External costs of transport in EXTERNE

Fact Sheet

Project Information

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€ 0

EU contribution
€ 0

Coordinated by
UNIVERSITAET STUTTGART
Germany

Objective

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Recent trends in economic thought, in particular the emphasis on sustainable development and the use of market mechanisms in environmental regulation, have given prominence to environmental externalities. Studies have shown that transport is a source of considerable environmental external costs. A comprehensive, consistent accounting framework for estimating energy related external costs of transport activities will be developed and applied. By means of the impact pathway approach-using exposure-response relationships-marginal impacts due to road, rail, air and waterway transport will be quantified and monetised. The project focuses on impacts related to the use of energy (above all air pollution and global warming), but other impacts due to transport (e.g. accidents, noise or congestion) will be easy to integrate into the accounting framework.
Technical Approach
One of the main ideas of this project is to build up a system of building blocks. A "building block" is characterised by a transport object (e.g. 1 person, 1 tonne of goods), a transport location (e.g. motorway Stuttgart-Munich) and a transport technology (e.g. car, 3-way catalyst, emission standard EURO 2, engine displacement 1.4-2 l). Transport tasks (e.g. a journey from Stuttgart to Paris) can be assessed by combining different building blocks.

According to the impact pathway methodology, reference technologies have been defined which can be used to perform the transport tasks. The priority impacts, caused by the technologies under analysis have been identified. Required models (for dispersion, exposure-response relationships and monetary valuation) have been compiled and will be applied for implementing the impact pathways. Case studies for the UK, France, The Netherlands, Greece, Italy and Germany are carried out, taking into account urban, regional and trans-European transport tasks. Thus, a set of values for different building blocks will be provided. As studies in the transport sector have shown as well as the previous ExternE project, some of the impacts cannot be quantified with the currently available knowledge. If the quantification of a physical impact is impossible, other methods of assessment, such as sustainability or pressure indices are reviewed and applied.

Expected Achievements and Exploitation
An accounting framework for assessing the environmental externalities of the transport sector will be developed. As this framework is based on a system of building blocks it will be possible to provide data on different levels of aggregation. The results, marginal costs for selected transport tasks and technologies of road, rail, air and waterway transport, can be used for including environmental damage into models like energy-, transport-, E3-models. The results will allow to compare energy related impacts of current and future transport technologies. Completion of the accounting framework and aggregation will be the objective of a further project. The complete accounting framework will aid policy and decision makers in the E3-area to make optimal choices towards internalisation of transport externalities. Results can be integrated into activities of "green accounting" at the national and European level.

Programme(s)

Topic(s)

Funding Scheme

CSC - Cost-sharing contracts
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