

2018 GREEN BOND REPORT



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“As part of the Volkswagen Group, we are committed to the 17 Sustainable Development Goals developed by the UN Member States that entered into effect in 2016 and that provide a blueprint for achieving global economic development in a way that is compatible with social justice and the environmental limits of the planet.”

Dr Ralph Sawalsky,
Managing Director Finance and IT



Selected projects



“Wohnen am Schlosspark”
(Schlosspark residential project)



“Wohnen am Salzteich”
(Salzteich residential project)



Business apartments



“Wohnen am Glockenberg”
(Glockenberg residential project)



“Wohnen am Wellekamp”
(Wellekamp residential project)



Quartier Steimker Gärten



IT:CITY, Wolfsburg



LOZ Bratislava



LOZ Braunschweig



Preface

Dear investors and stakeholders,

With a volume of over EUR 160 billion in 2018, the green bond market is continuing to grow rapidly [1]. Aside from increasing awareness of the significance of climate change and the sustainable philosophies and actions of companies, the reasons for that include the Paris climate agreement, which was agreed by 196 countries and aims in particular to limit the rise in average global temperature to two degrees and is intended to align financial flows with sustainable, climate-friendly projects. The European Union's High-Level Expert Group on Sustainable Finance (HLEG) was set up to support and promote the required stronger focus of financial and capital markets on sustainability.

While the real estate industry has focused its sustainability efforts on the construction, operation and commercial exploitation of properties, little attention has been paid to the green or sustainable financing of such projects, although the financial sector has a crucial role to play in progress towards sustainable development. That requires "patient capital", with investors willing to forgo quick returns. In order to finance EU climate and energy policy alone, additional annual investments of some EUR 170 billion are required in the fields of refurbishment, energy-efficient buildings, renewable energy sources, infrastructure and many other areas.

The real estate sector accounts for almost 40% of all greenhouse gas emissions in Germany [2], so the real estate industry has a particularly great responsibility. Volkswagen Immobilien, a subsidiary of Volkswagen AG, is playing a pioneering role in the real estate industry as the first company within the real estate industry and the first company within the Volkswagen Group to offer green bonds. For our green bonds we have been honoured with the "immobilienmanager-award 2019" in the category "financing". Through our selection and assessment of projects, we have broken new ground and have defined criteria that can clearly be understood by investors, issuers and other market players.

This report is designed to inform you for the first time about our efforts, activities and the impact of our measures. It starts by explaining our strategy and financing approach, followed by an overview of our "green portfolio". In addition, Chapter 5 provides information about the impact of our measures and the resulting savings in CO₂ emissions.

We hope you have an enjoyable read!

Dr Fabian Lander
Head of Corporate Finance
and Sustainability



Strategy

Corporate strategy

Sustainability in practice is a core part of our VWI 2025 strategy. That means making our activities compatible with economic, environmental and social requirements. As a company, we are committed to attractive and sustainable living and working spaces. Our aim is to reduce the CO₂ emissions of our commercial and residential properties by at least 25% compared to the benchmarks in the German Energy Saving Ordinance (EnEV). Our green funding approach is pivotal to our integrated sustainability approach and our responsibility for a sustainable future. In view of the 17 Sustainable Development Goals developed by the UN Member States, [3] as a company we are focusing on the following goals by making use of green capital:



THE GLOBAL GOALS For Sustainable Development



Promotion of healthy living and well-being for people of all ages

Health is key to sustainable development. Our BLUE BUILDING standard therefore establishes

high requirements with respect to comfort and living quality. Functionality and sustainable usability are enhanced by healthy indoor air quality, accessibility, security and an innovative mobility concept.



Access to affordable, modern, reliable and sustainable forms of energy

We aim to reduce our CO₂ emissions by 25%, which is why we have made the decision to

move away from fossil fuels. District heating is the source of 90% of our heating energy; carbon-neutral Volkswagen Naturstrom® is used to meet communal electricity requirements and our own electricity requirements.



Development of infrastructure and promotion of sustainable industrialisation and innovation

Volkswagen AG is establishing itself as a provider of carbon-neutral, sustainable mobility. We are promoting electric mobility and the development of sustainable quarters in cities by establishing charging stations and mobility hubs for both office buildings and new residential projects.



Making cities and residential areas inclusive, safe, resilient and sustainable

We consider the Steimker Gärten project a highly sustainable, integrated and innovative quarter that serves as a model for future residential developments. We are establishing services in the quarter for access to energy and transport and are reinforcing biodiversity measures.



Measures to tackle climate change and its effects

Ongoing development of our properties helps to reduce energy requirements and greenhouse gas emissions in an efficient and sustainable way. We aim to optimise the resource efficiency of new and existing properties on an ongoing basis [4].



Biodiversity

Biodiversity provides the basis for our existence. The construction and operation of our buildings should therefore have minimum impact on the environment and should protect healthy nutrition, clean water, fertile soils and a balanced climate.

Financing approach

Financing approach

Long-term financing is of critical importance for Volkswagen Immobilien GmbH's real estate business. We regard financing as a natural part of any sustainability concept: properties that are built sustainably should also be financed sustainably. Accordingly, the subsidised loans provided by the development bank KfW and green bonds in the form of "Schuldschein" loans and registered bonds are of key importance to us.

Reasons for a green bond

We consider green bonds to be forward-looking instruments. In accordance with the HLEG's call for financial and capital markets to have a more sustainable focus, green bonds play a significant part in showing capital markets how sustainable a company's behaviour actually is, what specific environmental measures are planned and implemented and what impact such measures have on the environment. The obligation to publish regular impact reports is one way in which that is achieved.

Our aim is to provide green capital for green assets. We aim to make the impact of our measures verifiable and measurable in relation to our CO₂ reduction goals. In addition, our Green Bond Programme allows us to diversify our investor basis and to tap into a new source of financing.

We firmly believe that our engagement in this field is compatible with the values of our customers. To fulfil our social and commercial responsibilities, our aim is to establish ourselves as a sustainable investor and green issuer on the capital market on a long-term basis. Furthermore, the Green Bond Programme reinforces the credibility of our sustainability strategy.

External ratings and certification

We believe that green bonds should only be issued by companies that verifiably act in a sustainable manner and that have established appropriate sustainability governance systems. We have therefore opted for a two-tier process underpinned by an Environmental Social Governance (ESG) rating process. Accordingly, we have chosen to be subject to the ESG rating process of ISS-oekom, a leading international sustainability agency. Our "PRIME" status (12/2017) certifies that we meet ISS-oekom's rigorous sustainability requirements at a very high level. We are ranked 8th of 243 real estate companies assessed worldwide (as at 12 March 2018). We are in the very top tier with regard to social sustainability.



In addition, we have deliberately sought the second-party opinion of ISS-oekom and certification by the Climate Bonds Initiative as an external opinion to establish the credibility of our approach as a debut issuer and to explicitly rule out any kind of "green washing". Our first green bond with a value of over EUR 107 million in the form of "Schuldschein" loans and registered bonds with terms of between 5 and 15 years was successfully certified by the Climate Bonds Initiative (CBI) on 8 May 2018. That guarantees that our properties comply with the rigorous CBI requirements for low-carbon buildings.

For our green bonds we have been honoured with the "immobilienmanager-award 2019" in the category "financing".



Green Portfolio

Overview

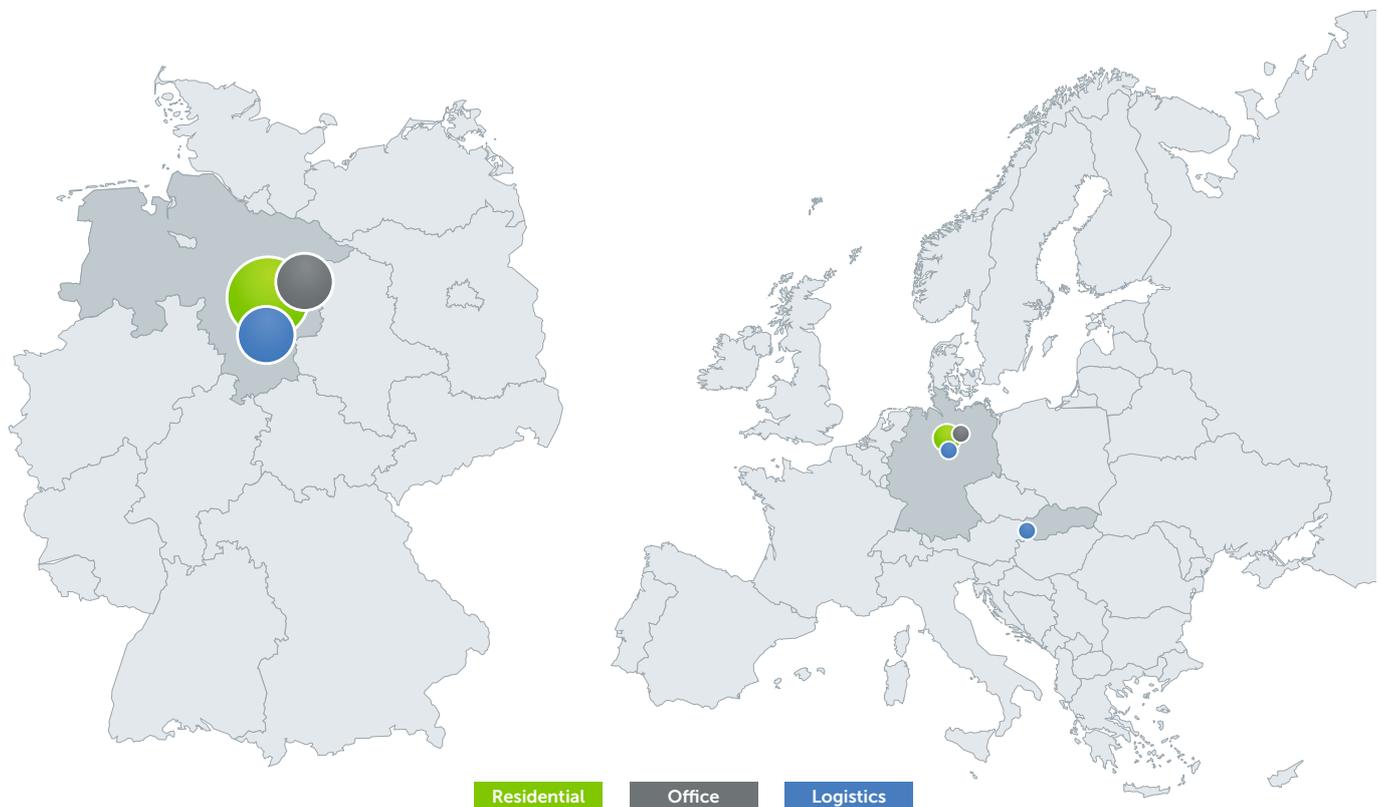
Our green portfolio with a value of roughly EUR 600 million, based on internal and external market valuations, comprises a total of 128 properties: 3 logistics buildings, 2 office buildings and 123 residential buildings. Of the 123 residential buildings, 22 are new-build properties and 101 are refurbished properties. According to our selection criteria in the Green Bond Framework, 27 properties are based on the German Energy Saving Ordinance (EnEV), while refurbishments are based on the A+, A and B energy efficiency classes.

Twenty-six of our properties meet the BLUE BUILDING standard.

Apart from a logistics centre in Slovakia, all our properties are located in Germany. Our green commercial properties in Germany are all located in Lower Saxony. Our green residential portfolio is located in Wolfsburg for historical reasons.

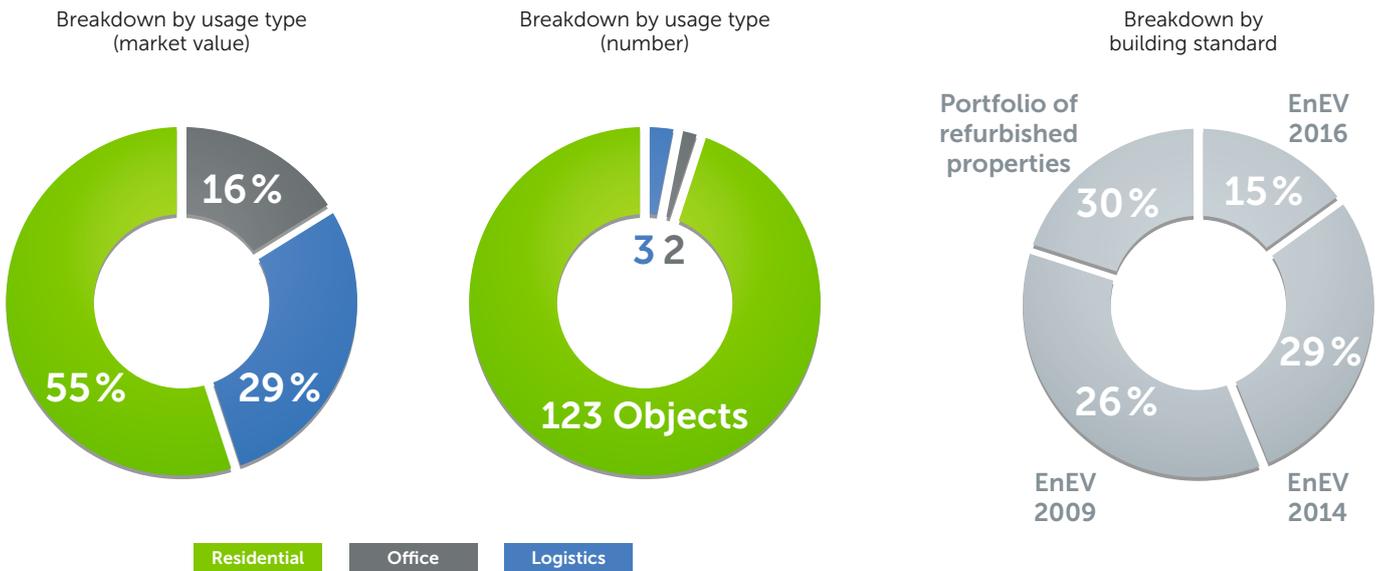
Breakdown

geographically



Breakdown

by building type



Description of selected projects

In recent years, we have created liveable and sustainable living spaces by planning and implementing a number of new-build projects. We will continue to create high-quality living spaces in 2019 as part of our residential new-build programme.

One project that has already been completed is the "Wohnen am Schlosspark" (Schlosspark residential project) in Wolfsburg, consisting of three modern apartment buildings with a total of 20 rental apartments. The new-builds have floor heating, step-free accessible access, spacious balconies and exterior sun screens. The properties were constructed in compliance with our BLUE BUILDING standard and therefore guarantee environmental friendliness in the form of low primary-energy requirements, reduced CO₂ emissions and lower energy costs. In addition to that high standard, the buildings comply with the "KfW Efficiency House 55" criteria, which are far more stringent than the statutory requirements. That ensures both environmental sustainability and sustainability of the buildings, while also benefitting residents.

"Steimker Gärten", which comprises the "PromenadenCarré", "Hofgarten", "Lindenhöfe" and "Weidenplan" projects in Wolfsburg, is an example of a current construction project. Residents will be able to move into the first of the total of 260 rental apartments – which have been built with great attention to detail – in summer 2019. The "Steimker Gärten" construction project comprises a total of four real estate projects within our portfolio.

"PromenadenCarré" provides 54 high-quality rental apartments in three-storey to four-storey apartment buildings right at the heart of the quarter. Twenty-six rental properties are being built in two modern and energy-efficient three-storey apartment buildings in "Hofgarten". A further 152 rental apartments on four floors are located to the north and south of the promenade in "Lindenhöfe". The fourth construction project, "Weidenplan", in Steimker Gärten provides 31 attractive apartments in two four-storey buildings, which are located right by a large green area with high biodiversity.

Allocation report

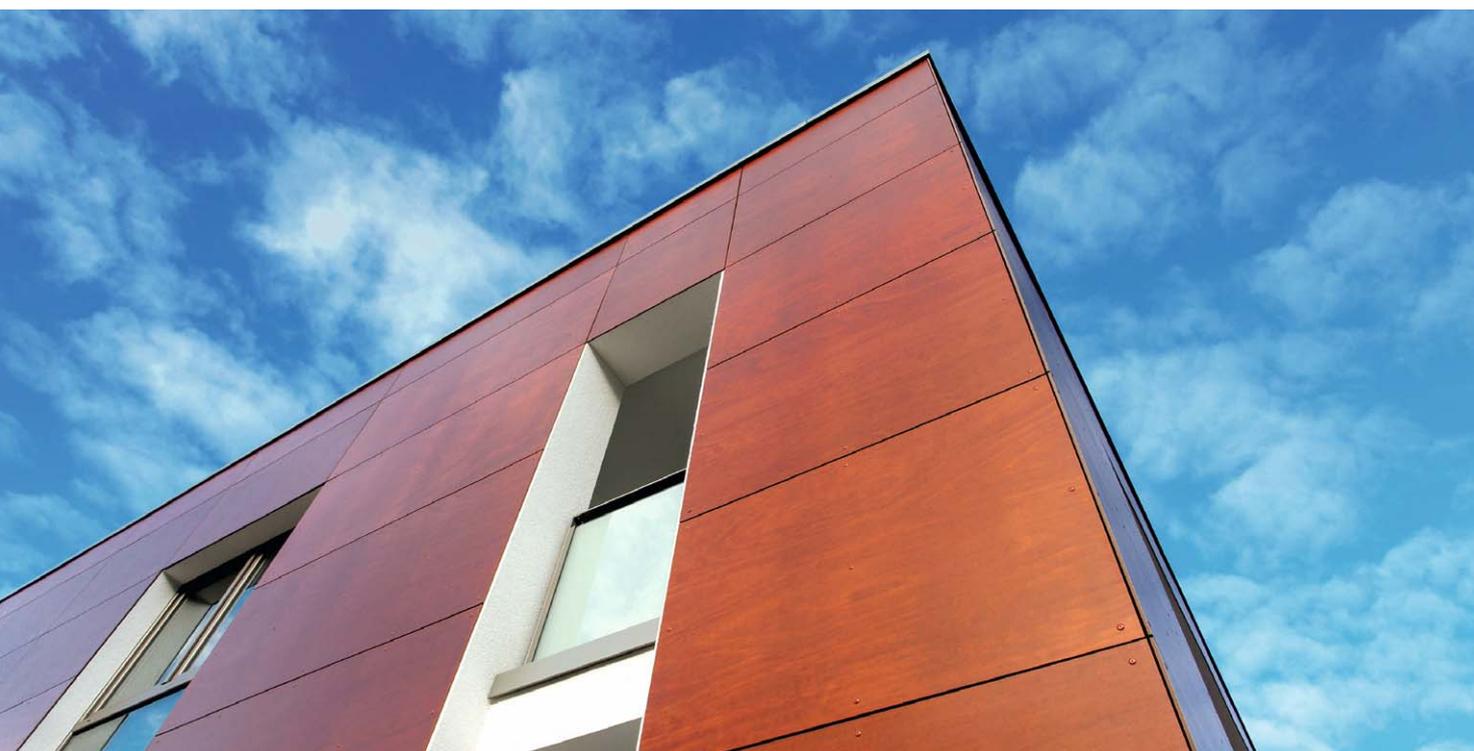
Portfolio allocation

Based on internal and external market valuations, our green properties have a value of EUR 606.9 million. On the other side of the balance sheet is allocated financing with a total value of EUR 164.8 million, with our green bonds accounting for EUR 107 million of that amount. Balanced against the green assets are unallocated equity and liabilities of EUR 442 million.

As at 31 December 2018

*) "Schuldschein" loans/registered bonds

Assets		Equity and liabilities	
Green assets (fair value)	606,932,000.00 €	Allocated to mortgage loans	43,000,000.00 €
		Allocated to KfW loans	14,821,839.56 €
		Allocated to green "Schuldschein" loans/registered bonds*	107,000,000.00 €
		Unallocated amount balanced against green assets	442,110,160.44 €
Sum Green Assets	606,932,000.00 €	Max. green funding total	606,932,000.00 €

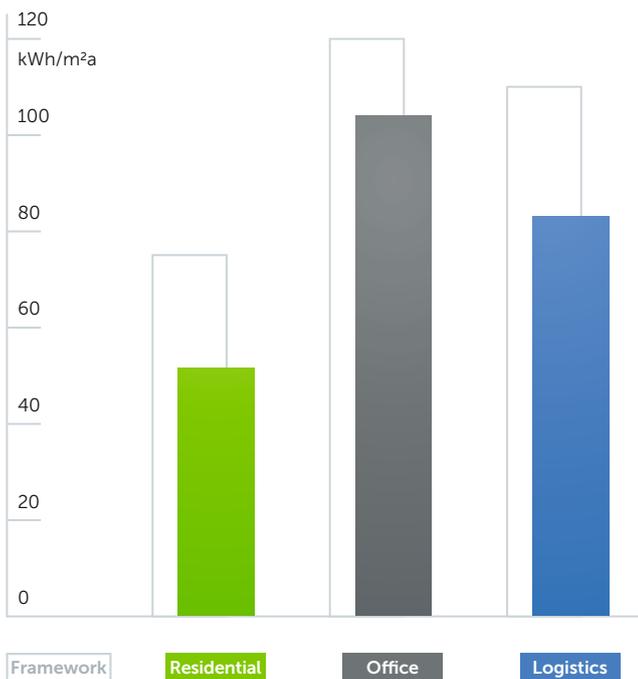
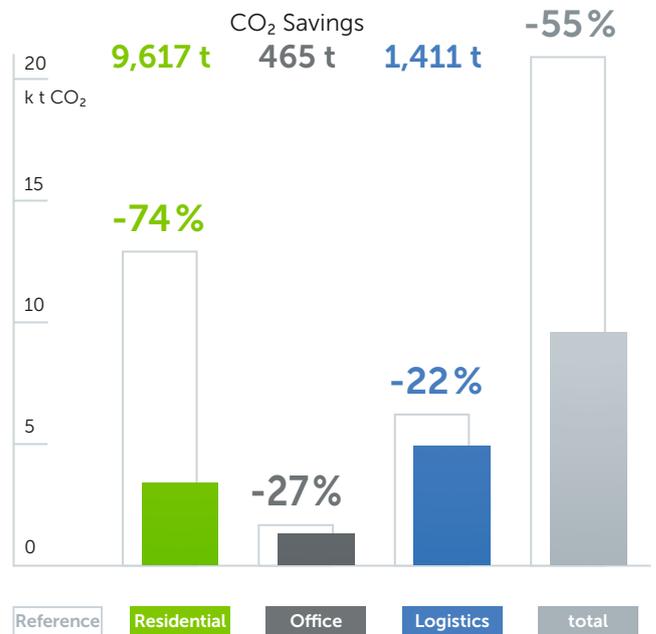


Impact Report

Saving in CO₂ emissions

Calculation of the difference between the final-energy performance indicators of our portfolio based on the relevant energy certificates (residential: consumption values, commercial: requirement values) and the values specified in the "ENTRANZE" and "Average EU building heat load for HVAC" studies gives a saving of 32.76 million kWh.

Based on the selected emissions factors, our properties generate CO₂ emissions of 9,566 tons. The CO₂ emissions level according to the underlying reference values is 21,059 tons. That means a saving of 11,493 tons of CO₂ for 2018. Broken down by usage types, that means a saving of 9,617 tons for residential buildings, a saving of 465 tons for office buildings and a saving of 1,411 tons for logistics buildings.



"Greenness" of the portfolios

For self-assessment of our portfolio, we have calculated the average weighted final-energy performance indicator in kWh/m² per year for our entire portfolio. The resulting value for the residential sector is 54.36 kWh/m² per year, while the resulting values for the logistics and office sectors are 87.56 kWh/m² per year and 108.63 kWh/m² per year respectively.

It should be noted that all those values are significantly lower than the values set out in our selection criteria in the Green Bond Framework. That means that our portfolio is very green, and also ensures that our properties will be among the most energy-efficient buildings within German building stocks over the long term of our bond.

Based on our actual CO₂ emissions we have a saving of 3,800 tons compared to our framework.

Annex

Methodology

We made the decision to calculate our CO₂ savings using the reference values set out in the "Average EU building heat load for HVAC" report [5] and the ENTRANZE study [6]. The ENTRANZE study forms the basis for calculating CO₂ savings with respect to residential and office buildings. Since no data were collected for logistics buildings in that study, we have referred to the 2009 German Energy Saving Ordinance (EnEV) reference values according to the "Average EU building heat load for HVAC" study for this asset class. In addition, we are analysing the portfolio using our own selection criteria according to the Green Bond Framework [7] to see whether and to what extent our selection criteria and current properties are sustainable and resilient against change.

Average energy efficiency of existing European building stocks

The European ENTRANZE project [6] mapped European building stocks and their energy performance indicators

for heating, cooling and hot water. Since Volkswagen Immobilien GmbH's relevant properties are all located in Germany, apart from a logistics building in Slovakia, those values have been used as the basis for calculating energy requirements.

Accordingly, the reference value for the stock of German office buildings is 170.2 kWh/m², while the reference value for the stock of German apartment buildings is 167.5 kWh/m².

Benchmarks according to the 2009 German Energy Saving Ordinance (EnEV)

Since no data were collected for logistics buildings in the ENTRANZE study, we have used the 2009 German Energy Saving Ordinance (EnEV) reference value of 110 kWh/m² according to the "Average EU building heat load for HVAC" study. That corresponds to a production/warehouse building with an area exceeding 3,500 m².

Framework criteria of the Volkswagen Immobilien green bonds

Base: Green Bond Assessment from Drees & Sommer

	Energy efficiency	German Energy Saving Ordinance (EnEV)	Other forms of certification
Residential building (Germany) New-build	A+ / A / B	EnEV 2009	BLUE BUILDING BLUE BUILDING plus DGNB Silver NWO 09
Residential building (Germany) Refurbished	A+ / A / B	EnEV 2009 +40 %	
Office building (Germany) New-build	< 120 kWh/m ² a	EnEV 2007	BLUE BUILDING BLUE BUILDING plus DGNB Silver NBV 09 LEED Gold NC / CS v3 BREEAM „Very good“ Energy Star 85
Office building (Germany) Refurbished	< 120 kWh/m ² a	EnEV 2009 +40 %	
Logistics building (Germany/Slovakia) New-build		EnEV 2009	BLUE BUILDING BLUE BUILDING plus LEED Gold NC / CS
Logistics building (Germany/Slovakia) Refurbished		EnEV 2009 +40 %	

Methodology for calculation of the saving in CO₂ emissions

1. Calculation of final-energy performance indicators

(a) Energy performance indicator of the portfolio in kWh per year: Multiplication of the energy reference area (in m²) for the respective real estate category by the associated final-energy performance indicator (in kWh/m² per year) and then aggregation of the results by real estate category.

(b) final-energy performance indicator according to the reference value in kWh per year: multiplication of the energy reference value (in m²) for the respective real estate category by the associated reference value according to the German Energy Saving Ordinance (EnEV) [5] or ENTRANZE [6] (in kWh/m² per year) and then aggregation of the results by real estate category.

(c) final-energy saving in kWh per year: subtraction of subtotals (b)-(a)

2. Calculation of saved CO₂ emissions in tonnes per year

(d) Emissions factor in thousand CO₂ per kWh with respect to final-energy requirements: based on the data of the German Federal Ministry for Economic Affairs and Energy

(BMW_i) [8], we have calculated the energy consumption structure for building services in the retail, commerce and services sector. Based on those data, we have calculated a weighted CO₂ emissions value of 329.8 g/kWh for the commercial sector using the emissions factors specified in GEMIS 4.95 [9]. In the residential sector, we have referred to the German Energy Saving Ordinance (EnEV) reference building with heat generation using heating oil (calorific value) with a CO₂ equivalent according to GEMIS 4.95 of 326 g CO₂/kWh [9].

(e) CO₂ emissions of our portfolio in tonnes per year: multiplication of the energy reference area (in m²) by the actual CO₂ emissions of the buildings in the respective real estate category (in tonnes/m²) and then aggregation of the results by real estate category.

(f) CO₂ emissions according to the reference values in tonnes per year: multiplication of the final-energy performance indicators according to reference value (b) by the emissions factor (d) of the respective real estate category.

(g) Saving of CO₂ emissions in tonnes per year: subtraction of subtotals (f)-(e).

Energy consumption structure for building services

	%	Gas	Oil	District heating	Electricity	Renewable energy
Room heating	72.5	38.2	16.1	5.5	2.6	10.0
Hot water	6.8	2.2	1.2	0.3	2.1	1.0
Air conditioning (cooling)	1.4	0.3	0.0	0.0	1.1	0.0
Lighting	19.3	0.0	0.0	0.0	19.3	0.0
Total	100.0	40.7	17.3	5.9	25.1	11.0
CO ₂ factor g/kWh		250.0	326.0	261.0	622.0	0.0
CO₂ weighted	329.8					

Sources

[1] Cf. International Capital Market Association (ICMA) (2019): Quarterly Report – Assessment of Market Practice and Regulatory Policy, <https://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/Regulatory-Policy-Newsletter>, S. 55.

[2] Cf. Zentraler Immobilien-Ausschuss e. V. (ZIA) (2012): Nachhaltigkeit in der Immobilienwirtschaft, <https://www.zia-deutschland.de/fileadmin/Redaktion/Positionen/PDF/ZIA-Nachhaltigkeitsleitfaden.pdf>, S. 8.

[3] Cf. German Federal Ministry for Economic Cooperation (BMZ) (2019): Die Agenda 2030 für nachhaltige Entwicklung, https://www.bmz.de/de/ministerium/ziele/2030_agenda/index.html.

[4] The reduction in the new-build segment refers to a 25% reduction in CO₂ emissions, a 45% reduction in primary-energy requirements and a 15% reduction in final-energy requirements compared to the reference values in the German Energy Saving Ordinance (EnEV); a saving of 25% CO₂ compared to the baseline year 2013 is planned for existing buildings.

[5] Cf. Van Holsteijn en Kemna B.V. (VHK) (2014): Average EU building heat load for HVAC Equipment, https://ec.europa.eu/energy/sites/ener/files/documents/2014_final_report_eu_building_heat_demand.pdf, S. 108.

[6] Vf. ENTRANZE: Heating and cooling energy demand and different loads for building types in different countries of the EU, D2.3. WP2 of the ENTRANZE Project, http://www.entranze.eu/files/downloads/D2_3/Heating_and_cooling_energy_demand_and_loads_for_building_types_in_different_countries_of_the_EU.pdf, S. 68–69.

[7] Vf. Volkswagen Immobilien GmbH (VWI) (2018): Green Bond Framework, https://www.vwimmobilien.de/fileadmin/PDF/nachhaltigkeit/VWI_Green_Bond_Framework.pdf, S. 5.

[8] Cf. German Federal Ministry for Economic Affairs and Energy (BMW_i) (2018): Energieverbrauch nach Anwendungsbereichen in Deutschland 2016 (insgesamt 9.151 PJ), Excel sheet excerpt number 7b.

[9] Cf. International Institute for Sustainability Analysis and Strategy (2017): GEMIS 4.95, <http://iinas.org/gemis-download-121.html>.

Further information about sustainability at Volkswagen Immobilien:
<https://www.vwimmobilien.de/en/the-company/about-us/sustainability.html>

Green Bond Report

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For improved readability, we have used the masculine form in the German version of the text. Naturally, this should be understood as referring to people of all genders. Thank you for your understanding.

