

Strategy for Sustainable Freight Transport (UBA-Texte 18/2009)

Avoidance, modal shift and technological improvements: Recommendations by the Federal Environment Agency for sustainable freight transport

The German Federal Government expects a 79 % increase in road freight transport performance between 2004 and 2025. Such a development would further increase CO₂ emissions, air pollution, noise nuisance, land-take and water pollution, and would compromise environmental protection requirements.

The Federal Government is aiming to reduce greenhouse gas emissions by 40 % by 2020 compared to 1990. According to findings by the Federal Environment Agency (Umweltbundesamt, UBA), the transport sector must contribute to this reduction by cutting 40 million tonnes of CO₂ compared to 2005 (direct emissions).

In addition, the Federal Government has set the following objectives in its sustainability strategy:

- A 5 % reduction in freight transport intensity by 2020 compared to the base year 1999 (status in 2006: +14 %)
- A rise in rail's share of freight transport to 25 % by 2015 (status in 2008: 17 %)
- A reduction of land-take to 30 hectares per day by 2020 (2002 to 2005 average: 118 hectares per day)

Also, in many German inner cities, the EU limit values for fine particulate matter and nitrogen dioxide are being clearly exceeded. Moreover, around 13 million people are exposed to noise levels that give rise to noise-related health risks and sleep disorders.

The Federal Environment Agency has identified the following sets of policy instruments which are particularly suitable for reducing the adverse environmental impacts of freight transport.

Spatial structural instruments

All measures to promote regional and economic development should be subjected to an obligatory transport impact assessment. The promotion of regional markets, particularly in consumer goods, should be expanded.

Maintenance of capacity at current levels as objective of the Federal Transport Infrastructure Plan (FTIP)

The FTIP should be orientated towards environmental policy objectives as defined, for example, in the German Government's Climate Programme. The FTIP should avoid to induce traffic. Absolutely essential extensions of the road network should be accompanied by the scaling down of road networks elsewhere.

Further development of the HGV road charge

The road charge should be levied on all HGVs over 3.5 tonnes weight and all roads, and should take into account all external costs of road freight transport (infrastructure, environmental, health and accident costs). In addition, the HGV road charge should be time-differentiated to ensure a better utilisation of existing motorway capacities.

Optimization of traffic flow through a general speed limit

A general speed limit on federal motorways for all vehicles would boost capacity, since it optimises traffic flow and enhances traffic safety. It has an immediate effect and costs nothing.

Increase in the capacity of rail infrastructure

Extending the rail network constitutes the most important transport infrastructure challenge. To meet this challenge, many railway lines in Germany will have to be re-commissioned, renovated, modernised and extended. Specific track capacity could be significantly increased through operational optimization of rail transport, e.g. by shortening the distances between trains and running longer freight trains. Stronger promotion of inter-modal transport and promotion of rail connections would significantly improve the infrastructure for a modal shift from road to rail and inland waterways.

Reduction of noise exposure

Rail freight transport must reduce its noise emissions. Besides mandatory maximum exposure levels, the introduction of emission-related track access charges is the most important instrument to achieve this. Preferential regulations for low-noise HGVs can help reduce noise exposure due to delivery traffic in sensitive areas.

Limit values for exhaust gas emissions and CO₂ for HGVs, trains and inland vessels

Vehicle-related technical measures to reduce the specific environmental impacts of HGVs, trains and inland vessels must be consistently implemented, both for new vehicles and for vehicles in use. In the medium to long term, legislators should also introduce mandatory limit values for CO₂.

The UBA scenario for 2025

If the predicted development in transport (as forecast by the German Federal Ministry of Transport (BMVBS), "BMVBS forecast 2025") takes place, achievement of the environmental objectives for freight transport would be limited to those for emissions of fine particulate matter. Instead of decreasing, CO₂ emissions would increase even further. Therefore, growth in freight transport must turn out to be lower than currently forecast. Moreover, a large proportion of freight transport volume must be shifted from road to rail and inland waterways. The German Federal Environment Agency recommends achievement of environmental objectives in accordance with the scenario presented here.

[All data in billion tkm]	Road	Rail	Inland navigation	Total
Reference year 2008	474	117	64	655
BMVBS Forecast 2025	704	152	80	936
Reduction potential of instruments (sequential computation)				
Spatial structure	-32	-4	-2	-37
No road extensions	-35	0	0	-35
Rail promotion	-49	+38	+11	0
HGV road charge	-71	+26	+0	-45
<i>Total</i>	<i>-187</i>	<i>+61</i>	<i>+9</i>	<i>-117</i>
	▼	▼	▼	▼
UBA Scenario 2025	518	213	89	819
Comparison of growth in transport performance compared to reference year 2008				
BMVBS Forecast 2025	230 (+49%)	35 (+30%)	16 (+25%)	282 (+43%)
UBA Scenario 2025	44 (+9%)	96 (+82%)	25 (+39%)	165 (+25%)

Reduction in freight transport performance pursuant to UBA scenario 2025

The BMVBS forecast expects an increase of 49 % in road freight transport performance, compared to 2008. In the UBA scenario, in contrast, road freight transport performance would grow by only 9%. This small growth could be absorbed by the existing road infrastructure, accompanied by measures to increase motorway capacity.

Climate protection objective for 2020: What contribution will freight transport make?

Were growth as forecast by the German Federal Ministry of Transport to become reality, direct annual CO₂ emissions from freight transport would markedly increase from 39.4 million tonnes in 2005 to 47.6 million tonnes by 2020. In the UBA scenario, by contrast, CO₂ emissions would fall by 2.7 million tonnes during the same period.

The UBA scenario could therefore make an important contribution to the achievement of the German Federal Government's climate protection objectives.

Sustainable mobility serves the fulfilment of social and economic needs within the framework of existing environmental demands. Germany has the opportunity to actually achieve key objectives of the Federal Government by the year 2025.

At http://www.umweltbundesamt.de/uba-info-medien-e/mysql_medien.php?anfrage=Kennnummer&Suchwort=3857, you will also find the full German-language version as well as a summary and the factsheet in German and English.