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ECOSTAND: towards a standard methodology for environmental evaluation of ITS

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Abstract

Intelligent Transportation Systems (ITS) are part of a sustainable development by offering the potential of reducing pollution related to transport. However, the evaluation of its effects suffers from a lack of methodological standard which makes the comparison of results and portability difficult. A standardized assessment methodology was developed in an international context involving Europe, the USA and Japan. At European level, this has been supported by the ECOSTAND project. Launched in 2010 for a period of three years, the international project ECOSTAND aimed to achieve a standardized framework between the EU, Japan and the USA on a common evaluation methodology to determine the impacts of ITS on energy efficiency and CO_2 emissions. Funded by the European Commission, this coordination and support action comprises formulating policy advice in the form of a roadmap and a joint research program to identify gaps in understanding and propose solutions to develop a methodology. This objective was achieved through a series of international conferences in the three regions, which secured the cooperation of key experts and provided a forum for the exchange of information. This has led to the production of a methodological guide for three types of actors: policy makers, stakeholders and researchers.

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Keywords: ITS; standardisation; optimization of traffic networks; traffic and emmision modelling; roadmap; probes vehicles

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1. Introduction

Policy makers in Europe, Japan and the US share the conviction that the application of information and communication technology (ICT) to the field of road transport, commonly referred to as intelligent transport systems (ITS), can make a significant contribution to improving energy efficiency and reducing CO_2 emissions from the sector.

As the development of so-called 'green ITS' applications and services happens, common understanding of their impact and effect is necessary. This is what ECOSTAND covers together with its Japanese and American counterparts. Different assessment methodologies and models are used in different regions of the world, which renders the comparison of results difficult and hampers decision making. A standard international assessment methodology would ensure that knowledge on the impacts of ITS is acquired using a rigorous, systematic approach, validated on a global scale.

ECOSTAND was established to support cooperation between the European Union (EU), Japan and the United States (US), in working towards a common assessment methodology for determining the impacts of Intelligent Transport Systems on energy efficiency and CO_2 emissions standardisation.

The project serves as a platform for the continuation and expansion of the EU-US collaboration, and effectively replaces the European Commission (EC)-METI (Japanese Ministry of Economy, Trade and Industry) Task Force. This support will involve the formulation of (i) policy advice, in the form of a roadmap and (ii) a joint research agenda to identify gaps in the understanding and to propose solutions to enable the methodology to be developed.

1.1. Motivation

Since few years, a worldwide consensus about CO_2 has been rising, and hence CO_2 became a global issue. Although, Kyoto is a global agreement, reductions are realized locally. CO_2 emissions coming from transport are ranging from 15% to 25% annually emitted by different sectors (see **Erreur ! Source du renvoi introuvable.**). The contribution to the total emissions on a global level is very significant. In order to reduce these emissions, various agreements on a global level have already been put in place and are under negotiation on the political level.What kind of reductions can ITS contribute (since transport contributes significantly to CO_2 emissions)? This can be both in-car, but also infrastructure related

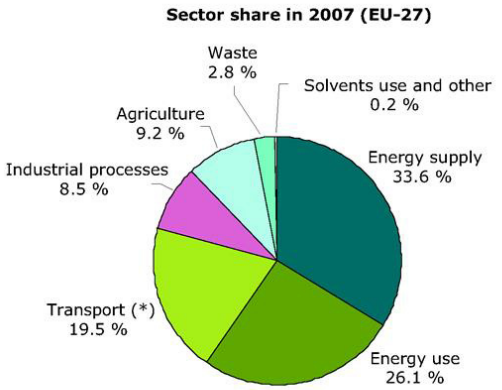

Figure 1 CO2 contribution of different sectors in UE see ECOSTAND (2013a)