

Pavement Life Cycle Assessment Workshop

Sponsors:



Additional sponsors:



Collaborators:



Additional support provided by:



Organizing Team

- Alissa Kendall
- Nick Santero
- Tom van Dam
- John Harvey
- Ting Wang
- In-Sung Lee
- Roy Singh

MIRIAM



What is MIRIAM?

Project started in 2009 by 11 partners from Europe, incl two from USA

Pooled, internal funding (so far)

Aims at providing a sustainable, environmentally friendly road infrastructure

by reducing rolling resistance – hence lowering CO₂ emissions and increasing energy efficiency

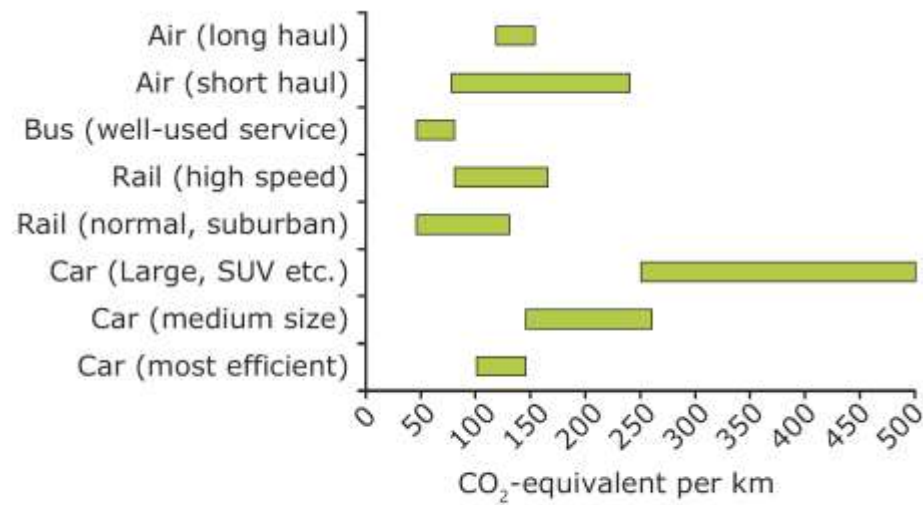
MIRIAM

FEHRL

Models for rolling resistance in Road Infrastructure Asset Management Systems



- The EU- commission has realised that it is not sufficient to look at the absolute emissions in the different sectors.
- There is a need for rebalancing the effort taken by the sectors
- Their ability to reduce CO2 emission must therefore be assessed.



Source: Adapted from AEF, 2007.

MIRIAM aim is to establish models for:

- **Energy saving through reduced rolling resistance**
- **Vehicle CO2 and Rolling Resistance Sources**
- **Transport Infrastructure Operation and Management**

Participants: Denmark, Sweden, Norway, Austria, Belgium, France, Slovenia, Poland and USA

Phase 1 – 2010 to 2011

- ❖ **Sub-project 1** Measurement methods
Project lead is Sweden
- ❖ **Sub-project 2** Investigate influence of pavement characteristics on energy efficiency
Project lead is Austria
- ❖ **Sub-project 3** Investigate importance of Rolling Resistance on efficiency within LCA framework
Project lead is USA
- ❖ **Sub-project 4** Constrains/ Requirements to implementation in Asset Management and LCA systems
Project lead is Denmark
- ❖ **Sub-project 5** External funding and raising awareness
Project lead is Denmark

MIRIAM



Workshop Objectives (1 of 3)

- Research products under development as part of this work include:
 - An LCA framework for pavements.
 - A summary of system boundaries and assumptions for the framework, as well as an examination of the pros and cons of alternatives.
 - Assessment of models/data for each phase of the life cycle with regard to project type.
 - Documentation requirements for pavement LCA studies sufficient to permit comparison between studies in terms of completeness, assumptions, system boundaries and data/models.

Workshop Objectives (2 of 3)

- Desired Outcomes of the Workshop:
 - Review and discussion of documents prepared by the research team for each of the four bullet items listed above.
 - Brief presentations and discussion of critical issues for pavement LCA where conflicting practices or gaps in knowledge have been identified.
 - Summary of areas of consensus and disagreement with regard to bullets a, b, c, and d above and documentation of alternative views.

Workshop Objectives (3 of 3)

- The intention of the research team and workshop sponsors is that the results will provide the following benefits:
 - Use of appropriate assumptions, system boundaries, models and data by the research team for the California and Miriam studies.
 - Better understanding of LCA among pavement LCA practitioners, sponsors and consumers of pavement LCA information.
 - Recommendations for improvement in practice of LCA studies.
 - More transparency in the documentation of how pavement LCA studies are performed.