

LICCER
Life Cycle Considerations in EIA of Road Infrastructure
a research project of the
cross-border funded joint research programme
“ENR2011 ENERGY – Sustainability and Energy Efficient Management of Roads”

1) Introduction

“ENR2011 ENERGY – Sustainability and Energy Efficient Management of Roads” is a trans-national joint research programme that was initiated by “ERA-NET ROAD II – Coordination and Implementation of Road Research in Europe” (ENR2), a Coordination Action in the 7th Framework Programme of the EC. The funding partners of this cross-border funded Joint Research Programme are the National Road Administrations (NRA) of Germany, Denmark, Ireland, Netherlands, Norway, Sweden and United Kingdom.

2) Project Facts

Duration:	01/01/2012– 31/12/2013
Budget:	EUR 249 948 €
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3) Project Description

It is important that decisions in transport planning are based on comprehensive information regarding environmental impacts from infrastructure. Current practise do however show that there is a lack of life-cycle considerations of energy use and contributions to climate change in the process of Environmental Impact Assessment (EIA) in the early stages of transport planning.

Recent life-cycle assessments of road infrastructure have mostly concentrated on the material level of analysis considering only specific parts of road transport. They are therefore often less suitable for earlier stages of transport planning where site-dependent aspects should be considered, such as the choice between different types of road infrastructure: tunnels, bridges or plain roads.

The aim of this study is to develop an easy to use model including a framework and guidelines, based on existing tools and methodologies for Life Cycle Assessment of road infrastructure that can be used within an EIA process in the early stage of transport planning (as shown on figure below).

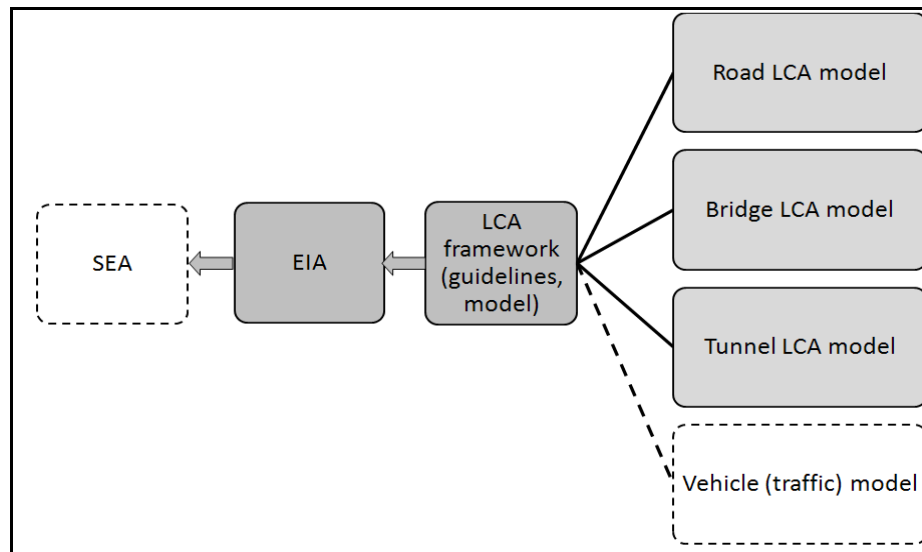


Figure 1 Schematic structure of the project

The term "road infrastructure" used in this study refers to the following items: plain roads, tunnels, bridges, as well as other supporting components (signs, lightning installations, road furniture etc.).

The model includes site-dependent aspects of the planning such as the choice of a plain road, bridge or tunnel. The life-cycle model will focus on energy use and contribution to climate change. By using an LCA model there will however be an option to include also other environmental impacts.

The knowledge from this project will be a useful input in Strategic Environmental Assessment (SEA) that considers the whole transportation system (including land, water and air transport), as it will give a differentiated information on the energy use (or GHG emissions) to be expected from road constructions. Further, the knowledge obtained from the LCA model will imply a basis for more detailed assessments on how to design the specific road, as the hotspots of the system will be identified.

4) Expected Results

The proposed project will result in an easy to use model for analysing energy use and contributions to climate change of road infrastructure in a life-cycle perspective. It will be based on already existing models and tools and include guidelines on how to use them within the developed model. Recommendations on how to use the model in the EIA processes will be also provided.

It is expected that the model will be built in Excel using a modular framework that will consist of modules for plain roads, bridges and tunnels including supporting components.

The project will involve a trans-national bench-marking and choice of best available methodologies for the benefit of all involved countries. By using this model National Road Agencies and other stakeholders will be able to compare different alternatives in decision making processes.

Most of the partners involved in this study do already have ongoing projects on road infrastructure in their countries, and also in international projects. This improves the possibilities for further dissemination and exploitation of the results.