PROJECT PROFILE

Title	**Energy conservation in road pavement design, maintenance and utilisation (ECRDP)**
Contractor	Waterford County Council
Contact details	Ray Butler National Roads Design Office Tramore House, Pond Road Tramore, Co Waterford rbutler@thrdo.com
NRA Mentor	Ray Butler
Start date	Jan-07
End date	Jan-10
Status	On-going
Type of project	EC project: funded under the Intelligent Energy - Europe programme
Project reference	EIE/06/039/SI2.448265

Description	This project builds on the completed SAVE project "Integration of the measurement of energy usage into road design" (IERD) in which nine of the ECRPD partners were involved. The IERD project showed that 16% of the cost of constructing a road was energy cost and energy consumed by vehicles using the road is 16/17 times the construction energy. The ECRPD project is investigating the evaluation of energy conservation in pavement construction. It incorporates all activities associated with the pavement, including material supply, construction, maintenance, and vehicle operation over the service life of the road. The project will also identify and evaluate low energy materials used for road pavements such as cold and warm asphalt mixes.
Objectives	The objectives of the project are to examine the total energy used in the design and operation of a road scheme and to develop a methodology for introducing this as a parameter that can be used at the planning stage. In the IERD project the computer program JouleSave was developed to facilitate the evaluation of energy in all aspects of road construction and to evaluate the implication of the road construction on energy use of vehicles on the roads. In ECRPD a new software program will be developed to incorporate the energy implications of different maintenance regimes and will be applied to a number of roads in the EU to give a statistically reliable figure for potential energy savings. Low energy materials are being identified and evaluated.
Benefits	The project will help to minimise the total energy consumption during the construction and operation of a road network. The research can be used to identify areas where energy consumption can be reduced, eg, using low-energy pavement materials, modifying maintenance regimes, etc. It is hoped that the project will be used to encourage statutory authorities (EU and National Government) to include energy evaluation in all statutory EIS's for roads.
Outputs	The final report will include a methodology for evaluating the total energy consumption for the construction and operation of a road scheme over the life cycle. This can be used at the planning stage to help minimise energy consumption. A computer program will be developed to facilitate the energy computation.