

Audi A3 Sportback 30 TDI*

The life cycle assessment



Image shows vehicle from the production year 2020 with optional equipment

* Audi A3 Sportback 30 TDI, 6-speed manual transmission, 85 kW: combined fuel consumption: 4.8 – 4.4 l/100 km; combined CO₂-emissions: 126 – 114 g/km; CO₂ Class: D-C

Life cycle assessment

Audi A3 Sportback 30 TDI*

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

In the following, the Audi A3 Sportback 30 TDI* 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 2019, model year 2021
- Material data and component parts list of the examined vehicle model
- Combined fuel consumption according to WLTP in 2019
- 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 9.2.0.58 was used.

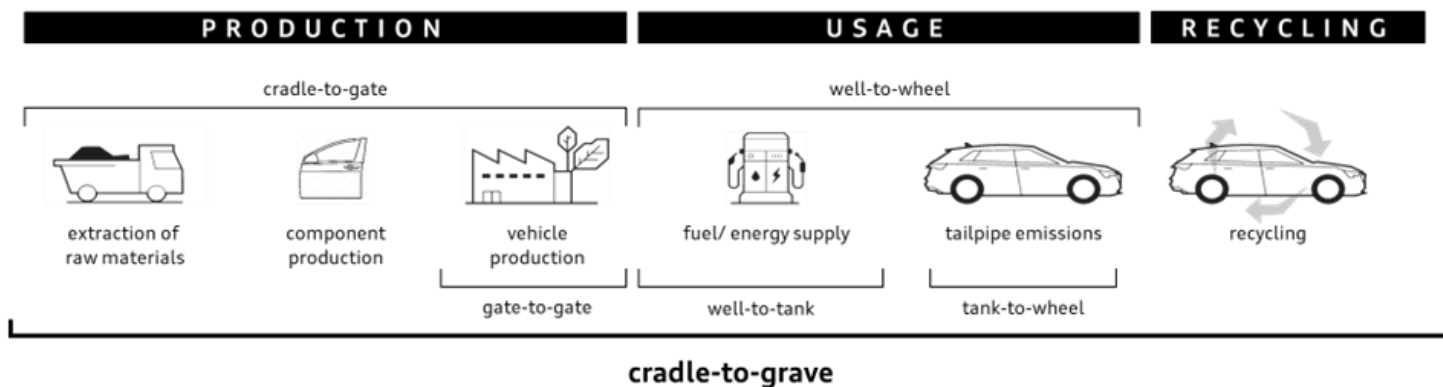


Figure 1: Scope of investigation of a life cycle assessment

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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 (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 A3 Sportback 30 TDI* causes approx. 32.0 t CO₂-eq. greenhouse gas emissions over its entire life cycle. In the production phase, the greenhouse gas emissions of the Audi A3 Sportback 30 TDI* are around 6.2 t CO₂-eq. and 0.8 t CO₂-eq. are generated in logistics. The use phase of the Audi A3 Sportback 30 TDI* accounts for approx. 24.6 t CO₂-eq., which corresponds to almost 80 % of the total greenhouse gas emissions over the life cycle. This is divided into 2.4 t CO₂-eq. in the fuel provision and 22.2 t CO₂-eq. as driving emissions. The maintenance generates 0.3 t CO₂-eq.. 0.03 t of CO₂-eq. are generated during recycling.

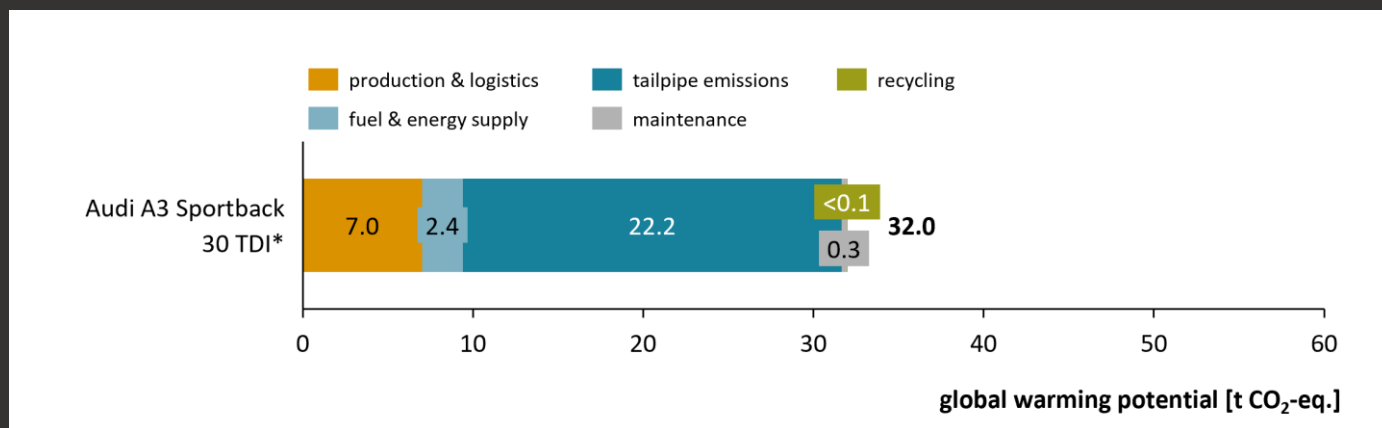


Figure 2: Global warming potential of the Audi A3 Sportback 30 TDI* over the entire life cycle

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 A3 Sportback 30 TDI* 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/en/consistency).

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GÜLTIGKEITSERKLÄRUNG

DIN EN ISO 14040 : 2009 / 14044 : 2018

(Produkt-Ökobilanz)

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

Audi AG
Ettingerstraße
85045 Ingolstadt
Deutschland

Geltungsbereich

Umweltbilanz „Audi A3 TDI“

Die Forderungen werden erfüllt, nachgewiesen durch eine kritische Prüfung hinsichtlich

- ordnungsgemäßer Methodologien
- repräsentativer Bilanzierungs- und Wirkungskategorien
- durchgängiger Transparenz und Konsistenz

Auditbericht-Nr. 3528 2764

Zertifizierungsstelle der TÜV NORD CERT GmbH

Essen, 2021-01-31



Dr. Winfried Hinz
Umweltgutachter