



MIRAVEC

Dissemination Strategy Report

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MIRAVEC

Modelling Infrastructure influence on RoAd Vehicle Energy Consumption

MIRAVEC - Modelling Infrastructure Influence on RoAd Vehicle Energy Consumption

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1 Background

“ERA-NET ROAD – Coordination and Implementation of Road Research in Europe” was a Coordination Action funded by the 6th Framework Programme of the EC. The partners in ERA-NET ROAD (ENR) were United Kingdom, Finland, Netherlands, Sweden, Germany, Norway, Switzerland, Austria, Poland, Slovenia and Denmark (www.road-era.net). Within the framework of ENR this joint research project was initiated. The funding National Road Administrations (NRA) in this joint research project are Germany, Denmark, Ireland, Netherlands, Norway, Sweden and United Kingdom.

CO₂ emissions from road transport represent an important part of the overall greenhouse gas emissions and consequently contribute to the ongoing climate change. Efforts to reduce those emissions need to consider all influencing factors on energy consumption of road vehicles, which is directly linked to their carbon footprint. Besides the ‘greening’ of vehicle technologies, the improvement of road infrastructure characteristics related to fuel consumption can contribute to an overall CO₂ reduction in road transport. This requires both a thorough understanding of those interactions and the implementation of results in current pavement and asset management practice. In contributing to both objectives, MIRAVEC enables National Road Administrations (NRAs) to effectively support the reduction of road transport greenhouse gas emissions.

While some previous and ongoing projects like ECRPD or MIRIAM focused on specific topics in this area, the objective of MIRAVEC is to build on existing knowledge and models. In doing so MIRAVEC aims at achieving a more holistic view considering a broad variety of effects (e.g. the interaction between road design and traffic flow). Moreover, MIRAVEC will investigate the capabilities of available models and tools and evaluate the relative importance of different road infrastructure characteristics for different settings (e.g. topography or network type). The relationship with road safety and noise emissions will be examined. The project results will be compiled into recommendations to NRAs on how to implement the findings, models and tools in pavement and asset management systems.

2 MIRAVEC impact

The main objective of MIRAVEC is to provide recommendations for road infrastructure design and operation leading to reduced energy consumption and associated reduced CO₂ emissions from road transport. Road infrastructure measures to achieve this aim need to complement parallel efforts in the fields of low-emission and fully electric vehicles, energy saving tyres and intelligent road transport systems. The impact of different infrastructure designs needs to be well understood and modelled to give road administrations a sound basis for management decisions. In parallel, they need knowledge about the limitations of available data and models. The final output of MIRAVEC is a report comprising recommendations on the relevant effects and parameters, their importance in different contexts, the available modelling capabilities and their implementation in pavement and asset management.

The impact of road infrastructure on the energy consumption of road vehicles has been examined in some previous projects like IERD, ECRPD or MIRIAM. However, these projects have usually focused on a relatively narrow group of effects and parameters, which makes it difficult to achieve a holistic picture. For example, while rolling resistance or gradient may be road infrastructure parameters clearly linked to vehicle energy consumption, the effects of lane provision or different speed regimes are less obvious. Additionally some infrastructure parameters interact with more than one component of the vehicle.

One example is road unevenness, which does not only contribute to the rolling resistance of the tyre but also generates energy losses in the suspension system. In addition to the wider range of effects that needs to be considered also the descriptive parameters like the IRI (International Roughness Index) themselves have to be critically analysed for their relevance to energy consumption.

The comparative importance of different effects may be further changed by the introduction of new vehicle concepts like fully electric vehicles and the associated changes in the vehicle fleets. For the quantification of effects by modelling it is necessary to evaluate the available models and identify the remaining gaps and required developments. Moreover, the different road infrastructure effects and their relative importance for on road vehicle energy consumption are also dependent on context like topography, climate or regional characteristics. Finally it is essential to bring all the results into an asset management context to enable informed decision making.

3 Dissemination Plan objectives

In order to facilitate dissemination of the work plan and outputs, this dissemination strategy evaluates the frameworks, processes and plans, necessary for this project to reach its desired audience. It brings together the current knowledge of target audiences, existing networks and priority activities during the project, not only during the 24 month duration of the project but also after the end date – 31st October 2013. It will be reviewed and updated at the project mid-term assessment in M13 with inclusion of possible new dissemination opportunities that emerged along with the project.

This dissemination strategy details the activities that will be undertaken to distribute the knowledge obtained in the project, to organise the consultations with external bodies and to undertake public awareness activities.

4 Dissemination target groups

Upon first observation, dissemination means will primarily be focused towards the following target audience:

- National road administrations/authorities (NRAs)
- Transport ministries
- The wider road research community that will potentially benefit from project result

5 The key dissemination activities

Project reports, technical notes, a project website set up by FEHRL and various print materials - including a logo, poster, and project flyer - will ensure the proper attention needed to spread awareness to the interested parties. Dissemination to the NRAs is planned by using workshops, project presentations and a project website. A final report incorporating the main findings will be prepared based on the WP's at the end of the project. A final project event will also take place.

5.1 MIRAVEC presentation materials

A coherent visual identity for the project is being developed for the project, including the logo (Figure 1), Powerpoint and other templates, styles and guidelines which can be used by partners when presenting their work in electronic and print material. There will also be a comprehensive range of dissemination material produced within the project. The design of these tools will be based on the project logo and will trigger project concept and objectives. The usual print material (press releases, brochures, posters, leaflets, etc. presenting project concept, achievements, and results) will be developed, as well as promotional material distribution at events (such as TRA2014, TRB, etc) – see table 1.



Figure 1 The MIRAVEC logo

Table 1: Overview of materials and timings

Materials	Topics	Publication date
Powerpoint	General overview of project (aims and activities)	June 2012
Leaflet	General overview of project (aims and activities)	June 2012
Poster	General overview of project (aims and activities)	June 2012
Press release	Results of project Overview of event Next steps	October 2013

5.2 Newsletter

The project consortium will publish an e-newsletter every six months which will be accessible through the public part of the website and sent by email to all identified stakeholders. These newsletters will report the news of the project. The first newsletter, to announce the project, should be published in April 2012. An e-newsletter will also be produced every 6 months to promote availability of evolving results, as well as upcoming events. The newsletter will be sent directly by e-mail and other emails will be sent to inform FEHRL members about the developments and final outcome of the project and various aspects of potential interest.

FEHRL is responsible for producing the newsletter and drafting an editorial list of topics which will complete the table below. They will produce the first draft and send to AIT. Once they have received feedback from them, FEHRL will then send out to all partners one week before publishing to give the chance for them to give any input. At least four newsletters will be published according to table 1 below:

Table 1: Overview of newsletter topics and timings

Issue	Topics	Publication date
First newsletter	General overview of project (aims, feedback from kick-off meeting, dissemination of project at TRA2012 and other activities	May 2012
Second newsletter	Topics to be confirmed	October 2012
Third newsletter	Presentation of deliverables achieved so far	May 2013
Fourth newsletter	Results of project Overview of event Next steps	October 2013

News from the newsletter can also appear individually on the website. Topics that could be added to newsletters include:

- Key milestones of the project reached
- Key actions of the project taken (e.g. questionnaire sent out, meeting held, etc)
- Key workshops/events/conferences/exhibitions where MIRAVEC has been presented
- News about participation at a Conference or workshop
- Key magazines where MIRAVEC was covered
- News about relevant projects
- News about relevant transport-related happenings/events (e.g. TRA2012)
- Features on a partner in the project
- Possible national or regional applications as a result of MIRAVEC
- News about major events related to relevant policy (issue of legislation, publication of communications from the NRAs/EC, publication of major studies commissioned from NRAs/EC's DGs)

5.3 Website

A project MIRAVEC webpage has been set up and launched at <http://www.fehrl.org/miravec> (see figure 2 below) that is dedicated to the provision of up-to date information on the progress and the achievements of the project. It introduces the objectives, activities and outputs of the project. All dissemination materials will be available for downloading from the website.

This website is both a public showcase and for document sharing. The website's structure aims to provide both easily accessible basic information for external visitors and special information in more detail for registered users. It will also act as a principal means of publication for news and updates. A private-document sharing will be used for private document sharing. FEHRL will be responsible for updating the website with support from AIT.

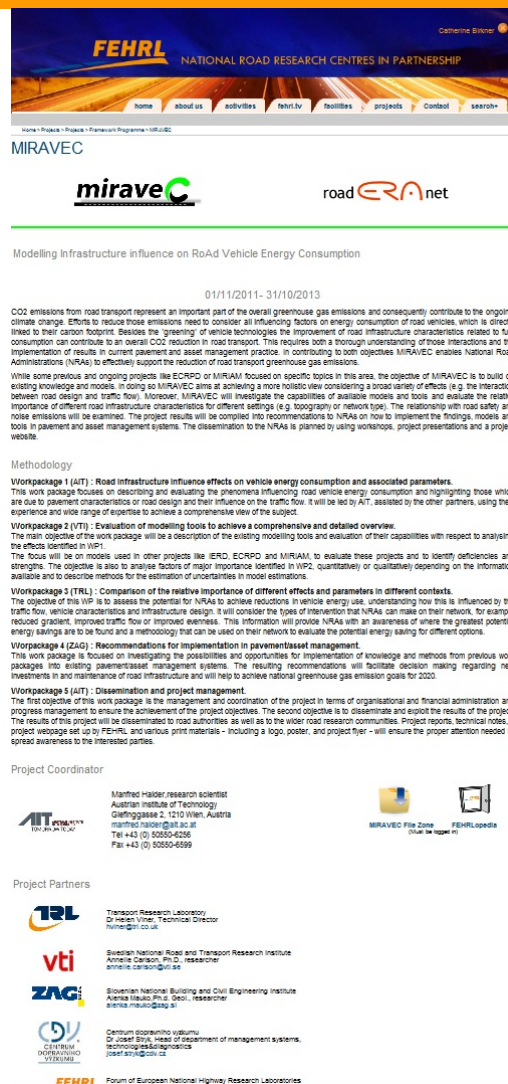


Figure 2 The MIRAVEC webpage

The progress and results of MIRAVEC will be published on to at least all partner websites. A list of relevant websites where the project can be advertised are:

- FEHRL (see <http://www.fehrl.org/index.php?m=155&mode=more&id=507>)

Other sites where MIRAVEC should be added will be provided during the first few months of the project.

All results of the project will be available through the RRAF (Road Research Access Facility), the web portal being developed within the ENR2 project.

5.4 Events

FEHRL will organise a workshop as well as a Final Event (M5.4) for presentation of the results of the project. All partners should give presentations at events and conferences, meetings, workshops, symposia, scientific and information “days”, either organised by other associations or by the partners of the MIRAVEC project.

The project will be represented at FEHRL stands during conferences, exhibitions and seminars. The relatively high number of participants and from all over Europe in MIRAVEC will also ensure that the result will be widely spread. The project consortium will disseminate the project results in conferences such as the TRA 2014, which will be held in Paris, France, and similar conferences. TRA conferences attract researchers, practitioners, designers, constructors, operators and administrators and are a perfect platform to present the results of the project through a paper presentation.

Table 3: Overview of events and timings

Event	Topics	Timing
TRB2013	Topics to be confirmed	January 2013
FeRRM 2013	Presentation of deliverables achieved so far	April/May 2013
MIRAVEC final conference	Results of project	October 2013
TRA2014	Results of project Next steps	April 2014

5.5 Contact with International bodies

The inclusion of FEHRL in the project will ensure the effective dissemination of results in all European countries and beyond. The results will be directly communicated to other national and European organisations, primarily the national road administrations and CEDR, but also internationally, through PIARC (World Road Association) and TRB (Transport Research Board).

The need to reduce CO₂ emissions from road traffic is obviously not only a European problem. Some research is also being done in other parts of the world to understand the influence of road infrastructure characteristics on road vehicle energy consumption. In order to keep the MIRAVEC consortium up-to-date with the latest developments in this field in the USA, Virginia Tech has agreed to take part in the project. In addition to that the project will also maintain close links to the US Federal Highway Administration (FHWA).

6 Exploitation of results

The main prospective users of the results are NRAs and transport ministries seeking to introduce vehicle energy consumption as an element into sustainable pavement and asset management systems. While they are requested to make a contribution to the ongoing efforts for the reduction of greenhouse gas emissions, they face budget limitations with regard to the available options for beneficial road infrastructure measures. In accordance with the ERANET II Energy objectives this project aims at

- assisting the users in understanding the relevant interactions and effects,
- enabling them to evaluate available measures and
- providing a basis for their decision making concerning implications of their actions for vehicle energy consumption.

The benefits of implementing the results of MIRAVEC for NRAs consist of both assisting in their decision making and helping them to achieve their greenhouse gas emission targets in a cost-effective way. This is especially important as there is the difficulty of balancing low CO₂ emission with other objectives like a high level of road safety, high mobility requirements or reduced noise emission. These aspects may sometimes take higher precedence in the decision making, especially if NRAs are not fully aware of the CO₂ emission implications of their decisions. In addition to that national efforts to reduce road traffic greenhouse gas emissions may be difficult to implement in view of the high levels of cross-border traffic. For this reason a common understanding of energy efficiency and sustainability issues in road transport and comparable indicators will greatly facilitate the implementation of efficient measures and the adoption of best practice examples.

As far as the understanding of road infrastructure characteristics on vehicle energy consumption is concerned, close cooperation between the different projects, organisations and actions covering the various aspects of the topic will be needed. The cooperation between the MIRAVEC and EMARO projects and the continuous line of development through series of projects like the predecessors of MIRAVEC is the most promising strategy to achieve useful results for the end users.

7 Conclusions

In order to facilitate dissemination of the work plan and outputs, this dissemination strategy evaluates the frameworks, processes and plans, necessary for this project to reach its desired audience. It brings together the current knowledge of target audiences (section 4), existing networks and priority activities (section 5) during the project, not only during the 24 month duration of the project but also after the end date – 31st October 2013. It will be reviewed and updated at the project mid-term assessment in M13 with inclusion of possible new dissemination opportunities that emerged along with the project.

This dissemination strategy details the activities that will be undertaken to distribute the knowledge obtained in the project, to organise the consultations with external bodies and to undertake public awareness activities.

References

MIRAVEC - Modelling Infrastructure influence on RoAd Vehicle Energy Consumption, Updated description of work v.8.1 from July 19th, 2011