Conférence Européenne des Directeurs des Routes
Conference of European Directors of Roads

EARN
Effects on **A**vailability of **R**oad **N**etwork

Research project funded under the CEDR Transnational Road Research Programme
CEDR Call 2012: Recycling - Road construction in a post-fossil fuel society

CEDR Call 2012: Recycling is a Transnational Road Research Programme organised by CEDR (Conference of European Directors of Roads). The funding partners for this programme are Denmark, Finland, Germany, Ireland, Netherlands and Norway.

Details	
Acronym:	EARN
Start:	January 2013
End:	December 2014
Budget:	€302.9k
Co-ordinator:	Cliff Nicholls, TRL, UK
Contact:	CNicholls@trl.co.uk
Partners:	University of Kassel, Germany University College Dublin, Ireland Dresden University of Technology, Netherlands Lagan, Ireland Shell, UK/Germany
PEB Project Manager:	Tom Casey, Ireland

Project summary

The project is designed to assess the effect that changes in durability of road materials due to the inclusion of reclaimed and secondary component materials in the manufacture of new road materials will have on the cost of the construction, both financially and with regard to the environment.

There is a need for engineers, particular the client's engineers, to understand the full implications of using reclaimed and secondary materials. Whilst efforts to make highway construction more sustainable are laudable, they must be effective over the longer-term and not be just reduced cost and/or environmental impact on the construction phase alone. If the use of such components in the mixtures does affect the serviceability or durability of the mixture, then any savings may be transitory.

The project will build upon existing knowledge, supplemented by limited site and laboratory studies, to develop a specific model to look at this issue and to provide indicatory values for use in the model. The existing knowledge will be extended with an extensive literature search on the times for construction and the relevant effects that determine the service lifetime of the different pavement layers. The site trials will look at mixtures with and without reclaimed asphalt, but will have to assess their durability from early-life properties. The laboratory trials will concentrate on combined effect of ageing and moisture damage on the performance of selected asphalt mixtures containing different proportions of reclaimed asphalt. All three strands will be fed into life-cycle analysis models to customise them for the affect of using alternative component materials on the availability of the network and their overall financial and environmental cost.