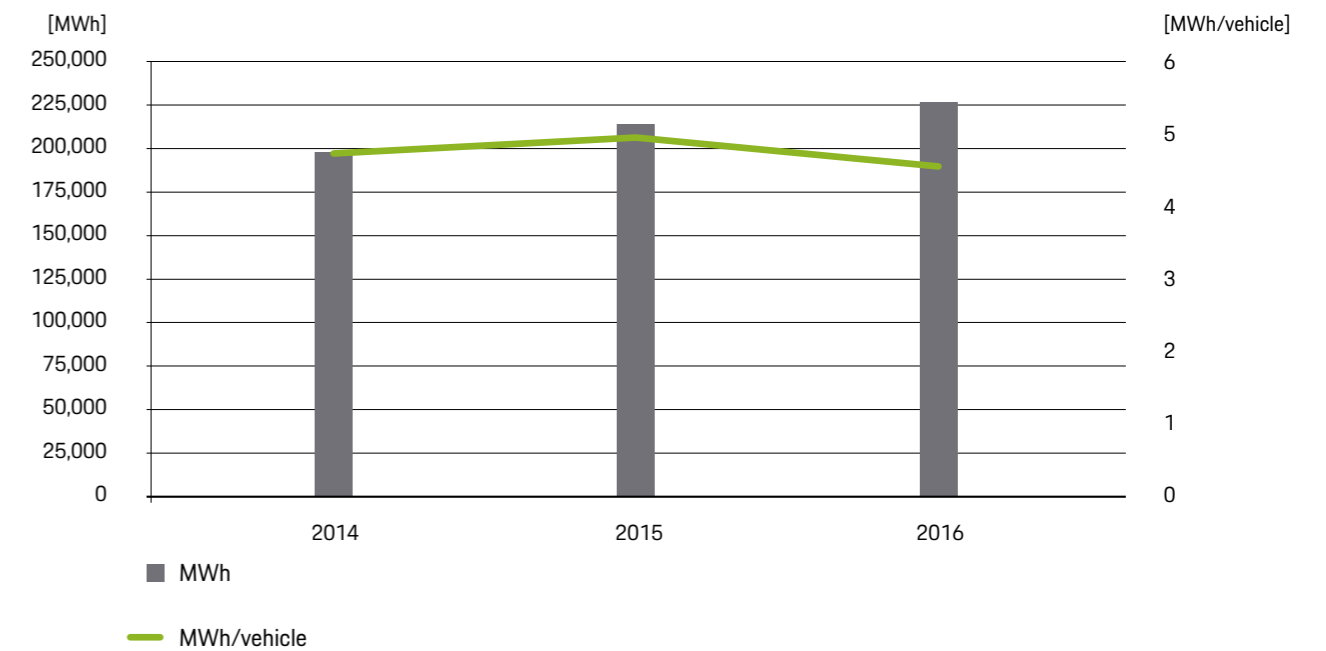
Environment and energy at the Zuffenhausen site



Energy

The Zuffenhausen site consumes energy in the form of electricity, space heating and the use of fuel gas. Since 1 January, 2017, 100 % of electricity for all Porsche sites has been supplied from renewable sources (wind, water or solar) – an increase of 55 % on the previous figure.

Use of energy



Trends in energy usage

In 2016, the overall use of energy rose by 6 % from 214,029 to 226,319 megawatt hours per annum. Reasons for this increase included a rise in workforce numbers, an expansion of production and the occupation of premises that had previously been let to tenants.

Consumption has actually fallen by 10 % thanks to numerous measures to improve the resource efficiency of plant technology, the launch of an LED switchover programme and increasing unit quantities.

Efforts are underway to upgrade the energy management software to guarantee a higher level of transparency in future and make it possible to respond to the different influencing factors at an earlier stage.

The environmental and energy-related objective "Increase the use of electricity from renewable sources" was achieved thanks to the installation of photovoltaic systems at the site. The installed capacity is approximately 302.5 kilowatt-peak. The amount of electricity produced is therefore around 313 megawatt hours per year.

Emissions trading

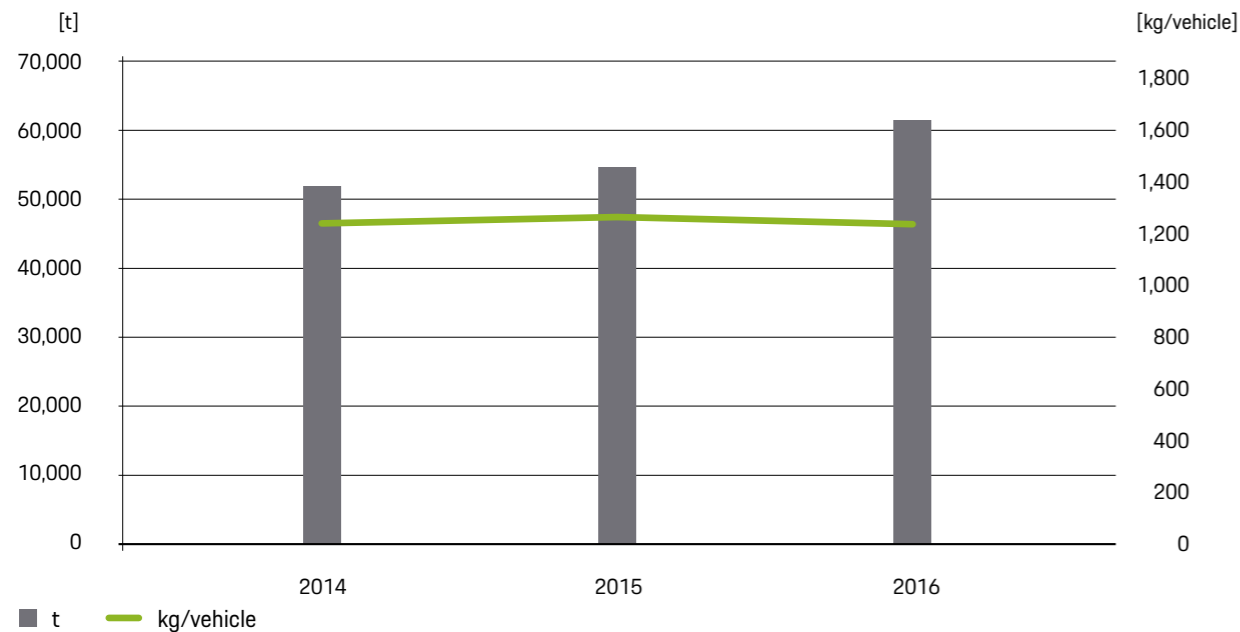
The two power stations in Plant 2 (Building 46) and Plant 4 (Building 26) mean that Porsche AG falls within the scope of the European greenhouse gas emissions trading scheme at the Zuffenhausen site. This is because the usable thermal performance of the hot-water boilers and gas modules exceeds the threshold value of 20 megawatts. Whereas the power station in Plant 2 has been subject to the regulations since the start of the emissions trading scheme in 2005, these regulations only started to apply to the power station in Plant 4 after its expansion in early 2016.

Approval is required for the emission of greenhouse gases into the atmosphere; in addition, Porsche has to have an emission permit for every tonne of carbon dioxide produced and emitted each year. At Porsche AG, this is carbon dioxide (CO₂) produced by the combustion of natural gas and extra-light heating oil. Porsche AG is allocated a fixed quantity of free permits at the beginning of each year. At the end of the year, the number of permits returned by Porsche to the authority must correspond to its actual emissions. If the amount of CO₂ emitted exceeds the allocated permits, the amount of the shortfall has to be purchased. Conversely, if emissions are lower than the allocation, the permits can be sold or saved for the years to come. The quantity of emission permits to be returned every year is determined in accordance with a method stipulated and approved by the authority. Compliance with this method and with the regulations on computing and reporting annual emissions is reviewed by independent experts or audit organisations every year.

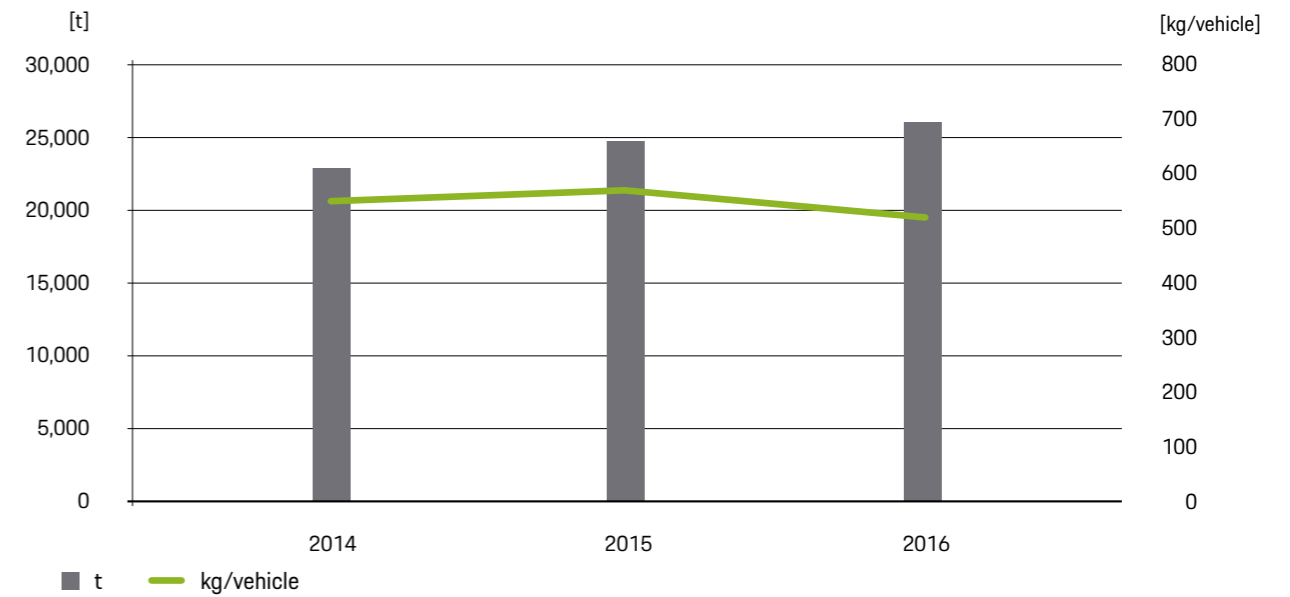
Whereas the rules applying to the calculation of annual emissions in the trading period 2013 – 2020 do not differ fundamentally from those of previous years, a completely new system has been introduced for the allocation of the free permits. The amount of the allocation is no longer calculated on the basis of historic emissions using a benchmark and the type and quantity of the products manufactured (heat generated for Porsche). Although the combined heat and power generation of the CHPs constitutes efficient technology for generating electricity and Porsche makes a positive contribution to the environment in this way, free permits are no longer to be allocated for this with effect from 2013. The emissions from electricity production must still be reported, however, and the corresponding number of permits handed in, which means that the shortfall has to be covered by buying additional permits.

Unlike other branches of industry with a heavy dependence on energy – such as steel or paper production – in 2013 and 2014 the EU did not consider there to be any risk of a relocation of production and thus of CO₂ emissions to non-EU countries; the allocation of free permits was therefore cut by 20 % and 27 % respectively. As of 2015, there will be no more reductions for an initial five-year period. Despite the fact that the allocation will increase as a result, by 2020 Porsche AG will need to pay for a cumulative shortfall of approximately 60,000 permits in connection with its power stations. The purchase costs will be approximately €300,000.

Total emission of CO₂



Directly emitted CO₂



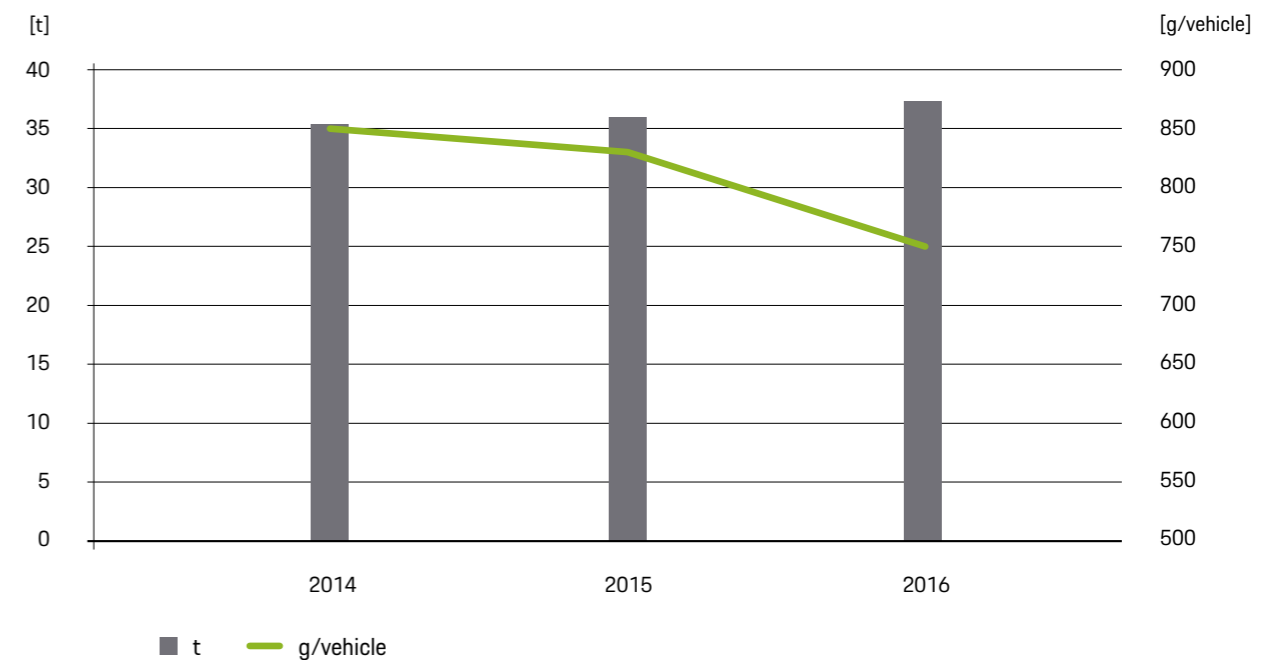
Trends in carbon emissions

Trends in CO₂ emissions essentially correlate to those for use of energy. CO₂ emissions have been affected by the uptick in production, and in particular by the expansion of Plant 4.

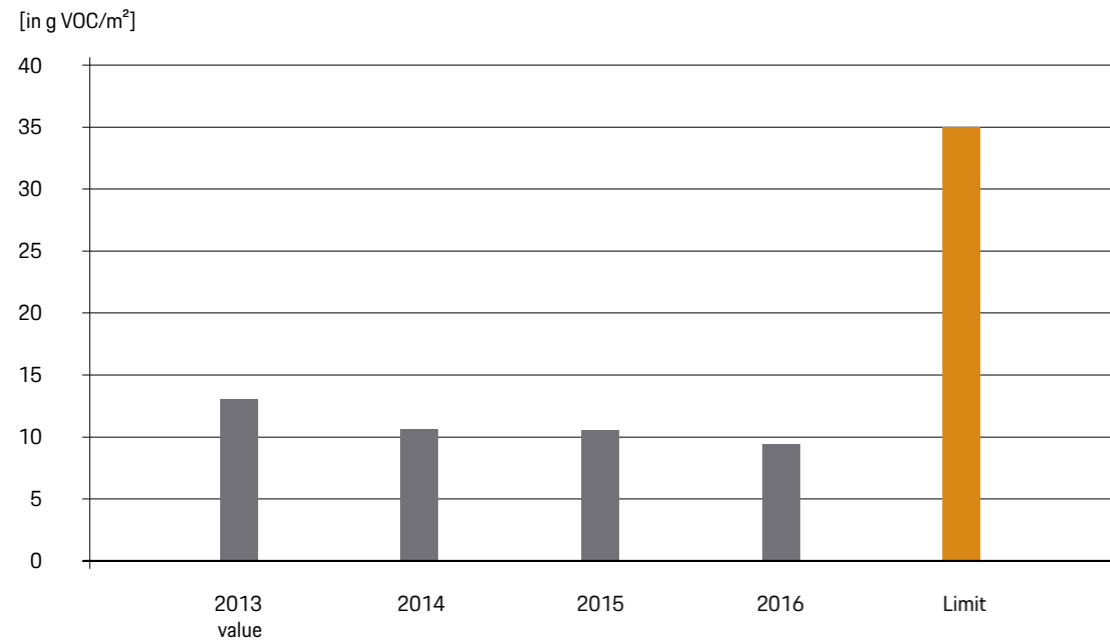
Trends in VOC emissions

The absolute increase in emissions of volatile organic compounds (VOC emissions) can be attributed to the increased output. The specific value dropped by 9.9 % thanks to further optimisation measures and higher availability of the exhaust-air purification system. The statutory limit value of 35 g/m² of body surface was therefore undercut by more than 70 %.

VOC emissions



Trends in VOC emissions



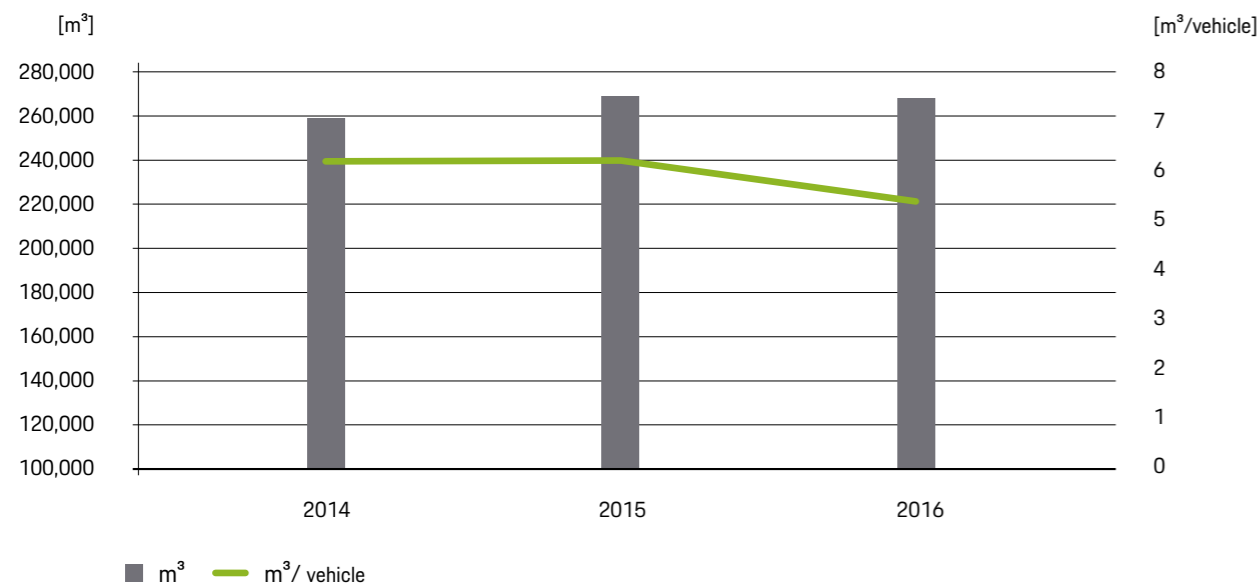
Water management

Environmental activities at Porsche AG have always focused on the conscious and economical use of water. Since 2010, the Zuffenhausen site has only procured its water from the municipal waterworks. It was no longer economical to process the site's own well water to make it into drinking water, and this practice was therefore discontinued.

Trends in water consumption

In spite of increases in production and the absence of changes to processes, absolute water consumption remains approximately the same. Specific water consumption has dropped from 6.21 m³/vehicle to 5.39 m³/vehicle. An applied material flow management concept was drafted in 2017, with one of its aims being to record and assess flows of water and waste water in greater detail.

Water consumption at the Zuffenhausen site



Waste water

Porsche is an indirect discharger at its Zuffenhausen site. Waste water from production is currently processed locally and fed into the waste water plant in Münster via the municipal sewer system. The total waste water generated in 2016 was 237,544 m³.

Waste water from pre-treatment in the paint shop and waste water from the car wash, cleaning facilities and the vehicle visual inspection systems has to be treated before being discharged into the sewer system. Waste water treatment systems such as the neutralisation systems in the paint shop or light material separation equipment, licensed in accordance with water management law, are in operation. The waste water treatment plants are continuously adapted to incorporate state-of-the-art technology, meaning that water contamination levels can fall significantly below the limit values. Porsche arranges for self-checks of waste water from the waste water treatment plants to be carried out by independent accredited providers. The official limit values were not exceeded in 2016.

The volume of waste water generated by the paint shop in 2016 was 28,363 m³. By way of example, monthly self-checks identified annual average concentrations of 0.008 mg/l for nickel and 0.102 mg/l for zinc. The statutory limits are set at 0.5 mg/l for nickel and 2 mg/l for zinc. The figures therefore also fall below the limit values set by Porsche for its waste water treatment plant, which in turn lie well below the statutory limit values.

Water protection – handling of substances that are hazardous to water

Many different classes of substances that are hazardous to water are filled, loaded or transported in-house at the Zuffenhausen site. So that Porsche is able to carry out servicing, maintenance and repair work on systems that handle materials that are hazardous to water, Porsche AG has been certified as a specialist firm in accordance with the German Water Management Act since 1998. In 2016, it was re-examined by an external expert organisation and reconfirmed as a specialist firm. Porsche has considerably minimised the risk of operational irregularities when dealing with materials that are hazardous to water by training staff and by maintaining a high standard of technical protective equipment in the production plants. Precautionary environmental protection measures are taken with regard to both the operation and maintenance of systems.

Soil protection and assessment of existing pollution

The Federal Soil Protection Law (Bodenschutzgesetz) governs the use of soil and groundwater with a view to safeguarding or restoring their function on a sustainable basis. The relevant measures, targets and assessment values are set out in the Federal Soil Protection Ordinance (Bundesbodenschutzverordnung). The relevant historical investigations of past use and associated assessments of existing pollution have already been carried out and documented on Porsche AG sites. Every time real estate is purchased, areas suspected of being polluted are routinely investigated and assessed. If necessary, a technical exploration is carried out accompanied by an expert, or even a detailed investigation. Areas suspected of being polluted are therefore identified at an early stage, and any containment or remediation measures necessary are agreed upon with the government agencies. The costs of implementing the investigation and remediation concepts are included in budget planning.

The register of contaminated sites held by Porsche documents the site developments in a geo-information system on a multitemporal basis; this information is refined and updated with each further exploration. Internal planning departments therefore have access to a comprehensive tool for plant development strategies.

Since 2011, Porsche has also been operating a ground water remediation plant in the area of the new paint shop due to previous disturbances through industrial use by the former owners. Plans exist to underpin these efforts in 2018 with a soil vapour extraction system, in order to transport pollutants out of the subsoil more effectively. Through these activities, Porsche is making a sustainable contribution towards the protection and preservation of water as a natural resource. The ground water remedial plant adjacent to the new body shop that has been in operation since 2003 could be shut down in 2015 once the remediation objectives had been achieved. Residual pollution in the subsoil was removed completely during the course of excavations.

Recently acquired land has also been assessed and added to the register of contaminated sites. The large number of building projects currently underway (paint shop, assembly and logistics, engine plant and conveyor technology) involve co-operating with the authorities to ensure that due account is taken of soil protection concerns.

Waste

The basis of waste legislation in Germany is the Closed Substance Cycle Management Act (Kreislaufwirtschaftsgesetz, KrWG). Its aim is to promote a recycling economy in order to conserve natural resources and to protect humans and the environment at all points along the cycle, from waste generation through to disposal.

It is based on a five-stage waste hierarchy:

1. Preventing waste
2. Preparing for waste reuse
3. Recycling waste
4. Other recovery of waste (e.g. energy recovery)
5. Disposal of waste

Porsche AG waste management concept

The waste management concept is based on the consistent separation of individual recoverable waste streams at the point where they are generated. All waste collection containers and waste collection points must be clearly identified. This method of improving environmental protection is generally effective when used alongside cost-effective disposal solutions.

Waste management at the Zuffenhausen site

The general principle that applies at Porsche AG is the avoidance of waste in order to preserve resources and avoid environmental impacts. When a new production plant is procured, the waste generated is evaluated early on at the preliminary planning stage, for example. The "Environmental Protection" resource regulation defines the relevant requirements for avoiding waste, which are forwarded to suppliers.

A new company was awarded a contract for general disposal tasks in 2016. Since only Porsche-approved disposal contractors are included in tenders for disposal services, 34 disposal audits were carried out to ensure that the waste disposal procedures were lawful. Nine of the waste disposal facilities underwent on-site audits, and 25 underwent desk audits.

All hazardous and non-hazardous waste is gathered at the Waste Management Centre or collection points within Porsche buildings, prepared for collection and taken by specialist disposal companies for disposal on the basis of an approved procedure. The Waste Management Centre is a recent addition to Plant 6, since the previous location in Plant 2 will form part of the new Mission E assembly area. Over the course of 2016, the legislative amendments and all new pieces of waste legislation that apply to Porsche were reviewed and implemented. One outcome of this process was an adaptation of waste classification pursuant to the CLP (Classification, Labelling and Packaging) Regulation. A partial flow of paint sludge previously not classified as hazardous waste (AVV 080116) has been reclassified as hazardous waste (AVV 080115). This means that it must henceforth be disposed of within the framework of the electronic waste records procedure (elektronisches Abfallnachweisverfahren, eANV).

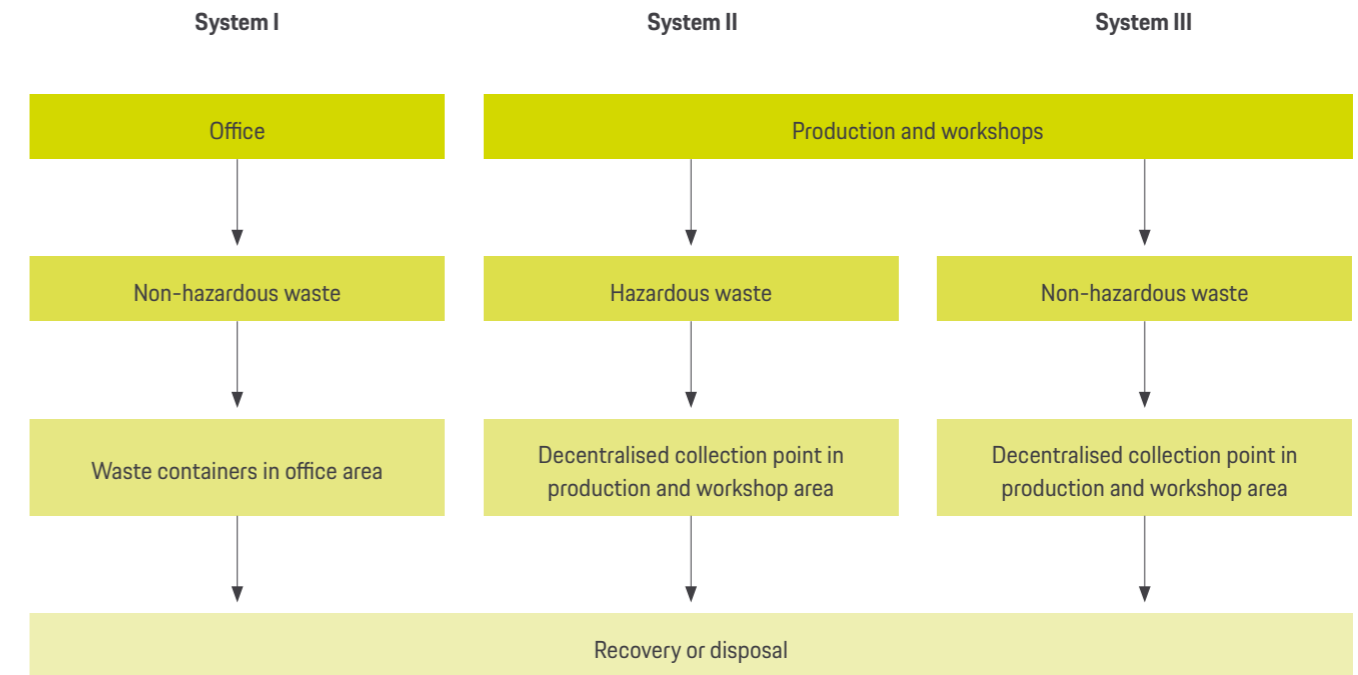
Sustainable development in the context of waste management requires not only waste avoidance, but also increased waste recovery. Recovery is an umbrella term that covers all procedures for using the recyclable substances and energy contained in waste.

6,195 tonnes of waste were generated in total in 2016, and 94 % of this waste was recovered.

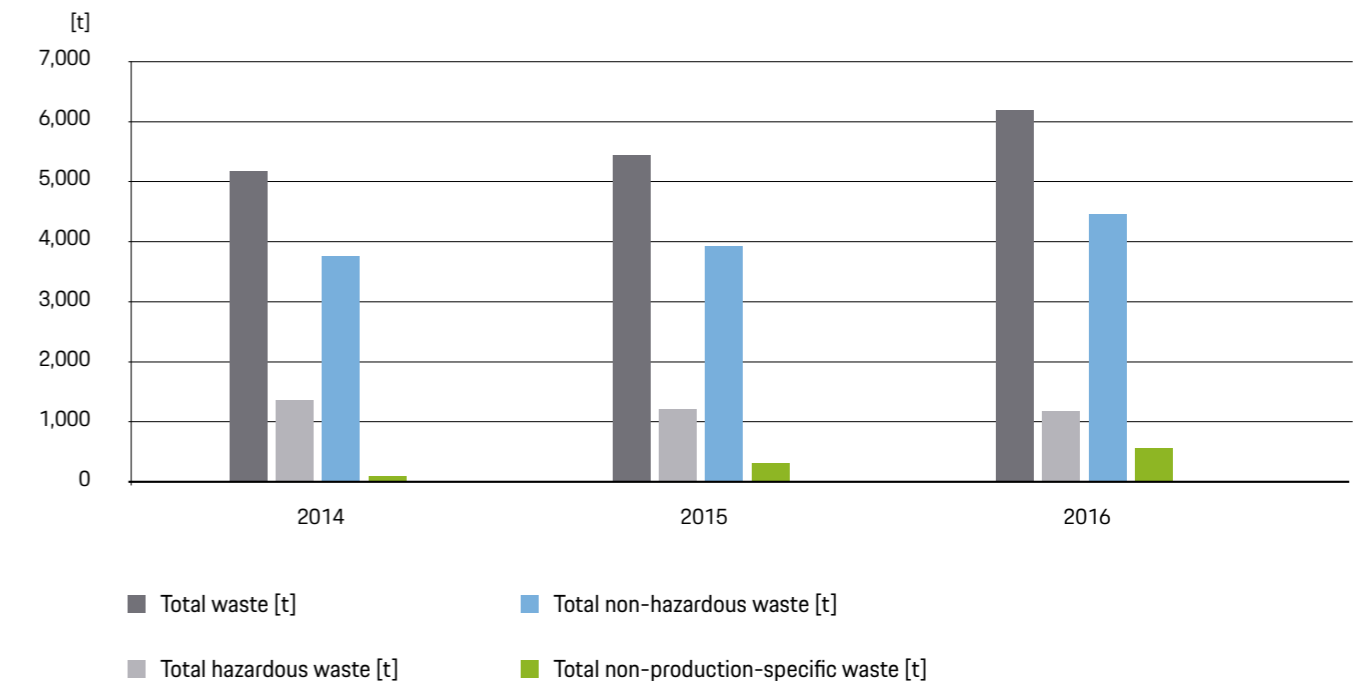
Trends in generation of waste

There has been an increase in the absolute generation of waste owing to an increase in production and employee numbers and an expansion of the Zuffenhausen site.

The total generation of waste increased from 2015 to 2016; this was due firstly to the increase in production, and secondly to changes in processes and cleaning requirements and the large number of demolition and redevelopment projects underway at the Zuffenhausen site. The figure for total generation of waste does not include the waste from demolition and redevelopment measures that was disposed of directly from the construction sites under the responsibility of the relevant contractors.



Generation of waste



Non-hazardous waste at the Zuffenhausen site

The Zuffenhausen site generated 4,466 tonnes of non-hazardous waste in 2016. 95 % of this waste was recovered. The types of non-hazardous waste that accounted for over 100 tonnes of the waste generated are listed below.

Waste Classification Ordinance	Non-hazardous waste > 100 t/year	2015 [t]	2016 [t]
020204	Sludges from on-site waste water treatment	126.93	131.92
080116	Aqueous sludges containing paint or varnish	240.13	173.51
150101	Packaging made from paper and cardboard	667.68	507.98
150102	Packaging made from plastic	228.41	185.25
150103	Packaging made from wood	393.65	459.18
160117	Ferrous metals	552.08	773.86
160118	Non-ferrous metals	150.27	341.66
170107	Mixtures of concrete, bricks, tiles, etc.	133.58	242.56
170504	Soil and stones		196.09
200108	Biodegradable kitchen and canteen waste	148.61	156.56
200301	Mixed municipal waste	972.09	1,341.91

Efforts to achieve low-waste procedures

During the reporting period, various measures were taken in production areas with a view to the avoidance, recovery and disposal of waste as well as the promotion of low-waste procedures.

Hazardous goods

The carriage of dangerous goods by the various carriers must comply with national and international regulations on dangerous goods to avoid endangering the safety of humans and the environment. Based on the current legislation on dangerous goods, the centralised Dangerous Goods Information System (Gefahrgut-Informationssystem, GIS) was updated and made available to all authorised representatives.

In 2016, Porsche transported over 1,000 tonnes of dangerous goods in Classes 1, 2, 3, 4.1, 6.2, 8 and 9, as well as small quantities of dangerous goods in other classes. For example, airbag modules, solvent mixtures, paints and adhesives were transported around the world by road, sea and air. Conversely, Porsche also receives tank-loads of dangerous goods subject to safety plans (Section 1.10.3 ADR). No accidents that involved dangerous goods were notified during the reporting period.

Nature conservation

Porsche has undertaken to do its part to preserve biodiversity. Porsche subscribes to the fundamental nature conservation and landscape management goals of protecting nature and the landscape in populated and unpopulated areas. Such goals are to be achieved in a way that permanently safeguards biodiversity and the ability of ecosystems to be productive and functional, as well as the diversity, uniqueness, beauty and recreational value of nature and the landscape.

Hazardous waste at the Zuffenhausen site

The Zuffenhausen site generated 1,177 tonnes of hazardous waste in 2016. Almost 91 % of this waste was recycled. The types of hazardous waste that account for over 50 tonnes of the waste generated are listed below.

Waste Classification Ordinance	Hazardous waste > 50 t/year	2015 [t]	2016 [t]
070601	Aqueous washing liquids	194.22	138.62
070608	Other reaction and distillation mixtures	404.32	480.06
120109	Halogen-free machining emulsions and solutions	153.68	169.70
140603	Other solvents and solvent mixtures	103.60	109.21
160601	Lead-acid batteries	63.41	50.32
190207	Oil and concentrates from separation processes	38.01	58.52



08 How much?

Environmental performance in facts and figures



Input/output balance sheet, 2014 to 2016

Input	2014	2015	2016	Einheit
Production materials for vehicle manufacture and for engine production: corresponds to total physical output for core indicators pursuant to EMAS III	74,738	78,428	83,215	t
Total energy consumption	197,767	214,029	226,319	MWh
Percentage of total energy consumption from renewable energy sources	29,010	35,399	36,597	MWh
Percentage of electrical energy (including compressed air energy)	82,585	88,546	91,507	MWh
Percentage of energy produced by the organisation (e.g. CHP)	14,487	14,488	11,426	MWh
Percentage of energy produced by third parties	68,098	74,057	80,081	MWh
Percentage of energy produced by third parties from renewable energy sources	29,010	35,399	36,597	MWh
(Source Volkswagen Kraftwerk GmbH)	–	–	45.7	%
Percentage of total heat	97,491	106,659	114,601	MWh
Percentage of heat produced by the organisation	97,491	106,659	114,601	MWh
Percentage of heat produced by third parties	–	–	–	MWh
Percentage of heat produced by third parties from renewable energy sources	–	–	–	MWh
Percentage of combustion gases for manufacturing processes	17,652	18,693	20,193	MWh
Percentage of special energy products (e.g. mains backup system)	39	131	18	MWh
Fuel consumption at site (included in total energy consumption)	122,903	133,338	145,175	MWh
Natural gas	118,010	129,010	141,433	MWh
Heating oil	1,776	1,272	561	MWh
Petrol ¹	3,117	3,056	3,181	MWh
¹ The petrol consumption figures relate solely to consumption by engines on test rigs. Consumption by the vehicle fleet is likely to be included from 2017 onwards.				
Total water	258,729	268,594	267,917	m³

Input-output balance sheet 2014 to 2016

Output	2014	2015	2016	Unit
Total generation of waste	5,184	5,435	6,195	t
Percentage of hazardous waste	1,366	1,208	1,177	t
Percentage of non-hazardous waste	3,732	3,924	4,466	t
Percentage of non-production-specific	86	304	553	t
Annual total emission of greenhouse gases Zuffenhausen site, without coolants				
Total emission of carbon dioxide	51,823	54,667	61,481	t
Percentage of directly emitted carbon dioxide	22,881	24,748	26,087	t
The emission factor "Residual mix" (Volkswagen Power Plant) is used for electricity, and the emission factors pursuant to the Greenhouse Gas Emissions Trading Act [Treibhausgas-Emissionshandels-gesetz, TEHG] (IPCC 2006) are used for gas and heating oil.				
Total annual air emissions Zuffenhausen site				
Nitrogen oxide	19.2	20.8	22.7	t
Sulphur dioxide	0.1	0.1	0.1	t
Dust (PM)	0.1	0.1	0.1	t
Emission calculations are based on the VDA (Verband der Automobilindustrie, German Association of the Automotive Industry) emission factors (2012)				
Solvent emissions from the paint shop	35.4	36.0	37.3	t
Emission values calculated on the basis of emission measurements from 2012 onwards.				
Waste water	238,343	242,608	237,544	m³
Difference compared with calculated water use caused by water loss of which waste water from paint shop (new paint shop from 2012 onwards)				
	26,573	33,574	28,363	m ³

Core indicators pursuant to EMAS III

Based on the requirements pursuant to EMAS III Annex IV, the Environmental Statement 2016/2017 uses the stipulated core indicators to describe significant direct environmental impacts.

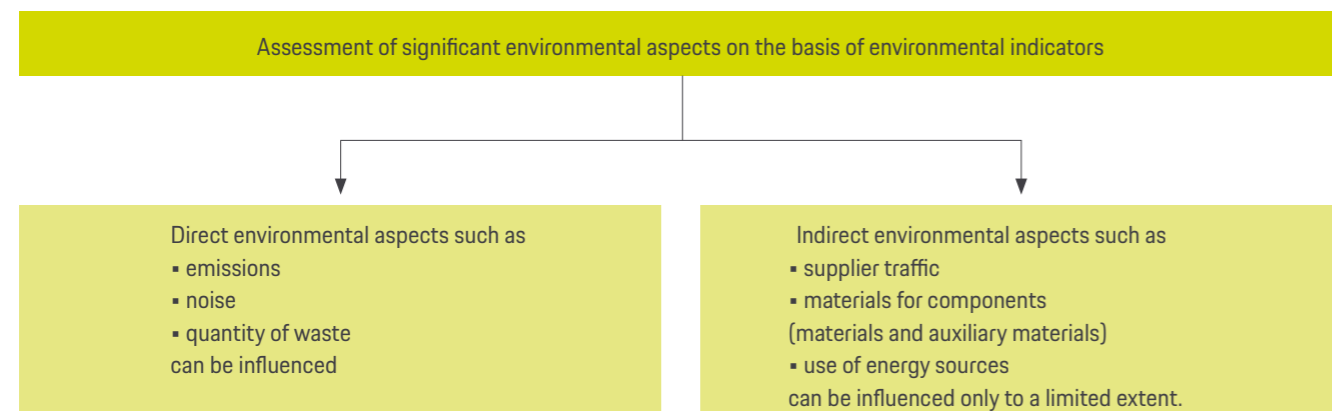
The reference variable for the core indicators is the total physical output of 83,206 tonnes for the Zuffenhausen site, calculated using production figures, the weight of the vehicle models, the number of engines manufactured and their weight. This reference variable does not take account of component manufacture in the body shop and saddlery.

Porsche uses the core indicators to ensure comprehensive reporting of its environmental performance in terms of significant environmental impacts. Differences in terms of production figures, the vertical range of manufacture and site-specific conditions mean that these core indicators are not comparable with those for other sites, however.

Core indicators pursuant to EMAS III

Core indicators pursuant to EMAS III		2014	2015	2016	Unit
Energy efficiency	Total direct energy use [MWh] / Total physical output [t]	2.6	2.7	2.7	MWh/t
	Total renewable energy use (electricity) [MWh] / Total physical output [t]	0.39	0.45	0.44	MWh/t
Material efficiency	Total mass-flow of metals [t] / total physical output [t]	0.8	0.8	0.7	t/t
Water	Water consumption [m ³] / total physical output [t]	3.5	3.4	3.2	m³/t
Waste	Total generation of waste [kg] / total physical output [t]	69.36	69.30	74.45	kg/t
	Total generation of non-hazardous waste [kg] / total physical output [t]	18.27	15.40	14.14	kg/t
	Total generation of non-hazardous waste [kg] / total physical output [t]	49.94	50.03	53.66	kg/t
	Total generation of non-production-specific waste [kg] / total physical output [t]	1.15	3.88	6.64	kg/t
Biodiversity	Use of land [built-up area in m ²] / total physical output [t]	7.8	7.4	7.7	m²/t
Emissions	Total annual emission of greenhouse gases [kg CO ₂ equivalent] / total physical output [t] (Only includes CO ₂ emissions from power stations and fuel combustion by engines on test rigs; does not include coolants. Emissions of other greenhouse gases [CH ₄ , N ₂ O, hydrofluorocarbons, perfluorocarbons and SF ₆] are irrelevant for Porsche pursuant to EMAS III, Annex IV.) The emission factor "Residual mix" (Volkswagen Power Plant) is used for electricity, and the emission factors pursuant to TEHG (IPCC 2006) are used for gas and heating oil.	693.4	697.0	738.9	kg/t
	Total annual air emissions / total physical output [kg] [t]				
	NO _x	0.256	0.265	0.273	kg/t
	SO ₂	0.002	0.002	0.002	kg/t
	PM	0.001	0.001	0.001	kg/t

A distinction can be made between direct and indirect environmental aspects.



Assessment of significant environmental aspects

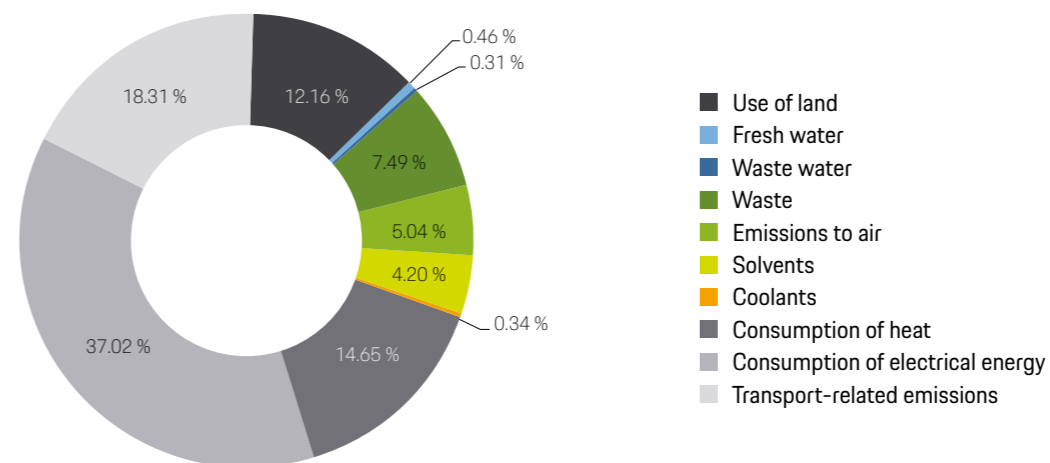
EMAS involves an investigation and assessment of the significant environmental aspects of an organisation's activities. ISO 14001 defines environmental aspects as elements of an organisation's activities that can interact with the environment. The individual environmental aspects are assessed on the basis of environmental and energy indicators. Environmental aspects with significant environmental impacts also hold greater potential for improvement. This serves as a basis for setting new environmental and energy objectives.

The process for assessing environmental aspects has been further developed by Porsche AG at its Zuffenhausen site. Life-cycle analyses (introduced in 2002) will no longer be carried out. The SEBU (System zur Erfassung und Bewertung von Umweltaspekten, System for Recording and Assessing Environmental Aspects) method, which will be used in future, was developed by Volkswagen AG and is based on the ecological scarcity method: All relevant sources of environmental pollution (whether airborne or water-borne) are assessed, as well as energy consumption and waste generation. In order to formulate the objectives required by ISO 14001 for the prevention of environmental impacts, it must be possible to assess and measure environmental aspects.

This takes place in four stages within the framework of the SEBU method. Firstly, the environmental aspects relevant to production (such as consumption of drinking water and heat at the site) are recorded. Secondly, the consumption data for the relevant material flows is combined and checked for validity. Thirdly, the various categories of consumption or emission data must be multiplied by a stipulated eco-factor and investigated in terms of their potential impacts. Fourthly, priorities are identified objectively and illustrated in graphical form.

Multiplying the recorded consumption and emission data by the eco-factor results in an environmental impact score (Umweltbelastungspunkte, UBP). This makes it possible to compare and summarise the consequences of various environmental aspects, expressed as environmental impact scores. For example, tonnes of CO₂ can be compared against cubic metres of fresh water abstraction in terms of their environmental impact, or both can be displayed as an overall impact.

Weighting of environmental aspects



The SEBU method was used to assess the significant environmental aspects for the Zuffenhausen site using the data for 2016. A weighting of these environmental aspects is shown above.

The most significant environmental aspect is consumption of energy. In 2016, electricity consumption accounted for 37 % of the total and heat consumption for nearly 15 %. Porsche has therefore set itself an ongoing objective of improving energy efficiency and increasing its use of renewable energies as a percentage of overall consumption.

"Transport-related emissions" are the second most significant environmental aspect. Porsche has therefore produced an overarching concept under the title "(Employee) Mobility at Porsche", which covers factors such as charging infrastructure, electricity and smartphone-based connectivity. It offers employees attractive options for public transport use in order to make sustainable improvements to the traffic situation and the mobility of all employees at the Zuffenhausen site.

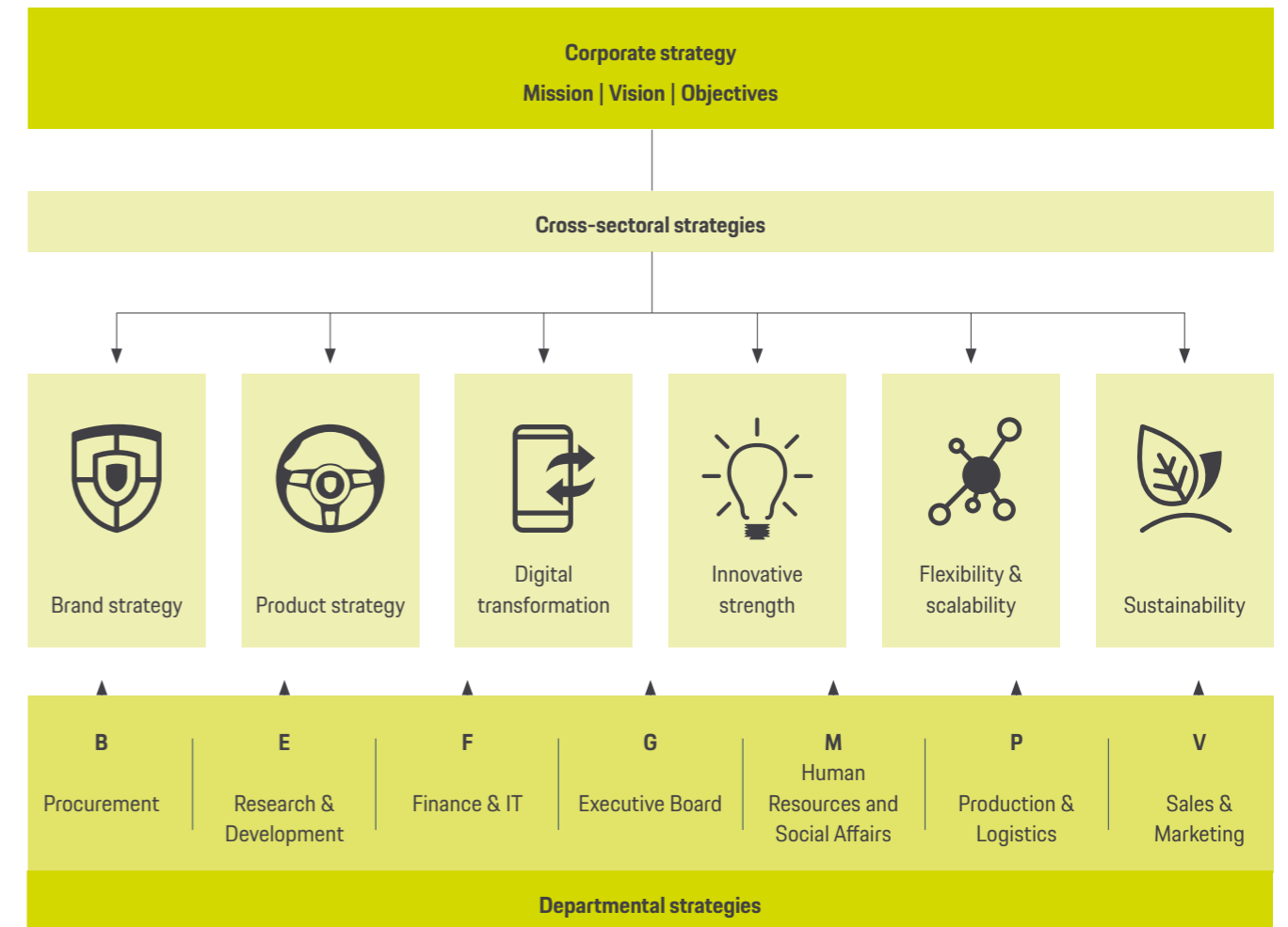
Additional targeted measures have been taken and incorporated into the goal-setting process in order to reduce harmful environmental impacts.

A new chapter in the history of the sports car: The Mission E.



09 Towards which destination?

Strategy 2025 and the Environmental and Energy Programme



Corporate strategy

The company's Strategy 2025 represents a continuation of its Strategy 2018, but with an even stronger focus on innovation and digitalisation. "Mission, Vision and Strategic Objectives" form the metaphorical umbrella of Strategy 2025. Under this umbrella are six cross-sectoral strategies that cut across all the different departments and relate to matters of enormous interest for both Porsche and the automotive sector as a whole. The seven departmental strategies, which are closely interlinked with the cross-sectoral strategies, represent the metaphorical foundations. Strategic fields with related top objectives and top measures are defined for the departmental strategies.

Resource Efficiency Programme

For example, 66 measures under the Resource Efficiency Programme were given the green light in 2016; extracts are shown in the Environmental and Energy Programme that follows. 132 ideas and measures were identified for 2017.

Resource Efficiency Programme (last updated: 31. December, 2016)

Combination of shuttle rides UP - EVZ & UP - HJS Logistics	Lighting turned off from 10:00 pm vehicle routing cards to 9:45 pm PLoG-01 / PBW	Conversion of mezzanine level lighting to turned off during the day PZK	8. Standby mode for electronic production-free periods PZM
Reduction in shuttle rides UP-BEL and UP-Exer	Intelligent battery charging Step 2 PLoGt	Deduction of evaporation losses from waste water costs for hot-test plant 3 PAQ4	Conversion of plant lighting on second floor (components and assembly finishing line) using LED retrofit tubes PZK2, PZK3
Reduction in shuttle rides UP - WE1 Porsche	Intelligent battery charging Step 1 PLoG	Shutdown of engine test rigs in Plant 2 Building 8 PAE	Conversion of plant lighting on first floor (floor/rear section/geoline) using LED retrofit tubes PZK2, PZK3
Deactivation of dry scrubber modules in peralescent effect painting area PLG-AC	Switch-off of lighting when Training Centre not in use PLoG	Standby mode for electronic routing cards in production-free periods PZM	Conversion of plant lighting (side panels) using LED retrofit tubes PZM
Switch-off of HVAC 2 during production-free periods PLG-AC	Switch-off of lighting when the QA area is not in use PLoG	Presence detector for lighting of the basement corridors W3B20 PA	Reduction in length of time taken to protective gas atmosphere during aluminium welding PZK2, PZK3
Implement lighting control around the edge of the building AT1/AC2	Switch-off of lighting for the main route between Building 31 & Building 50 PLoG	Switch-off of Bosch nutrunner controls during production-free periods via engine assembly PAV	Reduction in use of welding parting agent Oplax via WL through 1/5 dilution PZK2, PZK3
Use of filter system for welding goods tongs/cooling water system AT1/AK2	Switch-off of lighting in incoming area PLoG	9. Removal of "private" fridges in production after upgrading of the break rooms to comply with new standard PZM	Recycling of PVC (material procurement) PZO
Energy potential analysis for ventilation and air-conditioning system BT 10 Part 2 AT1	Switch-off of lighting in small parts packaging and Adrio PLoG	8. Standby mode for electronic vehicle routing cards during production-free periods (Partial Scope 1) PZM	Replacement of assembly line lighting with LEDs PZM
Optimisation of switch-on-times for paint shop AC2-S1/AC2-S2	Lighting control BT210/212/211: Switch-off of plant lighting at weekend PLoG-AK	Implementation of LED lighting in building 61 as part of Project 982, saddlery (hall and plant) PZM 6	Separate power supply for test rig PC from test rig control cabinet (Sepa) PAQ4
Increase in tank filling levels (logistics) Logistik	Use of efficient CRAC units in LDC	Process optimisation for AWS exhaust cleaning system PZO 4	Conversion of lighting for component assembly line using LED retrofit PA
Implementation of screwdriving technology without compressed air for Panamera G2 in mounting PM	Replacement of existing monitors for energy-saving successor models	Reduction in flushing intervals for adhesive systems, Agreement on minimum quantity with SCA and manufacturer PZK 3	Reduction in temperature of PVC dryer PZO3
Energy potential analysis for roller test rig --> Control of ventilation devices PP/POW	Disassembly of pollen filter wall PLG-AC	Switch-off of folding cell VKD 991 during production-free periods PZK 3	Switch-off of VISU monitors PZO
Conversion of level system for AWS system AC2	Lighting control V150 BT17 PLG-AM	Revise/update lighting matrix per floor PZK 1-3	Reduction of leaks in compressed air systems (maintenance units) PZO2
Optimisation of temperature settings of PCV-dryer PZO2	Deactivation of lighting V100 Measure 1 PLG-AM	Use of LED lighting in process cabins PZO4/POW	Shutdown of hall ventilation PZO2
SCA-bottom panel for consumption of leftover AK3	Server virtualisation PLG-F	Approval and delivery EMS (Energy-Monitoring-System) PPO1/PZO4/PZO2	Enhancement filling degree carriers PZL

2016

Ventilation and air-conditioning systems --> Engine Modification Part 1 AT1	Use of new type of adhesive PK	Reduced percentage of fresh air in rebooth zones PLG-ACC	Reduction of layer thicknesses in the interior PZO2	6. Training of contractors on resource efficiency and environment/energy PZM
Investigation into conversion to LED lighting PBU	Lighting control for body store V100 Measure 2 AMS/AT1	Screwdriving technology without compressed air for engine pre-assembly PLG PLG-PM	Alternative flushing media (reduction of VOC) PZO4	Insulation of heating pipes in W6 PZM 6
Use of well water for leak testing AT1/PP/POW	Water conservation through use of contactless water taps AT1	Energy potential analysis for ventilation and air-conditioning system, Control of cooling air BT10 AT1	Integration of electricity meters for air compressor and cooling generator in EMS PPO1/POW	1. Activation of lighting control during break times in Building 41, first and second floor (organisational) PZM 1-3
Analysis of waste flows AC2/MS	Pilot procedure for assessment of environmental aspects on the basis of environmental impact score, with a view to the development of the future	Lighting control BT210/212/211: Reduction of lighting during break times PLG-AK	Analysis tool for base load consumption based on EMS (Energy Monitoring System) POW/PBU/POO	Use of dryer heat for desorption (AWS system) PPO1
Reduction of phosphate sludge KTL PC	Replacement of drinking water with rainwater, Filling of fording basin Sales	Filling level for Macan side wall frame PLG-L	Switch-off of lighting in car park from 10:00 PM PLoG-01/PBW	Optimised ventilation for workstations PPO1
Energy potential analysis for air emissions in paint shop PC	Modernisation of windscreen adhesion system AM	Water consumption of showers IGZ 2	Intelligent battery charging Step 3 PLoG	Standby mode for lighting PZO4
Dryer units --> use of converters in AHZ 1 and 2 of DL dryer AC2	CO ₂ savings thanks to reduction in transport operations PLG-MS	Use of longer tugger trains (logistics) in V2 K1 Logistics	Recovery of wood PLoG	Use of new atomiser cleaning devices PZP2
Implement lighting control around the edge of the building Step 2 AT1/AC2	VE coils KTL AC2/AC3	Lighting controls for Pilot Forum BT210	Switch-off of lighting when Construction stage 1 (returns area) is not in use PLoG	Investigation into use of electro-hybrid lorries for in-plant transport PZL
Reduction of water consumption VBH AC3	Replacement of drinking water with rain and well water on run-in and test track, dynamic area Sales/AM5W3	Lighting control for TC logistics BT122 Logistics	Improvements to collection of data on waste flows MS	Recovery of defective and obsolete load carriers PZL
Assessment of power consumption for gelling system (electricity tax exemption) PK	Awareness-raising among employees in respect of lighting at test rigs in QA area Quality	Lighting controls for the head-end building BT311, 1st floor	Lighting of emptying storage designed to be switched off PLG-AC2	Assessment of use of cold air curtains (in new and redeveloped buildings)
Base load reduction for HVAC system AT1	Assessment of software and hardware solutions in offices PBU	Lighting controls for upper (8 m) level BT311	LED retrofit cycled lighting for assembly PLG-AM	Reduction in consumption of adhesives PZK 1-4
Adjustment of air curtain systems for air locks (via logistics) Logistics	On/off socket strip for office block PBU	Expansion of local data centre/computing centre F	Replacement of air curtain systems on doors PLG-AM	Cayman integration: assessment of resource efficiency of systems (new adhesion system) PZK1-4
(Gradual) shutdown of extraction in grinding booths during break times PK/AK2	Use of electric lorries for shuttle transport (logistics) Logistics	Reduction of hot water supply temperature (drinking water) AT1	Optimisation of the combi-filling systems (drinking water) PLG-AM	Optimisation of welding fume extraction system 1.1 PBW, PZK
Base load reduction of compressed air in systems during production-free periods AK1/AK2	Analysis of possible reduction in outdoor lighting (Customer Care Centre) Sales/Veith	Reduction of start-up current peaks for systems AK2/AT1	Optimisation of room temperature in data rooms	Control panels for lighting moved to ground floor PZK 1,2 und 4
Increase in supply temperature of welding tongs cooling water to reducing the use of cooling water	Optimisation of washing systems (Customer Care Centre) Sales/Veith	Energy savings Body transport	Use of waste heat (furnace area) PLG-AK	Shutdown of system DV 991 on second floor during production-free periods (weekend and overnight)

2017

Power-on time for hall ventilation PA	Consideration of VOC percentage when choosing paints PPO/PZO3	Standby control for robots
Shutdown of presentation screen for factory tour PA	80:20 operation for painting booth PZO4	Use of UF filtrate from emulsion splitting system PZO2
Reduction of packaging film waste PAL	Optimisation of cleaning and rinsing programme PZO2	Replacement of oval belt with FTS system PZM
Conversion of lighting in the Operating Facilities Building using LED retrofit tubes PAB	LAVA for CDP dryer PPO1	Filling system for coolant and wash water PZM
Use of networking protocols for factory computers PA	Operating time for fan propeller drive motor, Optimisation of cooling tower PAQ4	Avoidance of fresh water losses following restructuring of test facility PZM
Insulation of heating pipes in Plant 6 PAE	Targeted switch-off of basement exhaust system? PAE20	Vehicles no longer dried after sprinkling PZM
Step 2: Shutdown of the Bosch nutrunner controls during production-free periods via network for B engine mounting PAM	Conversion of pumps in HT periphery to energy-saving motors PAQ4	Optimisation of airlock function WEB South PAF
Replacement of windows as part of Assembly 2018 project, coupled heating controls PZM	Investigation into water loss/consumption for cooling in Building 5 PAP2	Conversion of lighting in Plant 3 Building 20 using LED retrofit tubes PA
New lighting concept as part of Assembly 2018 project PZM	Assessment of compressed air production/consumption in Plant 6 POW	Conversion of lighting in Plant 6 using LED retrofit tubes PA
Ventilation of chassis dynamometers, continued use of exhaust/waste heat PZM 4	Light controls in Plant 6 PBW	Conversion of MFH lighting using LED retrofit tubes PA
Water efficiency: leakage test using sound (see Innovation Project) PZM 4	Reduction in consumption of compressed air (other methods) PAP2	Optimisation of existing fridges PZO
15. Insulation of exterior walls of B45 and replacement of windows PZM 6	Shutdown of Bosch nutrunner controls in V engine assembly (no night shift)	Weekend inspection PZO
14. Coupling of heating controller with window position (open/closed) PZM	Production potential query PA	Identification of compressed air leaks using ultrasound FTC
13. Replacement of lighting in NA areas for LED lighting PZM 4-5	Reduction of fuel consumption for hot tests PAQ	Reduction of unplanned repackaging effort for series production deliveries, Zuffenhausen plant PZ143/S4/S5
12. Retrofit motion detectors in existing break rooms PZM	Saving of paper for wireless office network production PA	Speed-controlled operation of CDP circulating pumps PPO

2018

Environment and energy objective	Date	Measure	Status
Environment and energy management			
Vision of a Zero Impact Factory	2025	Method for expanding existing DGNB certification for environmental impacts such as energy and resource consumption, water, waste and mobility	Started
Continuous enhancement of environment and energy management systems	Ongoing	Regular internal and external audits of management systems pursuant to ISO 14001, ISO 50001 and EMAS (Zuffenhausen)	Ongoing
Provision of more information to employees on environment/energy and resources	2017	Implementation of concept on internal communication and user awareness	Started
Cleaner production thanks to partially vehicle-specific reduction of 7 % for fresh water consumption, CO ₂ and VOC emissions, waste and overall energy consumption at the production sites at Zuffenhausen and Leipzig (Strategic Objective P08 for Production – Reference Year 2016)	2017/2018	Recording, assessment and implementation of site-specific measures	Goal partially achieved
Nature conservation			
Contribution to preservation of biodiversity	2019	Nature-friendly design taking into account local circumstances and typical landscape at the Zuffenhausen site	Started
Concept for close-to-nature design of company grounds	2018	Investigation into redesign of company grounds to ensure closeness to nature, in particular as part of redevelopment of plant for Mission E	Started
Resource conservation and pollution protection			
Further development of the noise register to forecast future changes or expansions at the site	2017	Performance of noise measurements and investigation of existing pollution	Started
Reduction of CO ₂ emissions in logistics	Ongoing	Increase in filling levels for load carriers to ensure better utilisation of lorry capacity	Ongoing
Reduction in CO ₂ emissions for units and components	2016	Shutdown of the hot-test engine test rigs in Plant 2 Building 8 and conversion to cold-test rigs in Plant 6	Achieved
Reduction in CO ₂ emissions in paint shop	2016	Reduction in temperature of PVC-dryer by 10 Kelvin	Goal partially achieved
Reduction in CO ₂ emissions in paint shop	2017	Load-dependent volume flow adjustment for CDP dryer	Started

Environment and energy objective	Date	Measure	Status
Reduction of CO ₂ emissions at Zuffenhausen site	2019	Creating a concept for the use of renewable energies to generate heat	Started
Resource conservation and waste management			
Concept for the reduction of adhesive consumption and quantity of waste in the body shop	Ongoing	Optimisation of glue robot processes	Ongoing
Reduction in the quantity of waste generated by the paint shop (30 t per annum)	2018	Internal processing of condensate from the exhaust air purification system	Goal partially achieved
Resource conservation and protection of water			
Reduction of water consumption during vehicle cleaning (vehicle assembly)	2016	Planning and construction of new washing facilities and leak testing system	Achieved
Resource conservation and energy efficiency			
Increase in use of electricity generated from renewable energies	2016	Installation of photovoltaic plants at the site	Achieved
	2017	Procurement of 100 % green electricity	Achieved
Improved recording of energy data	2016	Introduction of energy management software	Achieved
	2018	Demand-oriented adjustments to recording of energy data	Started
Reduction of energy consumption when planning new buildings	Ongoing	Energy savings thanks to efficient building technology (up to 20% for new builds)	Ongoing
Reduction of compressed air consumption by 3 % in body shop	2016	Optimised leakage detection and compressed air saving measures	Goal not achieved
Reduction of energy consumption in body shop	2016	Lighting: Conversion to LEDs in manufacturing area (side panels)	Achieved
Reduction of energy consumption in body shop by around 99,000 kWh/a	2016	Lighting control on mezzanine floor/conveying technology thanks to radio control	Achieved
Reduction of energy consumption in vehicle assembly by 22,000 kWh/a	2016	Standby mode for electronic vehicle routing card during production-free periods	Achieved
Reduction of energy consumption in vehicle assembly through process optimisation	2017 extended	Vehicles no longer dried after sprinkling	Goal partially achieved
Resource conservation and material efficiency			
Reduction in fuel consumption and coolant and waste avoidance	2016	Decommissioning and disassembly of engine test rigs W2 B8	Achieved





Evidence of innovative strength and sustainability: The Mission E Cross Turismo.

10 When?

Summary and outlook



Summary and outlook

Porsche does not rely solely on its history – it is also committed to sustainable growth. Construction of the Mission E at the Zuffenhausen site will mark a turning point in this history.

We have already taken our first step towards a Zero Impact Factory. We are facing this challenge together, and we are finding the courage – both now and in the future – to continue optimising the environmental and energy aspects of efficient and high-quality production at Zuffenhausen, with a view to moving the environmental impacts of our factories ever closer to zero. On the route to a Zero Impact Factory – tackling the future with courage!

Presentation of the next environmental statement

The next consolidated environmental statement will be presented to the public in the autumn of 2020 at the latest. Updated environmental statements will be produced for 2018 and 2019.

Environmental verifier's declaration on verification and validation activities

I, the undersigned, Ulrich Wegner, the EMAS environmental verifier for TÜV SÜD Umweltgutachter GmbH with registration number DE-V-0045, accredited for scope 29 (NACE code), declare to have verified whether the site as indicated in the consolidated environmental statement of the organisation

**Dr. Ing. h.c. F. Porsche AG, Porscheplatz 1, 70435 Stuttgart
for the site Zuffenhausen, Porscheplatz 1, 70435 Stuttgart**

with registration number D-175-00010, meets all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).

By signing this statement, I declare that

- the verification and validation has been carried out in full compliance with the requirements of Regulation (EC) No 1221/2009,
- the outcome of the verification and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment,
- the data and information of the consolidated environmental statement of the site reflect a reliable, credible and correct image of all the site's activities, within the scope mentioned in the environmental statement.

This document is not equivalent to EMAS registration. EMAS registration can be granted only by a Competent Body under Regulation (EC) No 1221/2009. This document shall not be used as a stand-alone piece of public communication.

Munich, July 12, 2017

U. Wegner
Environmental verifier from TÜV SÜD Umweltgutachter GmbH

Validation/certificates



Publisher

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