Audi Q6
55 e-tron quattro*
The life cycle assessment

Image shows vehicle from the production year 2024 with optional equipment

* Audi Q6 55 e-tron quattro: combined electric power consumption: 19.6 – 17.0 kWh/100 km; combined CO_2-emissions: 0 g/km; CO_2 Class: A

Life cycle assessment
Audi Q6 55 e-tron quattro*

AUDI AG prepares a detailed life cycle assessment for new vehicle models at the start of production.
In the following, the Audi Q6 55 e-tron quattro* with the German standard equipment without additional optional equipment is considered.

The methodology

The life cycle assessment (LCA) analyzes the environmental impact of a product throughout its life cycle (cradle-to-grave, see Figure 1). In a life cycle assessment for an AUDI AG vehicle, this is broken down into the following phases:

• **Production:**
Manufacture of the components (from the raw material to the finished component) and production of the vehicle model.

• **Usage:**
Use of a vehicle model based on a predefined driving profile (WLTP) with a mileage of 200,000 km including upstream processes from the fuel or energy supply.

• **Recycling** at the end of the product life.

In this life cycle assessment, the ecological impact categories of greenhouse potential, ozone formation potential, acidification potential, and eutrophication potential are quantitatively assessed. Further explanations can be found below.

When preparing the life cycle assessment, AUDI AG follows the procedure standardized in the international series of standards ISO 14040 ff.

The following premises were used as a basis for preparing the life cycle assessment:

- Production year 2024, model year 2024
- Material data and component parts list of the examined vehicle model
- Combined energy consumption according to WLTP in 2024
- 200,000 km mileage in the use phase
- Testing and validation by independent experts (TÜV NORD CERT GmbH)

The life cycle assessment software “LCA for Experts” version 10.7.1.28 was used.

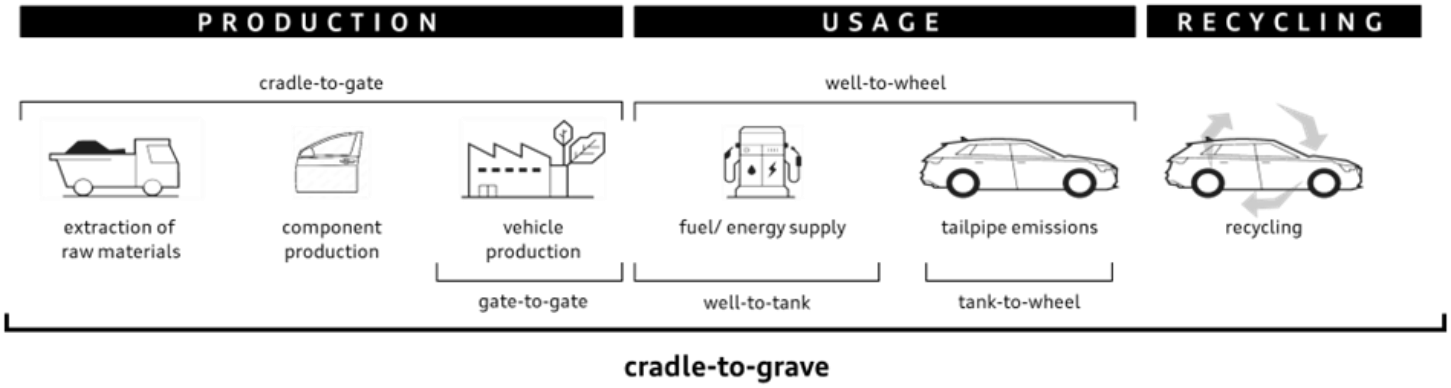

Figure 1: Scope of investigation of a life cycle assessment

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Life cycle assessment
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The results - global warming potential over the entire life cycle

The global warming potential (GWP) describes the emissions of greenhouse gases that lead to an increase in the heat absorption of solar radiation in the atmosphere and thus can contribute to an increase in the global average temperature. The reference substance for the global warming potential is carbon dioxide (CO_2), to which all other active substances (e.g. methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), volatile organic compounds (VOC)) are related (CO_2 equivalents - CO_2-eq.).

The Audi Q6 55 e-tron quattro* generates approximately 23.8 tons of CO_2-equivalent greenhouse gas emissions over its entire lifecycle, utilizing CO_2-reduced materials and renewable electricity in battery cell production and during the usage phase. Without the implemented reduction measures, the value would be 36.7 tons of CO_2-equivalent. During the manufacturing phase, the greenhouse gas emissions of the Audi Q6 55 e-tron quattro* are approximately 23.7 tons of CO_2-equivalent, which are reduced to 21.5 tons of CO_2-equivalent through CO_2-reducing measures, and logistics account for approximately 1.3 tons of CO_2-equivalent. The usage phase of the Audi Q6 55 e-tron quattro* accounts for approximately 11.1 tons of CO_2-equivalent in electricity provision with the EU electricity mix or 0.5 tons of CO_2-equivalent with green electricity (EU wind power), which corresponds to around 30 % or around 2 % of the total greenhouse gas emissions over the lifecycle. There are no driving emissions. Maintenance generates 0.6 tons of CO_2-equivalent. Disposal generates 0.02 tons of CO_2-equivalent.

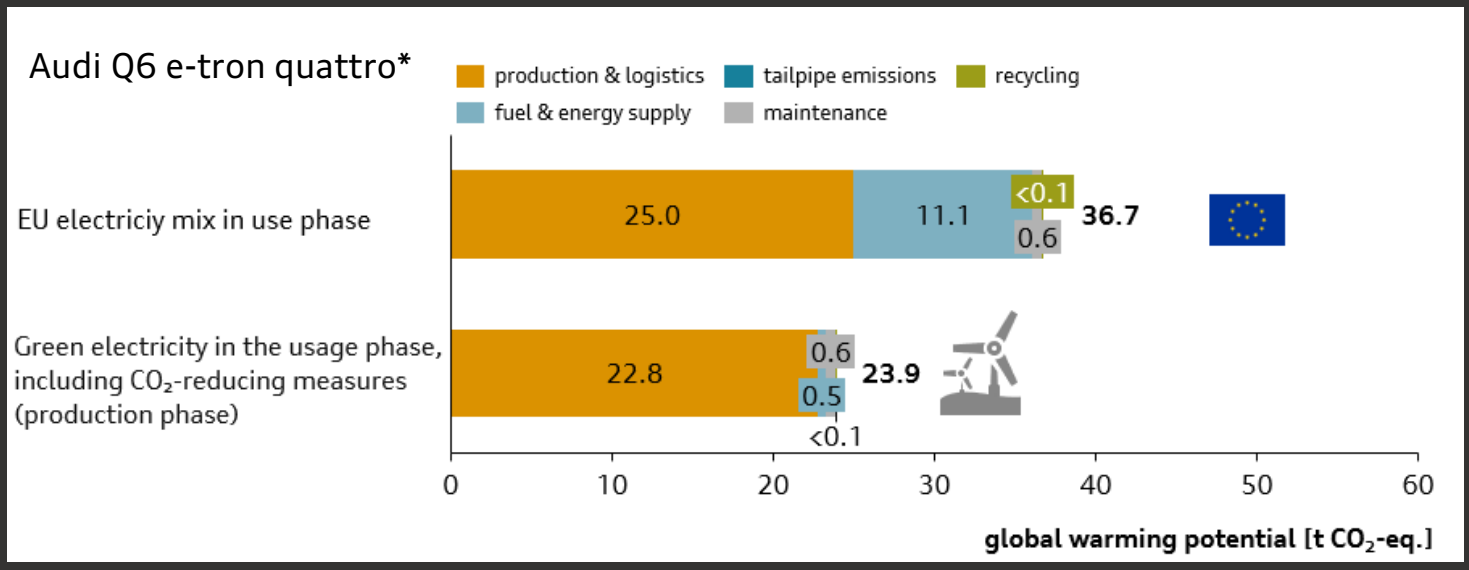

Figure 2: Global warming potential of the Audi Q6 55 e-tron quattro* over the entire life cycle

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Life cycle assessment
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The Results - Additional Impact Categories

In addition to the greenhouse potential, further impact categories were considered. The results for the entire lifecycle are listed in the table below:

	Baseline Value (EU electricity mix)	Green energy in the usage phase	Green energy in the usage phase and cell production	Green energy in the usage phase and cell production, as well as further CO_2 – reducing measures (production phase)
Greenhouse potential **GWP [t CO_2-eq.]**	36.7	26.1	24.4	23.8
Ozone formation potential **POCP [kg NO_x-eq.]**	59.8	47.9	45.3	Not evaluated
Acidification potential **AP [kg SO_2-eq.]**	213.0	191.2	186.9	Not evaluated
Eutrophication potential **EP [kg PO_4-eq.]**	10.9	8.3	7.8	Not evaluated

The photochemical ozone creation potential (POCP) describes the formation of photochemical oxidants, which can develop from hydrocarbons, carbon monoxide (CO), and nitrogen oxides (NO_x) under the influence of sunlight. These can impair human health, disrupt the function of ecosystems, and damage plants.

The acidification potential (AP) describes the effects of the emission of oxygen-forming substances such as SO_2 or NO_x. These substances have various impacts on soils, waters, ecosystems, biological organisms, and materials (e.g. buildings).

The eutrophication potential (EP) describes an excessive release of nutrients into waters and soils, leading to an undesirable shift in species composition. Additionally, eutrophication in waters leads to oxygen deficiency.

Conclusion

AUDI AG is aware of its responsibility towards the environment by putting vehicles on the market and is committed to the Paris Agreement on climate change. As part of this, AUDI AG is pursuing a consistent decarbonization strategy. The data basis for this is formed, among other things, by the life cycle assessments of the various vehicle models from Audi AG.

The life cycle assessment of the Audi Q6 55 e-tron quattro* was checked by the external expert TÜV NORD CERT GmbH. Evidence of the rule-compliant application of DIN EN ISO 14040 was provided and a declaration of validity was issued. Further information on sustainability at Audi AG can be found at Consistent and holistic: sustainability at Audi | audi.com

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TÜVNORD

CERTIFICATE OF VALIDITY

DIN EN ISO 14040:2021 / DIN EN ISO 14044:2021 (product-related life cycle assessment - LCA)

Evidence that the application conforms to the regulations was delivered, and is herewith certified according to the TÜV NORD CERT Prüf- und Umweltgutachtergesellschaft mbH - procedure for

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Range of application

Life Cycle Assessment „Audi Q6 55 e-tron 285kW / 100kWh - version dated 2024-04-23“

The requirements of the above-mentioned standards were evidently fulfilled by a critical review with regard to

- the scientifically justified and technically valid methods used in carrying out the LCA;
- the appropriateness of the data used in relation to the objective of the study;
- the consideration of the objective of the LCA and the identified limitations in the interpretations.

The LCA report (Ref: 35372780 is transparent and self-consistent.

This declaration of validity refers exclusively to the functional unit at point in time of the LCA report.

Report No. 3537 2780

TÜV NORD CERT Prüf- und Umweltgutachtergesellschaft mbH Hannover, 2024-05-14

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