

http://ec.europa.eu/environment/ecoap/about-eco-innovation/good-practices/czech-republic/20130916-czech-system-promises-eco-benefits-from-reduced-congestion_en.htm



ENVIRONMENT
Eco-innovation Action Plan

European Commission > Environment > Eco-innovation Action Plan > About Eco-Innovation > Good practices > Czech Republic

Home | Who's who | Policies | Integration | Funding | Law | Resources | News & Developments

ABOUT THE ACTION PLAN | ABOUT ECO-INNOVATION | NEWS AND EVENTS

Czech system promises eco-benefits from reduced congestion

16/09/2013

Transport

Czech Republic



Traffic congestion brings with it major costs - both economic and environmental. Economically, the cost of congestion in Europe has been estimated at 1% of GDP. In environmental terms, the main impacts are air and noise pollution, and an approximately 30% increase in fuel consumption in traffic jams, with the associated increase in greenhouse gas emissions^[1].

The Czech Republic is currently at particular risk of congestion because of a series of major repair programmes on some of the country's main highways, including the D1 motorway which connects Prague with Brno and Ostrava. Partly in anticipation of this, a consortium headquartered at the Technical University of Ostrava has developed an innovative "dynamic mobility model" that will use a range of data to predict traffic flows and to enable traffic management decisions to be quickly taken and efficiently implemented, thus reducing congestion to a minimum.

The consortium, the Centre for the Development of Transportation Systems, known as **RODOS**, uses as its raw material traffic movement data from company car fleet management databases, telephone company GSM data records and data on truck movements. Overlaid on this is weather information, creating a "fusion of data sources," according to RODOS manager Martin Hájek. Data is anonymous meaning that data protection concerns do not arise.

The result is a system that is able both to show current problems, and which also has predictive power, identifying areas where congestion is likely to build up. Modern ICT networks mean that traffic managers can respond quickly to these signals, taking measures to proactively cut congestion. Examples of this, says Hájek, include flexible tolls that will be higher in peak hours - these aim to "cut the peak and make the flow on the road much more effective," Hájek adds.

Tolls could also be levied using electronic tags in vehicles that record travel times and distances and charge tolls according to how smoothly the traffic is moving. Hájek says that the "level of service" that roads offer can be calculated. For example, an average speed of 100 kilometres per hour might be judged to be equivalent to the optimum service level. If congestion causes the average speed to fall to 50km/h, the road is only delivering half of the optimum level of service, and the toll charge could accordingly be halved. Such an approach could persuade authorities to move more quickly to fix problems, Hájek says.

Data from the RODOS system could also be integrated into, for example, Google maps or car Sat Nav systems, giving drivers instant information about problems that lie ahead. Hájek says that many western European countries have traffic management based on an expensive infrastructure of traffic monitoring cameras; RODOS could help the Czech Republic leapfrog these systems to a more advanced, predictive approach to traffic management, that will minimise congestion-related economic and environmental costs.

The RODOS system is in the development stages. The consortium is considering with the Czech Ministry of Transport how it can best be implemented, and "discussions are ongoing" on possible pilot deployments - including on the D1 motorway, Hájek says. Other ideas are also being explored, including the possibility of overlaying air quality data with the traffic data, so that air quality can also be taken into account in traffic management, which could eventually generate further environmental benefits.

[1] Figures from European Commission Impact assessment accompanying the Roadmap to a Single European Transport Area, COM (2011) 144.

More information

- <http://www.centrum-rodos.eu>