German Environment Agency

19. November 2025

AutoRess Factsheet 4: Economic measures to reduce raw material requirements in passenger car transport

Results from the project 'Resource efficient and circular electric cars' (AutoRess) – FKZ 3722 57 101 0

Key findings

The AutoRess project examined various economic measures to reduce raw material demand in the automotive sector in Germany. The following measures have proven to be effective:

- Bonus-malus system based on vehicle size
- Taxation of company cars
- Environmental bonus in motor vehicle insurance
- EPR system to finance the proper treatment of end-of-life vehicles

Levers for reducing raw material requirements and greenhouse gas emissions

The modeling of resource use and greenhouse gas emissions in the automotive industry carried out in the "AutoRess" project identified three levers that have a particularly strong impact on the targets:

- Reduction in vehicle and battery size
- Extension of service life
- Increased amount of recycled materials

Savings through a shift to public transport or non-motorized modes of transport (e.g., bicycles) were not examined in the AutoRess project.

Economic measures

Bonus-malus system based on vehicle size

In a bonus-malus system, buyers of smaller cars receive a bonus, while buyers of larger cars pay a malus that also increases with size. One-time payments when purchasing a car have a greater effect than annual vehicle taxes. The proposed bonus values are less than 2.39 m in length and 1.32 m in width for a battery electric vehicle for urban traffic and less than 4.5 m in length and 1.85 m in width for interurban traffic for a family with luggage.

Taxation of company cars

An estimated 20 to 25% of new registrations in Germany are company cars that are also used privately (Blanck and Zimmermann 2021)1. The reason for the attractiveness of the car as a salary component is low taxation: for employees, the taxable monetary benefit is significantly cheaper than the cost of a privately purchased car. Companies can deduct the purchase of cars for business purposes as operating expenses without a maximum price limit and regardless of the vehicles' CO2 emissions. Here is the proposal from AutoRess: resource-efficient electric cars, e.g., those with small dimensions, should be taxed less than other vehicles.

Environmental bonus in motor vehicle insurance

With regard to the CO_2 emissions of a car, many motor insurance companies now offer environmental discounts when insuring an environmentally friendly vehicle. One example from Germany is R+V: Environmental bonus: 10% discount on the insurance premium for electric and hybrid cars and 5% for cars with low CO_2 emissions (up to 95 g/km). Further environmental discounts of this kind may be introduced in the near future.

EPR system to finance the proper treatment of end-of-life vehicles

In order to ensure adequate financing of the prescribed end-of-life vehicle treatment and to offer recycling companies incentives to improve quality, an EPR system is being introduced in which vehicle manufacturers are made responsible for financing end-of-life vehicle treatment in accordance with Extended Producer Responsibility (EPR).

[1] Blanck, R.; Zimmer, W. (2021): Klimaschutzinstrumente im Verkehr. Umgestaltung der Kfz Steuer Bonus Malus System. Umweltbundesamt (Hrsg.). S. 8. https://www.umweltbundesamt.de/sites/default/files/medien/366/dokumente/uba-kurzpapier_bonus-malus-system_kliv.pdf

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Project long title: Motor vehicles in support of sustainable resource use and circularity: Instruments and measures to reduce the demand for raw materials in the transport sector through circular economy in parallel with an energy transition in transport

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