



Commercial
Vehicles

Sustainability Review

ID. Buzz and ID. Buzz Cargo



Volkswagen way to
ZERO

ID. Buzz Pro: power consumption combined: 20.7 - 18.9 kWh/100 km; CO₂ emissions combined 0 g/km; CO₂-class: A.
Information on consumption and CO₂ emissions, shown in ranges, depends on the selected vehicle equipment.

Vehicle images show optional equipment.

Dear Ladies and Gentlemen,
Dear Customers,

We are delighted to present the ID. Buzz and ID. Buzz Cargo – the first fully electric and fully connected vehicles from Volkswagen Commercial Vehicles. The two models do not only impress with their iconic design, which is reminiscent of the original and much-loved camper van, and with their high level of functionality, but they also represent our brand's commitment to sustainable mobility.

To actively shape climate-conscious mobility, it is critical to regard all phases of a vehicle's life cycle. The life cycle starts with the production phase of the ID. Buzz. We are continuously reducing the CO₂-emissions generated during the production phase. During the vehicle's usage phase, you yourselves have the greatest leverage for avoiding CO₂-emissions: by charging the vehicle with green electricity. We are also there to support you with sustainable charging solutions. And we have already thought about the third phase of recycling (end-of-life), too.

Volkswagen's "Way to Zero" is hereby our roadmap for effective climate protection, with ambitious targets and with clear milestones in order to achieve these targets. We take our responsibilities on this "Way to Zero" very seriously. You can find more information on our "Way to Zero" in this [brochure](#).

Moreover, our sustainability activities encompass more than the reduction of emissions. Social aspects – such as responsible raw material sourcing for our vehicle projects – must be implemented not only in accordance with the applicable framework conditions, but also in a spirit of partnership and fairness.

See for yourselves where we stand today with the ID. Buzz and ID. Buzz Cargo.
Enter with us the age of fully connected and climate-conscious electric mobility.

Yours sincerely,

Dr. Lars Krause
Executive Vice President Sales and Marketing

A handwritten signature in black ink, appearing to read 'Lars Krause', written in a cursive style.

Volkswagen Commercial Vehicles

Sustainability Review

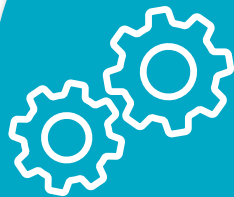
ID. Buzz and ID. Buzz Cargo

A new generation of mobility is here: the innovative ID. Buzz. The ID. Buzz is Volkswagen's first fully electric commercial vehicle: multifunctional, connected and completely re-interpreted. Furthermore, the ID. Buzz and the ID. Buzz Cargo set standards in terms of sustainability throughout their entire life cycle.

Production phase ¹

What can Volkswagen do today to have a positive impact on the production phase?

- 1. Responsible purchasing of raw materials**
More information on page 5
- 2. Use of recycled materials instead of virgin raw materials**
More information on page 6



Use phase

What can Volkswagen do to design an as sustainable use phase as possible? And what can customers do?

- 3. Optimised aerodynamics**
More information on page 7
- 4. Good air in the ID. Buzz**
More information on page 7
- 5. Climate-conscious use of the ID. Buzz through green electricity**
More information on page 7
- 6. Lower noise emissions**
More information on page 7



End-of-life phase

How recyclable is the ID. Buzz?

- 7. Second life for the high-voltage battery**
More information on page 8
- 8. High recyclability of the battery**
More information on page 8
- 9. Recycling in vehicle construction**
More information on page 8

¹Also contains supply chains and manufacturing.
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Vehicle images show optional equipment.

CO₂-Balance

The life cycle assessment analysis calculates the global warming potential according to DIN EN ISO standard 14040/44 and takes into account several tens of thousands of processes in the production phase. The environmental balance of the ID. Buzz has been audited and certified by TÜV Nord in Germany.

Even when only using green electricity during the use phase, the CO₂-balance does not equate zero. Why is this?

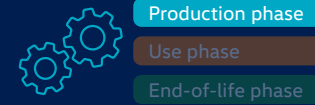
Small amounts of CO₂ are generated during the installation of power plants for the generation of renewable energy.

Why does the CO₂-balance in the production phase differ between the upper and lower bars?

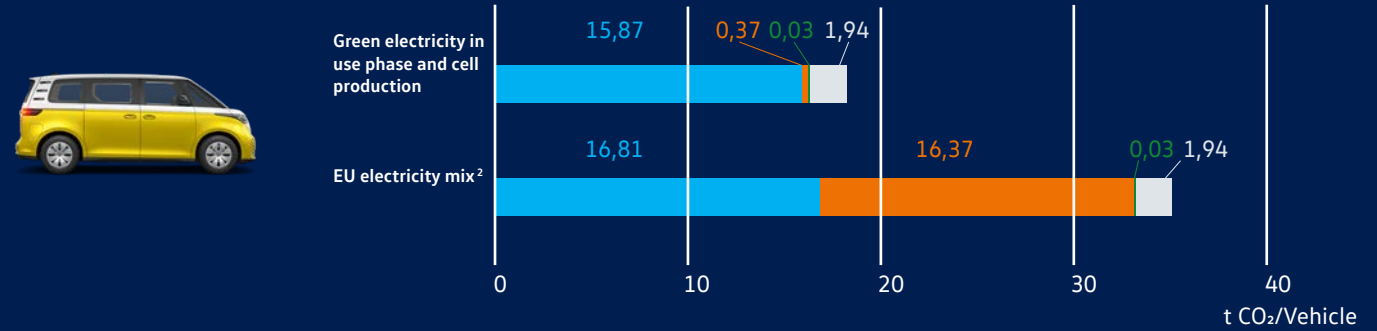
The upper bar takes into account the reduction of CO₂-emissions due to the use of green electricity in cell production.



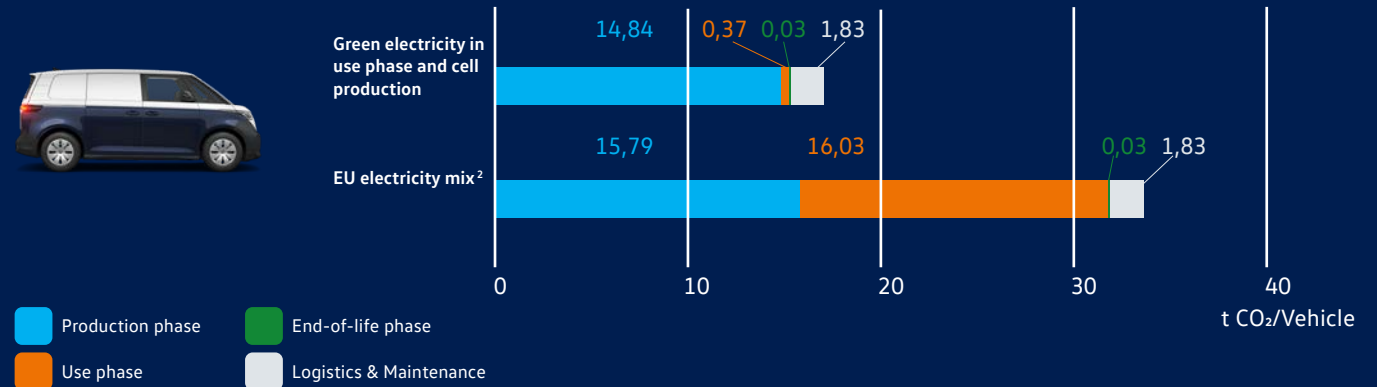
The CO₂-balance in the **use phase** is significantly influenced by the person in charge of the charging: The higher the proportion of green electricity used for charging, the lower is the CO₂-balance of the charged electricity. Find out more on page 7.



Complete CO₂-emissions by life cycle phase: ID. Buzz 150 kW 82 kWh (gross) (model year 2023)¹



Complete CO₂-emissions by life cycle phase without considering offsets: ID. Buzz Cargo 150 kW 82 kWh (gross) (model year 2023)¹



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Vehicle images show optional equipment.

¹ The CO₂-balance shown here is the result of a life cycle assessment analysis of the ID. Buzz and ID. Buzz Cargo. This analysis was audited and certified by TÜV Nord in Germany on 16th May 2022.

² Reference year 2017



Production phase

Use phase

End-of-life phase

Producing the high-voltage battery

The high-voltage battery represents a key component of the ID. Buzz. The use of high-voltage batteries often raises questions about raw material sourcing and CO₂-emissions in the production phase.

Ensuring responsible raw material sourcing for the high-voltage battery

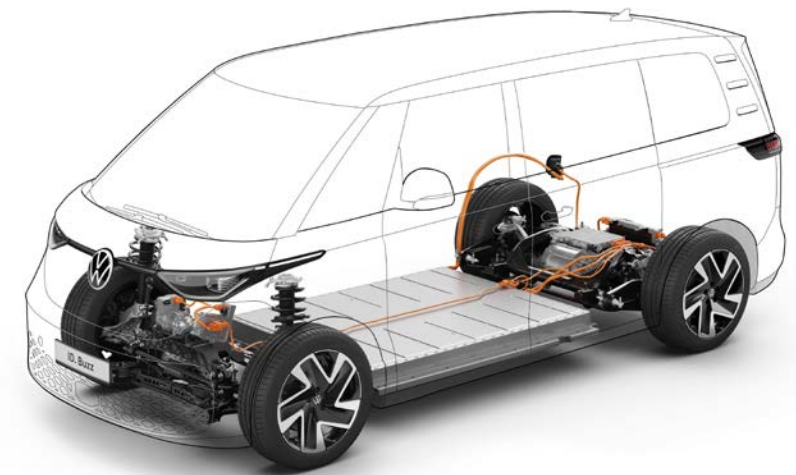
The goal of Volkswagen Group's procurement is to identify and effectively address sustainability risks in the supply chains for all relevant products. The implemented Responsible Supply Chain System (ReSC) aims to proactively avoid or minimise social or environmental risks and corruption along the Volkswagen Group's supply chain based on a systematic risk analysis. It helps to eliminate violations and continuously improve the sustainability performance of suppliers. For direct business

relationships, the Sustainability Rating – known as the "S-Rating" – was introduced as a key measure from 2019 onwards. This S-Rating is used to assess the sustainability performance of the relevant suppliers and to reveal opportunities for continuous improvement. A management system for 16 priority raw materials was implemented in 2021 to identify, assess and reduce sustainability risks in upstream supply chains. As part of this, Volkswagen Group Procurement is working with battery

suppliers in the battery supply chain to carry out mappings and audits based on the OECD Guideline. Volkswagen Group Procurement is supported by an external service provider validated by the "Responsible Minerals Initiative". In 2022, the Volkswagen Group joined the "Initiative for Responsible Mining Assurance" with the intention of introducing the initiative's standards in the battery supply chain. The Volkswagen Group is also committed to improving working and living conditions in small-scale mining of cobalt in the Democratic Republic of Congo as part of the "Cobalt for Development" project. This project is a corporate initiative implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.



More information on responsible raw materials sourcing can be found [here](#).



CO₂-balance of the production phase

- The CO₂-balance of an electric vehicle is significantly influenced by the high-voltage battery, which accounts for around 40 percent of the total CO₂-balance. This is due to the energy-intensity when manufacturing the battery from raw materials.
- Volkswagen Commercial Vehicles ensures that battery cell production for the ID. Buzz and ID. Buzz Cargo uses green electricity. This helps to reduce the CO₂-balance of the ID. Buzz and ID. Buzz Cargo by about one ton of CO₂ compared to battery cell production using the EU electricity mix.
- By using additional sustainable components, it will be possible to further improve the CO₂-balance of the ID. models in the coming years.

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Production phase

Use phase

End-of-life phase

Sustainable materials

The ID. Buzz offers sustainable features such as the sustainable materials with a high recycled content. The use of recycled materials is path-breaking and ensures that fewer virgin raw materials need to be consumed. Overall, the ID. Buzz consists of approximately 25 percent recycled materials (metals and plastics) such as seat covers with yarn made from PET bottles and marine plastics.

Learn more:

[ID-Buzz-sustainable-with-plenty-of-attention-to-detail \(www.volkswagen-newsroom.com\)](https://www.volkswagen-newsroom.com)



 Use of recycled materials

Seat covers and floor mats made from recycled materials

Recycled materials are used for **some seat covers, floor mats** and the **decorative headliner** of the ID. Buzz. For example, there is a fabric made from SEAQUAL™ yarn, whose threads are made from about 10 percent collected marine plastics and about 90 percent recycled PET bottles. In an ID. Buzz with five seats, 63 half-litre PET bottles receive a

second life. Also, the Group's first "Art-Velours ECO" seat cover in the ID. Buzz consists of 71 percent recycled material.

The top layer of the **floor mats** is also made of a velour, which is made from 100 percent recycled PET bottles.

Bags in the ID. Buzz Cargo

Four optional bags are attached to the side panel trim. The bags are made from 100 percent recycled PET bottles. The origin of the material is certified by the manufacturer and indicated on the bags.



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Green electricity for the use phase

Volkswagen also takes on responsibility for the availability of additional green electricity. Drivers are advised to charge the ID. models using green electricity whenever possible. This is relevant for various different charging scenarios in which solutions are already available. There is for example, Volkswagen Naturstrom^{®1}, which is certified by TÜV Nord in Germany, available from the Group subsidiary Elli and which delivers green electricity right to the home charging station.

Green electricity at home

The ID. Buzz can be charged at home with electricity from the building's own photovoltaic system or with green electricity from an energy provider. In many European countries, Volkswagen dealers refer to respective local offers. In Germany, Elli supplies electricity from 100 percent renewable energies to Volkswagen Naturstrom customers. The Volkswagen Naturstrom¹ Connect tariff provides monetary incentives to charge when there is a particularly large amount of green electricity in the grid. This green electricity can be charged for example by use of the wallbox ID. Charger¹.

How to get Volkswagen Naturstrom: [Volkswagen Naturstrom \(elli.eco\)](#)

Green electricity for charging at public spaces

With Volkswagen's charging service We Charge¹, customers can access green electricity from various providers while on the road. For example, IONITY is a provider of high-power charging (DC charging at 150 kW or more) in public space and offers only green electricity in Germany. IONITY builds, operates and continuously expands its own charging network, consisting of charging parks with multiple charging stations along highways in 24 European countries.

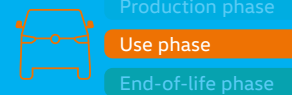
Your route to We Charge: [Ladelösungen | Volkswagen Nutzfahrzeuge \(volkswagen-nutzfahrzeuge.de\)](#)

Projects to expand renewable energy use

Green power is not always available wherever you go. We assume that 60 percent of charging power demand is already covered by renewable energies. To ensure that additional wind energy and solar power capacity receives financing, Volkswagen Commercial Vehicles is working on specific projects with the energy industry, and is supporting projects to generate additional green electricity. This includes, among other projects, two photovoltaic plants in the Spanish city of Tordesillas, with a total annual capacity of around 74 million kilowatt hours. Not far from Valladolid in the Castile and León region, a total of 100,000 modules are turning sunlight into power on a site covering more than 18 hectares.

¹ Volkswagen Naturstrom[®] is a proprietary brand of VW AG. A service provided by Volkswagen Group Charging GmbH.

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Did you know?

- An air duct in front of the front wheels and a closed underbody **optimise the aerodynamics** of the ID. Buzz.
- The use of **allergen filters with activated charcoal** in air conditioning units of the ID. Buzz ensures good air in the vehicle interior. A special feature is a polyphenol coating, which is an anti-inflammatory natural product found in many plants.
- Due to the electric drive in the ID. Buzz, **exterior noise and interior noise are significantly lower than with a normal combustion engine**. As a result, people outside the vehicle generally only hear the rolling noise of the tires besides wind noise and the legally required minimum noise for electric vehicles, which is generated by a sound generator. These minimum noises are required by law to warn other road users when the vehicle is moving.

Vehicle images show optional equipment.

Recyclability of the ID. Buzz

including the high-voltage battery

The end-of-life phase that follows a long period of use was regarded during the development of the ID. Buzz, too. One focus area is the recycling of the high-voltage battery. Sustainable handling of the high-voltage battery is ensured above all by three cornerstones: firstly, servicing – should a defect occur during the use phase –, secondly, applications during the battery's "second life" and finally, responsible recycling.

Refined repair concept for high-voltage battery

The high-voltage battery in the ID. Buzz has been developed for a long service life. However, if despite this a technical defect should occur in a component, it is not necessary to replace the entire high-voltage battery. In this case, the repair concept allows the battery to be repaired at a qualified service partner. This saves resources.

The "second life" of the high-voltage battery

After high-voltage batteries have been deployed in electric vehicles like the ID. Buzz, their residual capacity is regularly more than sufficient for other applications. High-voltage batteries can receive a "second life" – as battery storage for regenerative energy or as part of larger battery storage systems for industrial purposes. This means that high-voltage batteries from electric vehicles like the ID. Buzz are only recycled after several years of use in their second life.

Recyclability of the high-voltage battery – Salzgitter pilot plant

High-voltage batteries such as those in the ID. Buzz contain many raw materials that can be recycled and used in new battery modules. Recycling raw materials reduces the potentially negative environmental impact of additional raw material mining and enables the gradual development of a circular economy. Building a circular economy also has positive effects from a societal point of view if it leads to a transparent supply chain. Volkswagen Group Components is working on precisely these issues related to battery recycling. Already today, large quantities of the raw materials used in high-voltage batteries can be recovered at the Salzgitter pilot recycling plant.

Recycling in vehicle construction

Material cycles should be self-contained and the raw materials used should be reused in new products once the ID. Buzz reaches the end of its useful life. For this reason, care was taken during development of the ID. Buzz to select materials that can be recycled and to design the vehicle in such a way that it can be dismantled easily.

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Production phase

Use phase

End-of-life phase



Further information:

Service | Volkswagen Commercial Vehicles:
volkswagen-nutzfahrzeuge.de

Frequently asked questions and answers

This page contains answers to a number of questions on the sustainability of the ID. Buzz and ID. Buzz Cargo.



Production phase

How much CO₂ is emitted during the production and delivery phases of the ID. Buzz and ID. Buzz Cargo?

Currently, about 16.7 t (ID. Buzz Cargo) and 17.8 t (ID. Buzz) of CO₂ are generated respectively. This takes into account the supply chain, manufacturing, logistics and initial charging of the battery before the vehicle is handed over to customers.



Use phase

How much CO₂ is emitted when using the ID. Buzz and ID. Buzz Cargo?

How much CO₂ is emitted when using electric vehicles depends largely on how users charge their vehicles. Namely, it is critical whether an electric vehicle is charged with green electricity or an electricity mix of renewable and fossil energies. If the vehicle is charged exclusively with green electricity, almost no CO₂-emissions are generated. This holds true for the ID. Buzz and ID. Buzz Cargo, too. Furthermore, Volkswagen cooperates specifically with the energy industry to promote projects that generate additional green electricity.



Production phase

How are human rights respected in the production of the ID. Buzz and ID. Buzz Cargo?

Several materials used in high-voltage battery are currently regarded as high-risk raw materials. Volkswagen takes its responsibility very seriously and has established appropriate processes and management systems to respect human rights along the supply chain. To this end, a raw material management system has been introduced for example. This management system helps to avoid potential risks in a consistent manner and to prevent violations of human rights.



End-of-life phase

Can the ID. Buzz and ID. Buzz Cargo be recycled?

The Volkswagen Group pursues the vision of an integrated circular economy. Therefore, when developing new vehicles, Volkswagen pays attention to recyclability. High recycling rates can also already be achieved for high-voltage batteries at the pilot recycling plant in Salzgitter, Germany.



Production phase

Which sustainable materials are used in the ID. Buzz and ID. Buzz Cargo?

The ID. Buzz and the ID. Buzz Cargo feature many material highlights with a high recycled content. This means that fewer new raw materials need to be used. For example, the material for some seat covers is made from 90 percent PET bottles and 10 percent marine plastics.

Definitions

This page explains various terms relevant to this brochure and summarizes key objectives of the Volkswagen "Way to Zero" strategy.

CO₂

CO₂ is the abbreviation for the greenhouse gas carbon dioxide. In this brochure, the abbreviation CO₂ is used as a proxy for all greenhouse gases. The life cycle assessment on page 6 includes all greenhouse gases; these are expressed as CO₂-equivalents (CO₂e).

DC-charging

The abbreviation "DC" stands for "direct current". Hence, the ID. Buzz draws direct current in DC charging. DC charging equates fast charging at over 22 kW, for example at a public charging station. In contrast, the abbreviation "AC" stands for "alternating current". During AC charging, the ID. Buzz draws alternating current. AC charging equates slower charging at up to 11 kW for the ID. Buzz, for example at a wallbox at home.

Green electricity

Green electricity is electricity from renewable sources, for example wind power and solar energy.

High Power Charging

High-power charging represents charging processes at a minimum of 150 kW for example at a charging station on the highway.

Life cycle assessment

To enable a carbon-optimised production phase, our experts have to precisely identify how much CO₂ is emitted. The emitted CO₂ can be identified by life cycle assessment. Experts use this ISO-standardised method to analyse each individual component and ascertain the effect that a vehicle has on the environment over the course of its

entire life cycle – from raw material extraction, to manufacturing, assembly and the use phase of the vehicle, through to recycling of the materials (end-of-life phase). Several impact categories are examined. One of these is CO₂-emissions and a very small proportion of other gases which are converted into so-called CO₂-equivalents. This measurement unit makes it possible to compare the effect of all greenhouse gases on the climate. For each processing step of a component, emissions are determined using special software based on standardised average values. When it comes to manufacturing steps that are particularly energy-intensive, such as battery cell production, we use specific data provided by our respective supplier, instead of mean values. This procedure is also identified as a specific life cycle assessment. This shows exactly which impact the measures implemented have – and how much CO₂ actually must be offset. The results of the life cycle assessment are verified and certified by an independent body.

Recycled materials (also recycles)

Recycled materials are reprocessed used materials from industrial and consumer waste that are reused in new products. In the case of plastics, these include PET bottles or old fishing nets. This plastic waste is processed into granules in several process steps and can then be fed into the plastics manufacturing process. Depending on the given requirements for a component, small proportions of recycled materials in a component are possible, up to components made entirely from recycled materials.

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The Volkswagen „Way to Zero“

A holistic approach to climate-conscious mobility

We take responsibility for our share in the value chain of our vehicles. That is why we are committed to complying with the Paris Climate Agreement – with the goal of becoming a **company with a net carbon-neutral balance** by 2050. To drive the decarbonisation required to meet our goals, we will follow a new path.

- By 2030, we will reduce the CO₂-footprint over the life cycle of a vehicle in Europe by **40 percent** compared to 2018.
- From 2030, **more than 55 percent** of Volkswagen Commercial Vehicles will be battery electric vehicles, which will be powered by **100 percent** green electricity.
- The Volkswagen Group plans to reuse approximately **97 percent** of raw materials from battery recycling in the long-term.
- The Volkswagen Group supports the development of renewable energy plants, so that by 2025 all projects should generate a total of around **7 terawatt** hours of additional green electricity.

ZERO
Volkswagen way to 

Imprint

Volkswagen AG is a public limited company under German law (Aktiengesellschaft) headquartered in Wolfsburg, Germany.

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Volkswagen AG is entered in the Register of Companies at the District Court of Braunschweig under number HRB 100484. The VAT ID number of Volkswagen AG is DE 115235681.

The following information on consumer arbitration and online dispute resolution only apply to consumers who are resident in the European Union and do not affect statutory dispute resolution regulations which may be in place in countries outside the European Union. Volkswagen is neither willing nor obliged to take part in a dispute resolution procedure before a consumer arbitration board.

The European Commission provides a platform for out-of-court online dispute resolution, which can be found at www.ec.europa.eu/consumers/odr. On this platform, consumers will find a list of consumer arbitration boards which can assist with out-of-court dispute resolution.

The stated consumption and emission values were determined according to the legally prescribed measurement procedures. On 1 January 2022, the WLTP test cycle completely replaced the NEDC test cycle, so that no NEDC values are available for vehicles newly type-approved after this date. The data does not refer to an individual vehicle and is not part of the offer, but serves solely for comparison purposes between the different vehicle types. Additional equipment and accessories (add-on parts, tyre format, etc.) can change relevant vehicle parameters such as weight, rolling resistance and aerodynamics and, in addition to weather

and traffic conditions as well as individual driving behaviour, can influence a vehicle's fuel consumption, electricity consumption, CO₂ emissions and driving performance values. Due to the more realistic test conditions, the fuel consumption and CO₂ emission values measured according to the WLTP are in many cases higher than those measured according to the NEDC. This may result in corresponding changes in vehicle taxation since 1 September 2018. Further information on the differences between WLTP and NEDC can be found at <http://www.volkswagen.de/wltp>.

Further information on the official fuel consumption and the official specific CO₂ emissions of new passenger cars can be found in the "Guide to fuel consumption, CO₂ emissions and electricity consumption of new passenger cars", which is available at all sales outlets and from DAT Deutsche Automobil Treuhand GmbH, Hellmuth-Hirth-Str. 1, D-73760 Ostfildern or at www.dat.de/co2.

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