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## Ecobalance

Audi creates an ecobalance for each new model that evaluates all phases of its lifecycle. The brand's lightweight and efficient models are particularly effective during the operating phase – thanks to know-how in ultra-lightweight design and drive technology. Ecobalance, also known as life cycle analysis or life cycle assessment (LCA), analyzes the environmental impact of a product throughout its entire lifecycle. It serves as a quantitative evaluation of ecological aspects such as the emission of greenhouse gases (including CO<sub>2</sub>)\*\*, energy consumption, acidification or summer smog. In compiling ecobalances, Audi uses a standardized procedure in accordance with ISO 14040.

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The public currently judges cars very heavily on the basis of their fuel consumption. Audi is looking further and not limiting itself to the CO<sub>2</sub> emissions that escape from the exhaust while driving.\*\* It is now focused far more on all aspects – where raw materials come from, the production of individual components and how they are put together, the energy flow in production facilities, the operational phase and recycling.

Audi pays strict attention to sustainability in its production activities. Large areas of factory roof are equipped with photovoltaic installations. A wide assortment of efficiency and energy recovery technologies are in operation at the Ingolstadt and Neckarsulm plants, with both factories making extensive use of district heating. The car transportation trains traveling to the container port of Emden run on sustainably produced electricity and the company's recycling has been exemplary for many years – every Audi is up to 95-percent recyclable.

A vehicle's usage phase plays a major role in its ecobalance, contributing around 80 percent of overall emissions. This is where Audi's strengths come into their own – ultra-lightweight design, efficient drives and, in future, renewable energy sources like the ones generated by the Audi e-gas project. Depending on the engine version, the new Audi A3 is up to 80 kilograms lighter than the previous model and greenhouse gas emissions are down by up to nine percent (in the 1.4 TFSI).

The Audi A6 has also lost up to 80 kilograms – its bodyshell consists of more than 20 percent aluminum. Initial production of the lightweight material requires more energy than sheet steel. However, the lower fuel consumption more than compensates for this after just a few short journeys. For the A6 3.0 TDI quattro with S tronic, overall greenhouse gas emissions are down by 13 percent, equating to seven tonnes less CO<sub>2</sub>\*\*.

At the end of the vehicle life, the aluminum components can be recycled with very little energy and without any loss in quality. The ASF (Audi Space Frame) bodyshell of the A8



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already comprises 38 percent secondary aluminum – a prime example of environmentally conscious lightweight design Audi-style. Monolithic bodyshells made from carbon-fiber reinforced polymer (CFRP) have a far poorer energy balance.

\*\*Figures depend on the tires/wheels used.

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