



PORSCHE



Active for the Environment & Energy

Updated Environmental Statement 2015 – Zuffenhausen Facility

Table of Contents

Introduction	3
Porsche and the Facility in Zuffenhausen	4
The Environment and Energy at the Facility in Zuffenhausen	6
Energy	7
Emissions	8
Water management	10
Waste management	11
Environmental Performance – Facts and Figures	13
Input-Output Balance from 2012 until 2014	14
Core indicators in accordance with EMAS III	16
Environmental and Energy Program	18
Validation Declaration and Certificate	21
Imprint	24

Introduction



Dr. Oliver Blume
Chairman of the Executive Board
Dr. Ing. h.c. F. Porsche AG

Assumes Responsibility

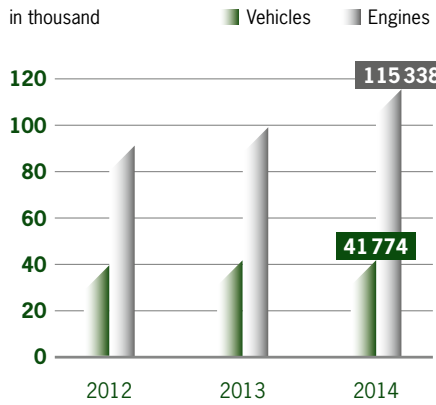
As a company, Porsche assumes responsibility for protecting the environment and for the efficient use of energy and resources. Success in environmental protection is not, however, merely the result of a functional environmental management system but also—and above all—the consequence of the personal commitment of all employees.

Environmental performance at Zuffenhausen is presented in the context of EMAS (Eco-Management and Audit Scheme) in the form of a comprehensive Consolidated Environmental Statement at three yearly intervals and in an annual update based on the consolidated version.

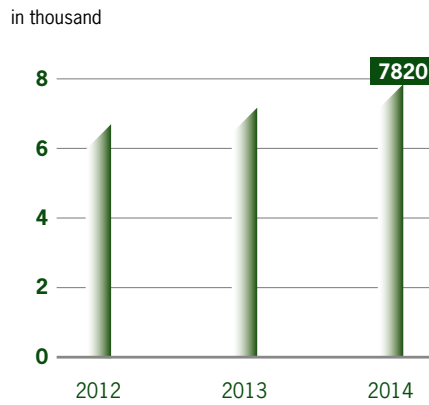
Porsche and the Facility in Zuffenhausen



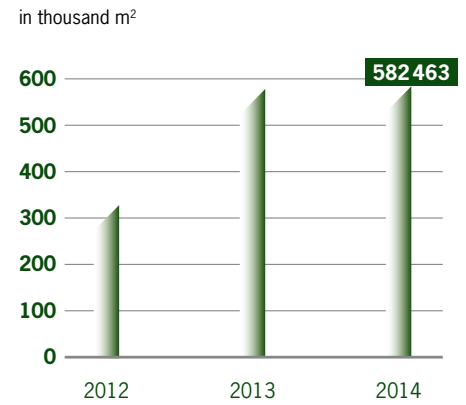
Production



Employees



Facility Surface



In 2014, the model series 911, Boxster and 918 Spyder were produced in Zuffenhausen. In addition, the engines of all Porsche sports cars were manufactured for the production facilities in Zuffenhausen, Leipzig and Osnabrück.

During the course of the year 2014, the personnel was further increased at the Facility in Zuffenhausen with 7,820 employees now working here.

Following the significant addition to facility space in 2013, brought about by the expansion of Plant 4 among other things, the factory site only grew to a minor degree in 2014.

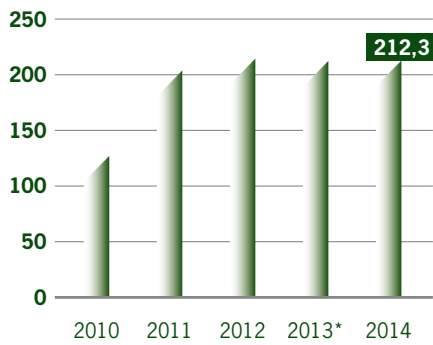
Environment and Energy at Zuffenhausen



Energy

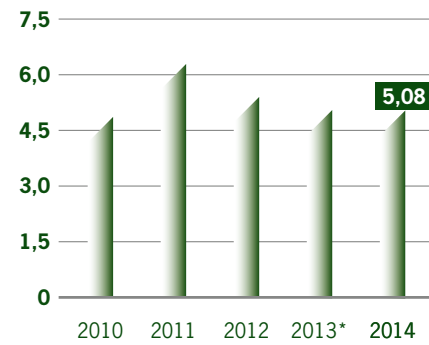
Total Energy Consumption

in thousand MWh



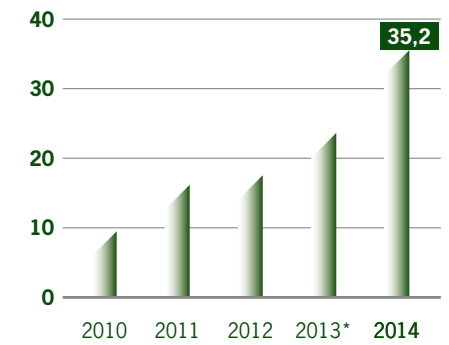
Specific Energy Consumption

in thousand kWh /VEH



Electricity Share from Renewable Sources

in thousand MWh



Energy Consumption

Energy consumption at the Zuffenhausen Facility is broken down into the components: electricity, heat, refrigeration and compressed air.

Development of energy consumption

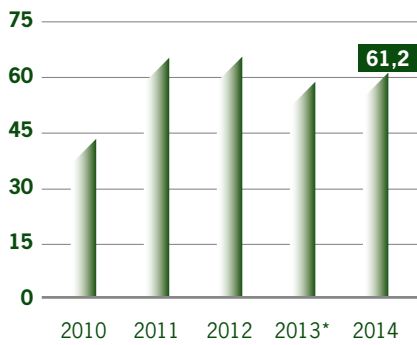
The aggregate, absolute consumption of energy remained at virtually the same level in comparison to that of the previous year. Moreover, it was possible to slightly reduce specific energy consumption despite the increase in factory floor space.

*The values for energy consumption in 2013 published in the Environmental Statement 2014 have been partially corrected.

Emissions

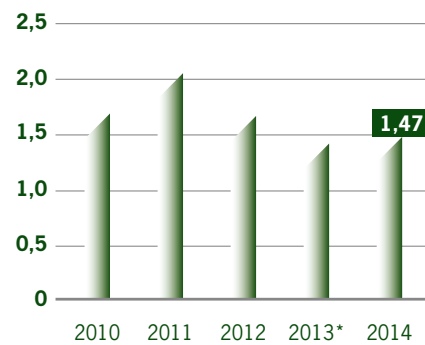
CO₂-Total Emissions

in thousand t



CO₂-Specific Emissions

in t/VEH



Development of carbon emissions

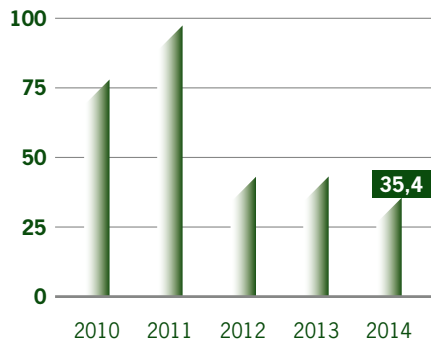
The development of carbon emissions correlates largely with that of energy consumption. In 2014 there was a change in the relationship between the sources of energy used compared with 2013, resulting in gas being partially replaced by electricity. Electrical energy is broken down as follows: 41.7% coal, 9.6% nuclear energy, 4.4% natural

gas, 1.8% other forms of fossil energy, 32.5% renewable energy (subsidized under the German Renewable Energy Act (Erneuerbare-Energien-Gesetz)) and 10.1% other renewable energy. It has been possible to increase the use of renewable energy from 35% (29.4% renewable energy subsidized under the Renewable Energy Act and 5.6% other renewable energy) to 42.6%.

*The values for carbon emissions in 2013 published in the Environmental Statement 2014 have been partially corrected.

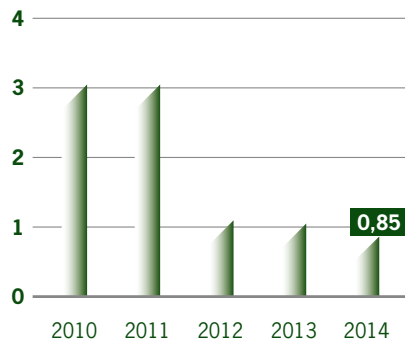
VOC - Total Emissions

in t



VOC - Specific Emissions

in kg/VEH



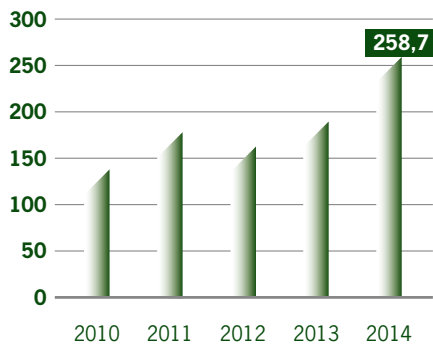
Development of VOC emissions

Optimizing the cleansing of air emissions in the paint shop has enabled a further reduction in VOC emissions. This means that VOC emissions were roughly 70% lower than the statutory threshold values in 2014.

Water management

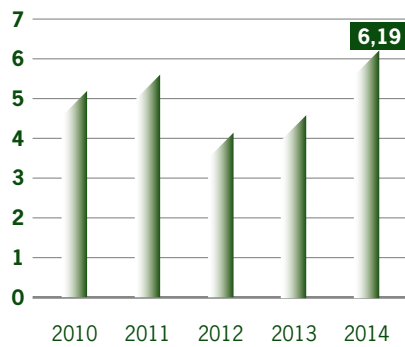
Total Water Consumption

in thousand m³



Water Consumption per Vehicle

in m³/VEH



Development of water consumption

Water consumption increased in 2014 largely due to the expansion of Plant 4 and the higher numbers of personnel this involved. In addition to the need to refill diverse fire-fighting water tanks there were also several burst pipes in the period under review.

Wastewater from pretreatment in the paint shop and from the car wash,

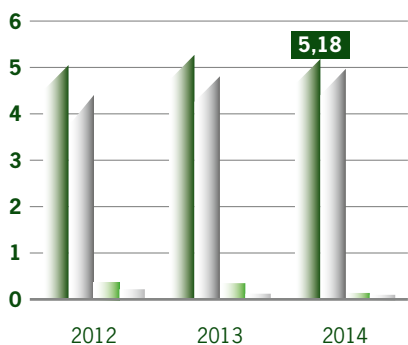
cleaning facilities and vehicle visual inspection plant has to be treated before it can be discharged into the sewer system. Wastewater treatment plant such as the neutralization systems in the paint shop or light material separation equipment, licensed in accordance with water management law, is in operation to treat the wastewater. This plant is constantly adjusted in accordance with the state of the art, enabling statutory threshold values to be considerably undercut.

Porsche-specific threshold values far below the statutory threshold values have been set internally for the paint shop wastewater treatment plant for example and these are met without exception. In 2014 the volume of wastewater was 26,573 cubic meters, signifying a 17% reduction in the volume of wastewater compared with the previous year.

Waste management

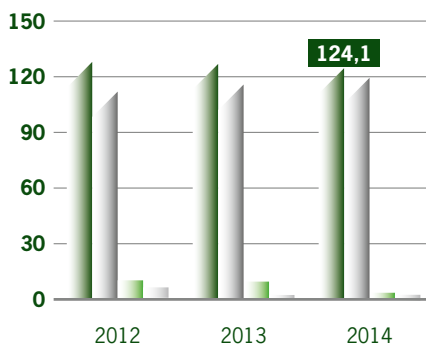
Total Waste Amount

in thousand t



Specific Waste Amount per Vehicle

in kg/VEH



■ Total Waste
■ Waste for reuse/recycling
■ Waste for disposal
■ Non-produktion-specific Waste

Development of waste amount

Thanks to diverse measures introduced in production, for example the internal treatment of waste cleaning water generated by the paint shop and the reduction of adhesive waste in car body construction, it has been possible to reduce aggregate waste volumes by comparison with 2013.

The total volume of glue and adhesive waste has been reduced in car body construction and in the paint shop. Whereas in 2013 waste quantities still amounted to approx. 30 t, they sank to only approx. 18 t in 2014. The reduction in these waste quantities by

roughly 40% is to be ascribed, for instance, to process optimizations in bonding in car body construction and when rinsing the robot bonding plant.

Nowadays in logistics in Zuffenhausen more than 95% of supplied parts are delivered in returnable containers in accordance with Porsche standards. Nonetheless there are still occasionally container bottlenecks at suppliers, something which leads to an increased expense of time and money on repackaging in incoming goods and to a greater use of non-returnable packaging.

The use of non-returnable packaging and packaging expenditure can be perma-

nently minimized whilst maintaining the specified quality by adopting targeted container management, i.e. ongoing monitoring and evaluation of the time and money spent of repackaging and the immediate provision of universal containers in the event of bottlenecks.

Disposal audits are conducted in the context of the waste management concept, in addition, only the disposal plant approved by environmental management is taken into consideration in invitations for tender by purchasing. The waste management concept guarantees legal security in the disposal of waste.

Non-hazardous waste

3800 t of non-hazardous waste were generated at the Zuffenhausen Facility in 2014, almost 98% of which was recycled. The types of nonhazardous waste exceeding a waste volume of 50 t are set forth below.

Non-hazardous waste			
Non-hazardous waste > 50 t/year	2012	2013	2014
Sludge from the Facility's own wastewater treatment plant	95 t	118 t	113 t
Aqueous sludge containing paint or lacquer	237 t	331 t	279 t
Packaging made of paper and cardboard	636 t	619 t	644 t
Plastic packaging	275 t	283 t	238 t
Wooden packaging	345 t	366 t	432 t
Used tires	136 t	142 t	131 t
Paper and cardboard	91 t	87 t	67 t
Biodegradable kitchen and canteen waste	96 t	118 t	140 t
Unsorted municipal waste	720 t ¹	705 t	853 t
Metallic waste	1104 t	1273 t	794 t

¹ Additional volume of 40 t of unsorted municipal waste was disposed of.

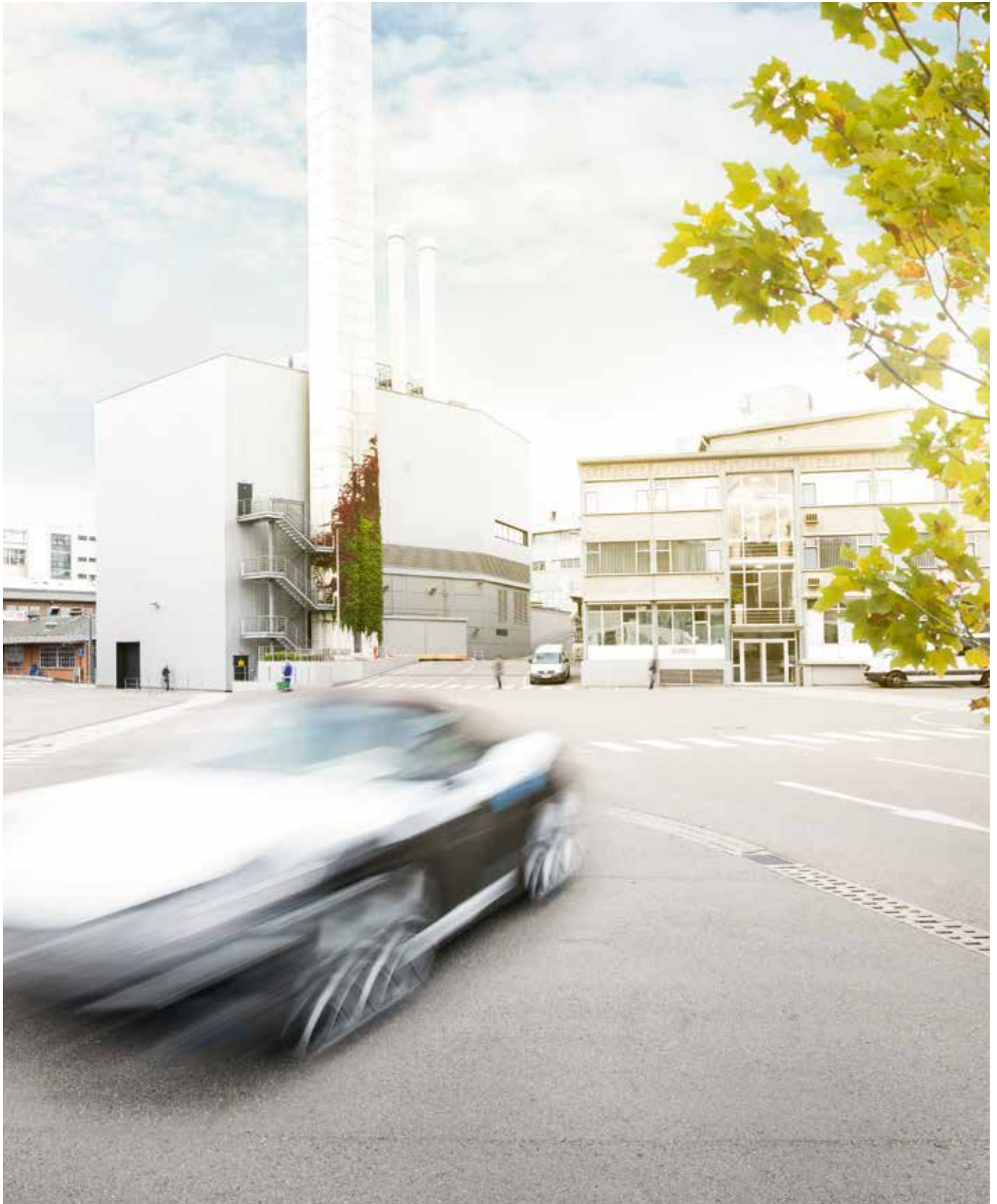
Hazardous waste

1384 t of hazardous waste were generated at the Zuffenhausen Facility in 2014, almost 95% of which was recycled, constituting an improvement of nearly 28% compared with the previous year. The various types of hazardous waste with waste volumes exceeding 20 t are presented below.

Hazardous waste			
Hazardous waste > 20 t/Year	2012	2013	2013
Aqueous washing liquids	22 t	215 t	76 t
Other reaction and distillation mixtures	341 t	361 t	402 t
Waste from adhesives and sealing agents	34 t	34 t	35 t
Halogen-free processing emulsions and solvents	180 t	142 t	193 t
Non-chlorinated machine oils	11,08 t ²	25 t	26 t
Sludge from oil/water separators	126 t	66 t	80 t
Other solvents and solvent mixtures	98 t	66 t	99 t
Lead batteries	56 t	21 t	59 t
Oil and concentrates from separation processes	16,77 t ²	43 t	31 t

² undisclosed

Environmental Performance – Facts and Figures



Input-Output Balance from 2012 until 2014

Input	2012	2013	2014	Unit
Production materials Used on vehicle manufacture and inclusive of engine production with effect from 2009; corresponds to total output quantity of core indicators in accordance with EMAS III	67 158	70 997	74 738	t
Total energy consumption Renewable energy proportion of total consumption (electricity)	214 133 17 480 8%	212 033* 23 499 11%	212 254 35 181 17%	MWh MWh
Proportion of electrical energy (incl. compressed air energy) Proportion of internal production (CHP) Proportion of external production Renewable energy proportion of external production	76 335 12 234 46 921 17 480	81 352 14 212 43 641 23 499	97 071 14 487 47 403 35 181	MWh MWh MWh
Total proportion of heat Proportion of internal production Proportion of external production	– – –	110 784* 110 784*	97 491 97 491 –	MWh MWh MWh
Proportion of combustible gases for production processes	19 442	19 753	17 652	MWh
Proportion of special energy products (e.g. emergency power station)	–	144	39	MWh
Fuel consumption at the Facility (included in total consumption) Heating oil Natural gas Gasoline fuel	– – –	1864 138 197* 3025	1776 118 010 3117	MWh MWh MWh
Total Water consumption Municipal water Spring water	163 598 163 598 0	190 320 190 230 0	258 729 258 729 0	m³ m ³ m ³

*The values for the production facility published in the Environmental Statement 2014 have been partially corrected.

Output	2012	2013	2014	Unit
Total volume of waste	5047	5271	5184	t
Proportion of production waste for recycling	4414	4805	4967	t
Proportion of production waste for disposal	391	383	132	t
Proportion of non-production waste	242	82	86	t
Total annual emissions of greenhouse gases Zuffenhausen Facility, without refrigerants				
Total carbon dioxide emissions	65 577¹¹	58 737^{12*}	61 216¹²	t
Proportion of direct carbon dioxide emissions	25 119	30 203*	26 117	t
¹¹ With effect from 2012 the total volume of carbon dioxide emissions is also presented. The VDA***) emission factor (2012) is taken for electricity and the TEHG**** (IPCC2006) emission factors are taken for gas and heating oil.				
¹² With effect from 2013 the VW power plant emission factor "Residual mix" is taken and the CO2 emissions from fuel combustion in engine test beds is integrated.				
Total annual emissions into the air Zuffenhausen Facility				
Sulphur dioxide	0,2 ¹³	0,16*	0,14	t
Nitrogen oxide	21,5	25,6*	22	t
Dust (PM)	0,2	0,17*	0,15	t
Emissions up until 2011 are based on the VDA emission factors (2005), as from 2012 on the updated VDA emission factors (2012).				
¹³ Reduction resulted from the updated emission factors for Sulphur dioxide.				
Solvent emissions from the paint shop	42,7	43	35,4	t
Emission values up to 2011 based on max. solvent emissions permissible. Emission values from 2012 stem from emission measurements				
Wastewater	128 305	164 502	238 343	m³
Calculated difference to water consumption through water loss				
wastewater from paint shop (new paint shop since 2012)	20 569	31 907	26 573	m ³

*The values for the production facility published in the Environmental Statement 2014 have been partially corrected.

Core indicators in accordance with EMAS III

The core indicators specified in EMAS III are presented in the Environmental Statement of Porsche AG to illustrate fundamental direct impacts on the environment (see page 17).

The reference base for the core indicators is the total output quantity of 74,378 t at the Zuffenhausen Facility, calculated using the production figure, the weight of the vehicle models, the number of engines produced and their weight. The production of components for car body construction and the saddlery has not been taken into account.

By means of these core indicators, Porsche ensures that the environmental performance of the fundamental environmental impacts is being illustrated. Due to different production figures, depth of production and location-specific underlying conditions, it is not possible to compare the core indicators with sites in other locations, however.

Core Indicators in accordance with EMAS III		2012	2013	2014	Unit
Energy efficiency	Total direct energy consumption (electricity and heat) [MWh]/Total output quantity [t]	3,2*	3,0*	2,8	MWh/t
	Total renewable energy use (electricity and heat) [MWh]/Total output quantity [t]	0,26	0,33	0,47	MWh/t
Material efficiency	Total mass flow of metals used [t]/Total output quantity [t]	0,8	0,8	0,6	t/t
Water	Water consumption [m ³]/Total output quantity [t]	2,4	2,7	3,5	m ³ /t
Waste	Total volume of waste [kg]/ Total output quantity [t]	75,2	74,2	69,4	kg/t
	Total output quantity [kg] /Total output quantity [t]	65,7	67,7	66,5	kg/t
	Total volume of waste for recycling [kg]/Total output quantity [t]	5,8	5,4	1,8	kg/t
	Total output quantity [kg]/ Total output quantity [t]	3,6	1,2	1,2	kg/t
Bio-diversity	Use of land [m ² of built-up area]/Total output quantity [t]	4,9	8,1	7,8	m ² /t
Emissions	Total annual emissions of greenhouse gases [kg of CO ₂ equivalent]/Total output quantity [t] (Zuffenhausen Facility; does not include any refrigerants) <small>Emissions of other greenhouse gases CH₄, N₂O, HFCs, PFCs and SF₆ in accordance with EMAS III, Annex IV, are not relevant at Porsche.</small>	976,5	827,3*	819,1	kgCO ₂ e/t
	Total annual emissions of NO ₂ in the air [kg]/Total output quantity [t] (Zuffenhausen Facility)	0,320	0,361*	0,294	kg/t
	Total annual emissions of SO ₂ in the air [kg]/Total output quantity [t] (Zuffenhausen Facility)	0,003	0,002*	0,002	kg/t
	Total annual emissions of PM (particulate matter) in the air [kg]/Total output quantity [t] (Zuffenhausen Facility)	0,003	0,002*	0,002	kg/t

*The values for the production facility published in the Environmental Statements 2013 and 2014 have been partially corrected.

Environmental and Energy Program



Environmental and energy management system

Environmental and Energy Targets	Measure	Deadline	Status
To design a system for capturing and monitoring the consumption of resources and energy in the engine plant expansion	Capturing of the major consumption of resources and energy, of waste and waste-water volumes and evaluation and stipulation of the capturing and monitoring systems	2014	Goal achieved
To conceive and implement a method for identifying and collecting core indicators to plan measures to save energy and resources in the 918 Spyder Manufactory	Capturing of the major consumption of resources and energy, of waste and waste-water volumes and evaluation and stipulation of the capturing and monitoring systems	2014	Goal achieved

Conservation of resources and imissions protection

Environmental and Energy Targets	Measure	Deadline	Status
To reduce CO ₂ emissions in logistics	Increasing the fill levels of the carriers to improve truck capacity utilization	2015	Started

Conservation of resources and waste management

Environmental and Energy Targets	Measure	Deadline	Status
A concept to reduce the consumption of adhesives and waste volumes in body shell production	Optimization of adhesive robot processes	2014/ 2015	Goal partially achieved
To reduce repackaging in the 918 Spyder Manufactory by 10%	Optimization and use of special load carriers	2014	Goal achieved
Reduction of waste from the paint shop in 30 t. per year	Internal preparation of the condensate of the air purification system	2016	Started

Conservation of resources and water protection

Environmental and Energy Targets	Measure	Deadline	Status
To reduce water consumption on car cleaning in vehicle assembly	Concept for the installation of a new car wash at the final production stage of assembly	2015	Started
To reduce the water consumption/waste water in the paint shop by 20-30 m ³ per day	Optimizing the operating mode in the cascade degreasing pretreatment	2015	Goal achieved

Conservation of resources and energy efficiency

Environmental and Energy Targets	Measure	Deadline	Status
To increase environmental and energy efficiency in the engine plant expansion	Implementation of the plan and realization of defined measures from the concept (PV plant, mains feedback, hot test, roof greening)	2014	Goal achieved
To economize on energy by 5% in body shell production	Lighting and ventilation control adjusted to production times in line with requirements	2014/ 2015	Goal partially achieved
To reduce compressed air consumption by 3% in body shell production	Optimization of leakage detection and measures to economize on compressed air	2014/ 2015	Goal partially achieved
To reduce energy consumption by 5% by modernizing technical plant in logistics	Evaluation and exchange of the shelving operating equipment in the high bay storage and use of efficient industrial vehicles	2014	Goal partially achieved
To reduce energy requirements in door assembly by 2.5% using drive technology with optimized consumption in vehicle assembly	Planning and installation of energy efficient power units	2015	Started
To conceive and implement lighting management to save energy in the paint shop	Optimization of lighting control in the production areas, use of LED technology in the new light tunnel	2014	Goal achieved
To reduce the consumption of energy and resources in the paint shop	Increasing the degree of use of plant technology by increasing availability/reducing errors	2014	Goal achieved
To economize on energy by 10% in the 918 Spyder Manufactory	Adjustment to lighting and plant control in production periods in line with requirements	2014	Goal achieved

Conservation of resources and materials efficiency

Environmental and Energy Targets	Measure	Deadline	Status
To reduce the consumption of protective gases in body shell production	Identification and implementation of measures	2014/ 2015	Goal partially achieved

Validation Declaration and Certificate



Certificate ISO 50001: 2011



Certificate ISO 14001: 2004



Presentation of the next Environmental Statement

The next Consolidated Environmental Statement will be presented to the general public in the autumn of 2017 at the latest. An Updated Environmental Statement will be prepared for 2016.



Validation Declaration/Certificate

Declaration by the Environmental Auditor on the Auditing and Validation Activities

The undersigned Ulrich Wegner, EMAS environmental auditor of TÜV SÜD Umweltgutachter GmbH with registration number DE-V-0045, licensed for the area 29 (NACE Code), hereby confirms that he assessed whether the Facility with registration number DE-175-00010,

Dr. Ing. h.c. F. Porsche AG,
Porscheplatz 1, 70435 Stuttgart

for the Facility Zuffenhausen,
Porscheplatz 1, 70435 Stuttgart

complies with all the requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary

participation by organizations in a Community eco-management and audit scheme (EMAS), as indicated in the Consolidated Environmental Statement of the organization.

By signing this Certificate it is confirmed that

- the audit and validation were conducted in full compliance with the requirements of Regulation (EC) No 1221/2009,
- the result of the audit and validation confirms that there is no evidence of non-compliance with applicable environmental regulations,
- the data and information of the Updated Environmental Statement of the Facility provide a reliable, credible and correct picture of all activities at the Facility within the area covered by the Environmental Statement.

This Certificate may not be equated to registration under EMAS. Registration under EMAS may only be effected by a competent body pursuant to Regulation (EC) No 1221/2009. This Certificate may not be used as an independent basis for informing the general public.

Stuttgart, 03.07.2015

U. Wegner
Environmental auditor of
TÜV SÜD Umweltgutachter GmbH

Imprint

Published by:

Dr. Ing. h.c. F. Porsche AG, 2015

Porsche, the Porsche logo, 911, Carrera, Panamera, Spyder and other trademarks are registered trademarks of Dr. Ing. h.c. F. Porsche AG.

Dr. Ing. h.c. F. Porsche AG
Porscheplatz 1
70435 Stuttgart
Germany
www.porsche.com

Concept, Edition & Layout:

C3 Stuttgart
Creative Code and Content GmbH

Images:

Oliver Kröning, Porsche AG

Errors and omissions excepted.

Contract persons

Matthias Rauter

Corporate Communications

Tel.: +49 (0) 711/911-24332

Fax: +49 (0) 711/911-24623

E-Mail: Matthias.Rauter@Porsche.de

Dr. Carolyn Hutter

Business Unit for Sustainability

Tel.: +49 (0) 711/911-25811

Fax: +49 (0) 711/911-27146

E-Mail: Carolyn.Hutter@Porsche.de

Christoph Warth

Environmental Management

Tel.: +49 (0) 711/911-25396

Fax: +49 (0) 711/911-27204

E-Mail: Christoph.Warth@Porsche.de

Anke Höller

Energy Management

Tel.: +49 (0) 711/911-24848

Fax: +49 (0) 711/911-27509

E-Mail: Anke.Hoeller@Porsche.de