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road research in europe

CEREAL

CO₂ Emission Reduction in roAd Lifecycles

12-13 February 2014
Trafikverket, Stockholm




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CEREAL objectives

- Development of a prototype software tool for computation of the CO₂ emission of road pavement construction and maintenance works
- A decision tool for NRA's and contractors harmonised on the European level
- Proper use of the tool by providing training courses and tutorial material

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- Assessment report of existing tools
- Procedure for calculation impact of road infrastructure measures on CO₂-emission in road transport
- Tool for prediction of CO₂-emission in construction and maintenance phase of roads
- User's guide and tutorial workshops



Royal HaskoningDHV (NL) – Project coordinator. experience in development of predictive tools (LCA and CO₂ foot printing)



KOAC•NPC (NL) – Knowledge partner on pavement behaviour and performance. and maintenance and rehabilitation strategies



Vejdirektoratet (DK) – Specialist in research. development and testing to provide reliable data on road related issues

Website: www.cereal.dk

1. Identification of general level of experience with CO₂ related tools in road projects
2. Inventory and assessment of existing tools
3. Potential user group
4. Desired results and scope of the tool
5. Specification of requirements for effective and long-term use

1. Very limited experience; only simple testing of tools
2. Plenty of tools available but very few used due to non-user-friendliness and request for too many and too complex input data
3. Candidate users are NRA's, contractors, consultants

4. Intended use targeted at optimisation of pavement design and maintenance strategies
5. Limited confidence in willingness of organisations to adapt regulations for actual application and embedment of tool **Carbon Road Map**

- Limited amount of input data
- Predefined maintenance treatments and strategies
- To be used internationally
- Open for adding user defined data on materials and equipment
- Option to refine calculations when accurate input information is available

- Carbon Calculator for road projects
- Easy-to-use in default mode
- Adjustment of most default settings when running in expert mode
- Sophisticated engineering calculations
- Application of existing tools and databases

- Focus on carbon footprint of a road project in North-Western Europe
- Use of existing databases and calculation rules per country
- Analysis based on long time horizon
- Simple emission assessment of connecting sliproads, bridges, tunnels, etc.
- Only construction and maintenance phase, not road user's phase

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Start Project Definition Construction Data Maintenance Overview Results

The Carbon Road Map

Click here for the 'user guide'



Click here for Project website

Reset 'information boxes'

Default

Next



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road **ERA** net **Tips**

- Complex projects can be broken down in separate runs of tool to be aggregated later
- Perform two runs when PC is used on slow lane and AC on other lanes
- Sets of different AC mixes can be entered via treatments

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- Carbon Road Map is easy to use for calculation of CO₂ impact
- Default data already available in tool or in report
- Part of database fed by LICCER
- New material data normally easy to retrieve
- New equipment data available from suppliers and manufacturers

- More PR, marketing and training is required for embedment of tool in each EU member state
- Start embedment at NRA level
- Make use of sustainability tools obligatory in tender processes

Thank you