

Audi Q4 40 e-tron*

The life cycle assessment



Image shows vehicle from the production year 2021 with optional equipment

* Audi Q4 40 e-tron: combined electric power consumption in kWh/100 km: 19.5 – 16.6; combined CO₂-emissions in g/km: 0, CO₂ class: A

Life cycle assessment

Audi Q4 40 e-tron*

AUDI AG prepares a detailed life cycle assessment for new vehicle models at the start of production.

In the following, the Audi Q4 40 e-tron* 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.

Within the life cycle assessment on hand, only the ecological impact category of greenhouse gas potential is 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 2021, model year 2022
- Material data and component parts list of the examined vehicle model
- Combined energy consumption according to WLTP in 2021
- 200,000 km mileage in the use phase
- Testing and validation by independent experts (TÜV NORD CERT GmbH)

The life cycle assessment software GaBi version 9.5.2.49 was used.

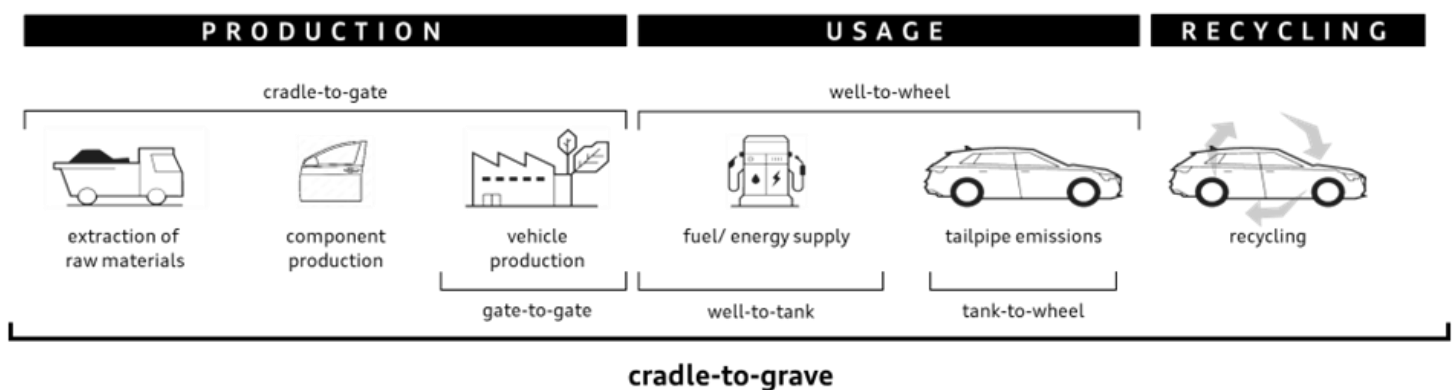


Figure 1: Scope of investigation of a life cycle assessment

* Audi Q4 40 e-tron: combined electric power consumption in kWh/100 km: 19.5 – 16.6; combined CO₂-emissions in g/km: 0, CO₂ class: A

Life cycle assessment Audi Q4 40 e-tron*

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 (CO₂), to which all other active substances (e.g. methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), volatile organic compounds (VOC)) are related (CO₂ equivalents - CO₂-eq.).

The Audi Q4 40 e-tron* causes approx. 31.8 t CO₂-eq. greenhouse gas emissions over its entire life cycle using the EU electricity mix (see figure 2). When using electricity from wind power, the greenhouse gas emissions are 17.5 t CO₂-eq. In the production phase, the greenhouse gas emissions of the Audi Q4 40 e-tron* are around 15.8 t CO₂-eq. and 0.9 t CO₂-eq. are generated in logistics. The use phase of the Audi Q4 40 e-tron* accounts for approx. 14.6 t CO₂-eq. in the electricity supply with EU electricity mix or 0.3 t CO₂-eq. with green electricity, which corresponds to almost 45 % or almost 2 % of the total greenhouse gas emissions over the life cycle. There are no tailpipe emissions. The maintenance generates 0.5 t CO₂-eq. 0.03 t of CO₂-eq. are generated during recycling.

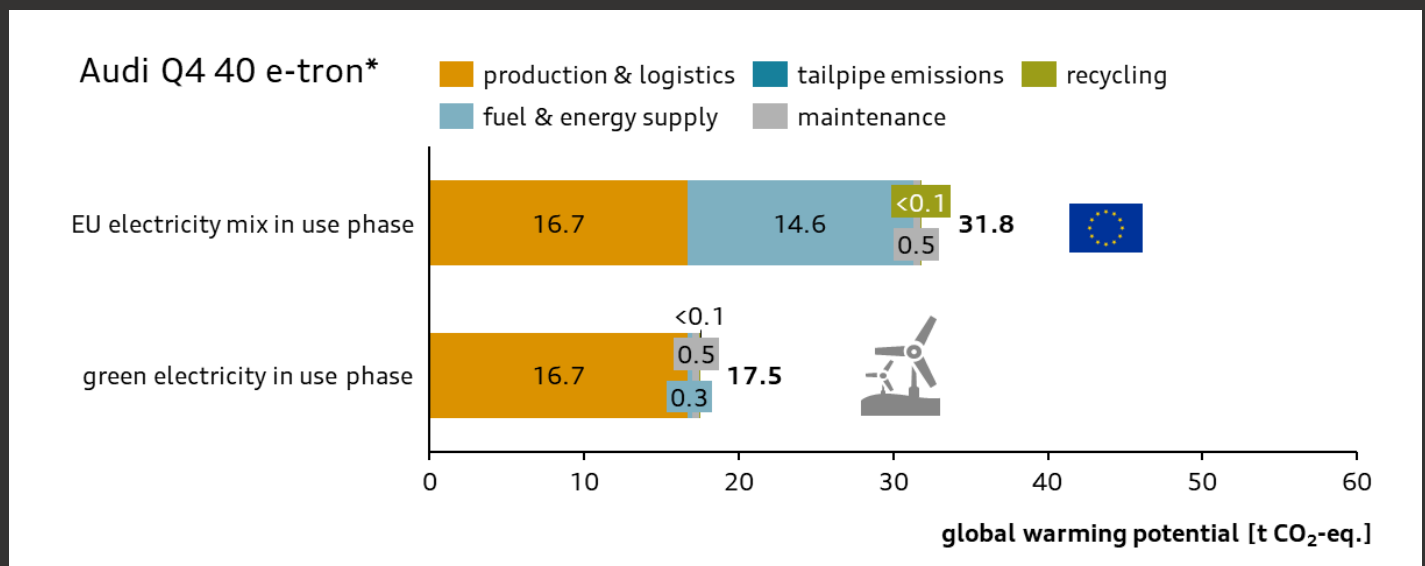


Figure 2: Global warming potential of the Audi Q4 40 e-tron* over the entire life cycle

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 Q4 40 e-tron* 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](https://www.audi.com/sustainability).

* Audi Q4 40 e-tron: combined electric power consumption in kWh/100 km: 19.5 – 16.6; combined CO₂-emissions in g/km: 0, CO₂ class: A

GÜLTIGKEITSERKLÄRUNG

DIN EN ISO 14040:2021 / DIN EN ISO 14044:2021 (Produkt-Ökobilanz)

Der Nachweis der regelwerkskonformen Anwendung wurde erbracht und wird gemäß Verfahren der TÜV NORD CERT Umweltgutachter GmbH bescheinigt für

Audi AG
Auto-Union Straße 1
85057 Ingolstadt
Deutschland

Geltungsbereich

Umweltbilanz „Audi A3 (PHEV)“, „Audi A6 (TFSI)“, „Audi Q2 (TFSI und TDI)“, „Audi Q4 (e-tron)“ und „Audi e-tron GT“.

Die Anforderungen der genannten Normen wurden nachweislich erfüllt durch eine kritische Prüfung hinsichtlich

- der bei Durchführung der Umweltbilanz angewendeten wissenschaftlich begründeten und technisch gültigen Methoden;
- der Zweckmäßigkeit der verwendeten Daten in Bezug auf das Ziel der Studie;
- der Berücksichtigung des Zieles der Umweltbilanz und der erkannten Einschränkungen in den Auswertungen.

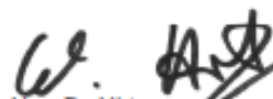
Die Berichte zur Umweltbilanz (Az: 35297115_1-5) sind transparent und in sich stimmig.

Diese Gültigkeitserklärung bezieht sich ausschließlich auf die funktionelle Einheit zum Zeitpunkt der Berichte zur Umweltbilanz.

Berichts-Nr. 3529 7115

TÜV NORD CERT UMWELTGUTACHTER GmbH

Hannover, 2021-10-19



Herr Dr. Hirtz
Umweltgutachter