German Environment Agency

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AutoRess Fact Sheet 11: Public procurement of resource-efficient vehicles

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

Key findings

- Smaller vehicles with smaller engines require fewer raw materials to manufacture and also tend to consume less energy during operation.
- The **shift to electric cars** is an important measure for reducing greenhouse gas emissions. At the same time, the size of the batteries has a significant impact on emissions and, above all, on the raw material requirements in vehicle manufacturing. **Avoiding oversized battery capacities** for the planned use of vehicles in the fleet therefore also offers significant potential for conserving resources.
- Resource-saving criteria can be included in the performance specifications. These include, for example, **upper limits for energy consumption** and the **longest** possible **warranty for battery life,** as well as the **provision of spare parts and software updates**.

With around €500 billion per year (approx. 13% of GDP)[1], the public sector is the largest purchaser in Germany. This volume of orders gives rise to a special responsibility for resource-efficient procurement. The direct share of public procurement in the total passenger car market is small, at around 20,000 vehicles per year[2], with a total of just under 3 million new passenger cars sold annually. However, the public sector serves as a role model for companies, which procure around two-thirds of all new passenger cars, and also for private individuals.

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



Increasing the amount of recycled content

Based on these three levers, AutoRess developed several criteria for the procurement of electric cars from a resource and greenhouse gas perspective:

[1] KNB (2025): The Competence Center for Sustainable Procurement. Last accessed: August 27, 2025

[2] KBA (2023): Annual special evaluation of the motor vehicle fleet and new registrations by the Federal Motor Transport Authority for TREMOD

GHG- and resource-efficient passenger car configurations in the AutoRess "public procurement" requirement level

Usage profile	Number of seats	Maximum dimensions (mm)	Load volume	Range (WLTP)[3]	Battery capacity (kWh)	Energy consumption (Wh/km)	Energy consumption (Wh/km)
1	2	2740 x 1480	0	200 km	18	90	105
2	5	4650 x 1900	Approx. 600 l	500 km	70	140	165
3	max. 9	5000 x 1980	approx. 1500 l	500 km	100	200	230
In all application profiles: - Availability of spare parts and software updates: 20 years - Battery life warranty: 20 years or 300,000 km at SOH 80%							

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

Challenges for public procurement

In public procurement, only a few vehicles are often purchased per tender. There are often only a few suppliers involved in the award process, as the effort involved is considerable in relation to the number of vehicles actually purchased. Vehicle classes are bundled together in tenders so that several bids can be obtained. If procurement is going well, there is usually a lot of communication with potential suppliers in advance.

What support do purchasers need?

Even with the availability of suitable evaluation criteria and tools for the (preliminary) selection of GHG- and resource-efficient car models, public procurement faces further challenges in the specific procurement process. Examples of this are:

- **Technical/practical requirements**: The design and equipment of the vehicles to be procured are based on the requirements of the user department. In some cases, these result from technical constraints, such as the ground clearance required for access to construction sites. In dialogue between the user department and the procurement department, possibilities should be explored to adapt vehicle size and equipment even more precisely and as resource-efficiently as possible to actual mobility needs.
- **Bureaucracy**: Procurement practice reports that few bids are received for vehicle tenders anyway. The formalism for bidders resulting from the various requirements of public procurement law is seen as an obstacle4. Additional requirements could therefore make the tender even less attractive for bidders. This hurdle could be overcome by including some resource-saving requirements as award criteria rather than minimum requirements.

[3] Worldwide Harmonized Light-Duty Vehicles Test Procedure

[4] See, for example, results from the project "Development of instruments for the environmentally friendly procurement of passenger cars by public authorities."

- **Binding nature**: In the case of requirements that are not formally prescribed, there is sometimes uncertainty among purchasers regarding their use. It is therefore essential to incorporate resource-saving requirements into federal and state procurement regulations.

The last point underscores the role of **regulatory requirements** in the form of specific procurement regulations. These should be easy for purchasers to adopt and should not restrict the range of products and services on offer too much, although the level of ambition should be commensurate with the exemplary role of the public sector. In the German federal system, it is important that the federal and state governments agree on standards as far as possible and disseminate examples of best practice. The harmonization of future specific procurement regulations for resource-efficient vehicles would bundle the influence of the public sector on the market and also counteract bureaucratic hurdles, as bidders would then be able to adapt to uniform requirements .

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