LICCER

Report from first workshop

Report Nr 1

June 2012

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1 Introduction

The aim of LICCER is to develop a model for Life Cycle Assessment (LCA) of road infrastructure that can be used within an Environmental Impact Assessment (EIA) process in the early stage of transport planning. The life-cycle model will focus on energy use and contribution to climate change, but it will consider an option to include also other environmental impacts. 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 work within LICCER is conducted through five work packages (WPs). Figure 3 presents the different WPs and how they are organised within the project. WP1 and WP2 will be performed throughout the whole project while WP3, WP4 and WP5 will be performed by the corresponding partners in parallel.

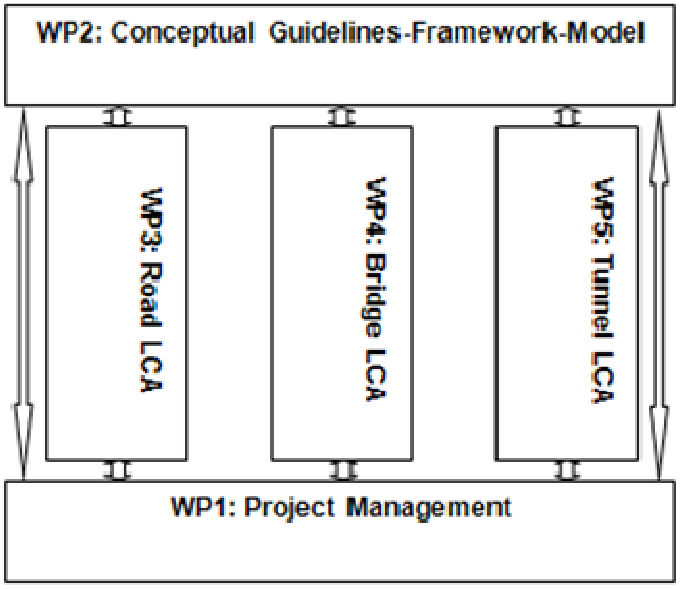

Figure 1 Organisation of work packages

1.1 Objectives

This report presents a workshop with the reference group and other stakeholders performed within LICCER project, WP2 in May 2012. The aim of the workshop was to:

- Discuss the possibilities of incorporating LCA within the process of EIA (SEA)
- Get a basis for the LCA model development (with the focus on how to make the model most beneficial)

Within LICCER WP2 a comparison and benchmarking of the existing EIA procedures in Sweden, Norway, Netherlands and Denmark has been performed during spring 2012. Focus of the benchmarking was Sweden and the Netherlands, in which interviews were performed with representatives from the NRAs, consultancy firms and researchers. The results were presented at the workshop, in which the results were verified and further information was gained, i.e. regarding EIA procedures in Norway and Denmark. The requirements and

processes for Environmental Impact Assessments of road infrastructure in Sweden, Norway, Netherlands, and Denmark were further discussed.

2 Participants

Participants at the workshop are presented in the table below.

Table 1 Workshop participants.

Name	Organisation	Country
Ali Azhar Butt	KTH	Sweden
Andreas Öman	WSP	Sweden
Anna Björklund	KTH	Sweden
Anna Wahlström	Merriage AB	Sweden
Caroline Karlsson	KTH	Sweden
Charlotta Faith-Ell	WSP	Sweden
Ebbe Adolfsson	Naturvårdsverket	Sweden
Evert Schut	RWS	Netherlands
Harpa Birgisdottir	Harpa Birgisdottir Consulting	Denmark
Helge Brattebø	NTNU	Norway
Hisham Shamoon	KTH/Ramböll	Sweden
Håvard Bergsdal	MiSA	Norway
Ingeborg Kluts	WUR/KTH	Netherlands
Irene Lingestål	Trafikverket	Sweden
Jacob Fryd	Danish Road Directorate	Denmark
José Potting	WUR	Netherlands
Kjell Ottar Sandvik	Vegvesen	Norway
Kristina Lundberg	Ecoloop	Sweden
Larissa Strömberg	NCC	Sweden
Lennart Folkeson	VTI	Sweden
Linda Høibye	COWI	Denmark
Linus Karlsson	Trafikverket	Sweden
Michael Ruben Anker Larsen	Danish Road Directorate	Denmark
Sofiia Miliutenko	KTH	Sweden
Susanna Toller	KTH/Ecoloop	Sweden
Svante Berg	Ramböll	Sweden
Ulrika Bernström	Sweco	Sweden
Yvonne Andersson Sköld	SGI	Sweden
Åsa Lindgren	Trafikverket	Sweden

3 Presentations

As an introduction to the topic of the workshop, eight presentations were made in the beginning of the workshop. The presenters and the title of the presentations are given below:

Importance of energy and life cycle perspective at the Swedish Transport Administration, Åsa Lindgren (Swedish Transport Administration)

Overview of EIA process in the Netherlands and Sweden: preliminary results, Ingeborg Kluts (WUR/KTH), Sofiia Miliutenko (KTH)

New infrastructure planning system in Sweden, Charlotta Faith-Ell (WSP)

Use of LCA during infrastructure planning process in the Netherlands, Evert Schut (Dutch Ministry of Infrastructure and the Environment)

EIA process in Denmark, Jakob Fryd (Danish Road Directorate)

EIA process in Norway, Kjell Ottar Sandvik (Norwegian Public Roads Administration)

Incorporating greenhouse gas emissions in Benefit-Cost Analysis in the transport sector in Norway (EFFEKT project), Kjell Ottar Sandvik (Norwegian Public Roads Administration)

4 Comparison of infrastructure planning in different countries

At the workshop the result from the study with the aim to compare and benchmark the road infrastructure planning process and the use of Environmental Assessments (i.e. SEA and EIA) in the planning process in the Netherlands and Sweden was presented. The workshop was used for verifying the result and gain further information, especially regarding the transport planning process and the EIA procedures in Norway and Denmark. The result of the comparison of all countries is given in the table below.

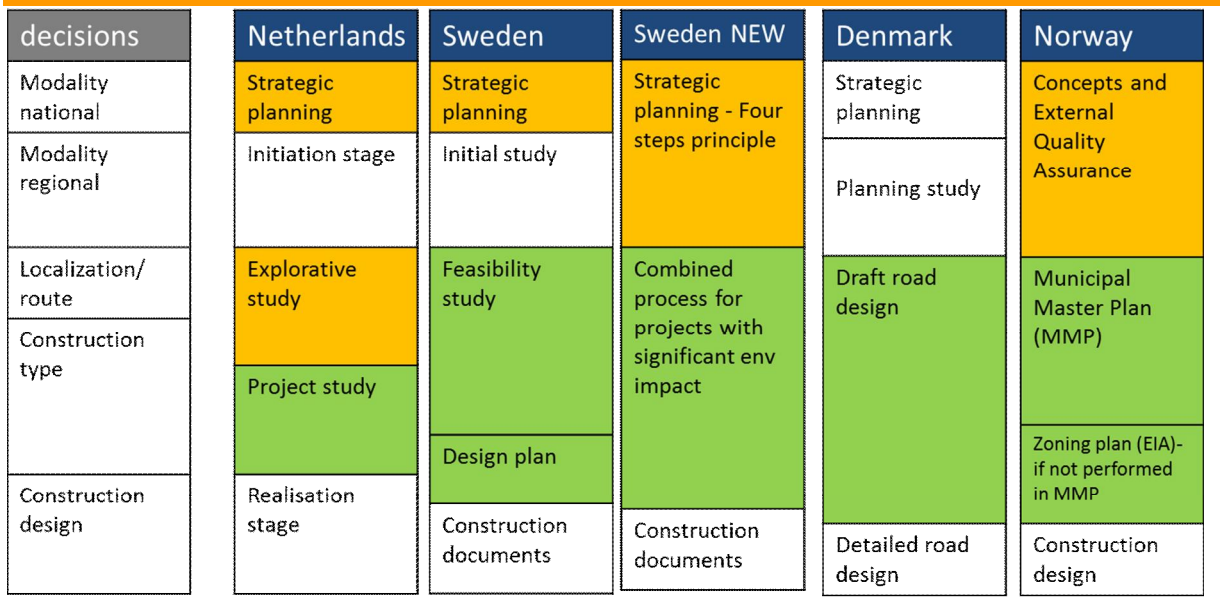

Figure 2 Comparison of infrastructure planning in the Netherlands, Sweden, Denmark and Norway.

5 Summary of workshop discussions

A main part of the workshop consisted of group discussions. The groups were formulated in beforehand of the workshop with the aim of mixing different competences and countries. All groups discussed six questions. The questions were formulated by the LICCER project and were formulated around the issue of incorporating LCA within the process of EIA (SEA) and the development of the LCA model development. The groups discussed the questions for about one hour and then each group presented their findings for the whole group. Below the questions are presented together with a summary of the group discussions.

Question 1: *In which stage of the planning process is life cycle energy and greenhouse gas emissions from road infrastructure information relevant and why?*

- It is relevant in all planning stages, not so detailed in the early stage as in later stages. More real data later on.
- Time and cost efficiency/usefullness
- Early stage planning needs to consider type of traffic
- Early phase decisions can have a large impact
- Road infrastructure not so important when it comes to the very early planning, but when the decision on modality is made, infrastructure should be included. Rail infrastructure, however, is important to consider even when modality is decided.
- We should include energy and greenhouse gas emissions as early as possible, but in the very early stage infrastructure will not be so important. In some cases there might be a trade off situation however.
- LICCER does not cover everything needed in the early phase.
- The closer you are to the design, the more important the infrastructure becomes
- Early in the planning process infrastructure matters if it influences traffic

Question 2: *How should the life cycle considerations be integrated within the decision process for road localization?*

a) *Should it be included in the EIA or SEA, or by any other means?*

b) *How should it be done? If you think it should be included in the EIA or SEA, please indicate where in the process and what is the procedure/tools for including it?*

- It should be included both in SEA and EIA
- There is no standardized way to do it
- Certification system, maybe there are standard ways there for how to do this. (this might be looked into by the SUNRA project)
- SEA and EIA means different things depending on country
- More dignity if separated from SEA and EIA and also more part of the construction team than the EIA team (EIA comes after the first decision)
- Checklist in the early stage for screening ï it could be concluded if it is important to carry out an LCA.

Question 3: *To what extent should the whole life cycle system of road infrastructure be considered in the analysis of energy and greenhouse gas emissions?*

- Demolition is less relevant, not so often included
- All the others should be included. What is important is that the model is simple so that the user do not have to think so much about it
- Traffic is most important
- Implications on the change in traffic from the transport infrastructure should be considered
- There are standards for LCA that should be followed.
- In the Netherlands it is not a problem, the model Dublocalc solves it.
- Difficult to do this in early stage without data

Question 4: *What project specific information would be important in order to be able to calculate the life cycle energy and greenhouse gases for different road localization alternatives? Is that data gathered already as a part of the decision process?*

- Road construction elements (roads, bridges, tunnels) are basic req.
- Details about the constructions come next
- Can average data be used or not (specific features of the project)
- Existing basis for cost estimates can be utilized
- How the project influences traffic
- Quality of database is important

Question 5: *In the LICCER project a model will be developed for life cycle energy and greenhouse gas consideration in decisions on road localization. What would make such a model beneficial for you?*

- For quantification during decisions

- Not a tool for only a part of the process, more like successive calculation
- A flexible model needed that can be utilized from early to late stages
- A question for Trafikverket is how to implement the models we already have
- What is already solved with existing models (changer for example)
- Simple and transparent, not to complexed because it will not be maintained and managed

Question 6: *What else have come up during this group discussion that might be of interest for the continuation of the LICCER project?*

- Electricity mix important issue
- Demolition and reuse
- EPD/PCR should be looked into
- There are a lot of tools, but they are to complex, how to utilize them?
- What it mandatory in the procedure

6 Final conclusion

The LICCER project will, according to the application, develop an LCA model for energy and climate change including a framework and guideline. It was suggested during the workshop that LICCER should not develop a new tool but rather be based on existing tools and methodologies.

In the project plan of LICCER it is suggested that LCA should be integrated within EIA. However, after the discussions at the workshop the reference group agreed on that the aim will rather be to help the decision making. As a result of the discussion, it was determined the actual decision situation is more important than the EIA/SEA tool. The aim is therefore primarily not to fit LCA into a process such as EIA, but rather to provide this type of information to be used in the planning process (in the EIA or SEA, or by other means). Even if performed outside of an EIA, it was concluded that the result of the LCA can be presented in the EIA document.

Appendices

Appendix 1 ï Workshop programme

Appendix 2 ï Workshop discussion groups