

Draft Terms of Reference: Reducing transport noise and annoyance

Outline:

Motor vehicle noise has become quite pervasive and noise levels and annoyance have continued to increase. Although there has been considerable research and much progress has been made on the relationship between sound levels, noise and annoyance, approaches in use for predicting noise and annoyance do not always reflect the latest knowledge. The study will investigate and report on a policy framework for the management of road transport noise, contemporary approaches to forecasting traffic noise and annoyance and cost effective strategies for reducing such noise exposure.

Major tasks: The study will involve the following tasks:

1. *Transport noise.* Investigate existing sources of noise and the general extent of current and expected future problems of noise caused by road transport. This will encompass both 2 and 4 and more wheeled sources of road transport-related noise.
2. *Noise and Annoyance.* In the context of road transport, explore the relationship between sound, perception and annoyance. Identify existing and emerging techniques for predicting road transport noise and annoyance. This will include both current and emerging noise-prediction methods and software and their use in urban and rural (including mountainous) areas. Assess likely future levels of road transport-related noise exposure in urban and rural areas/mountainous regions and the likely changes in noise annoyance.
3. *Noise control measures.* Consider the extent to which noise control at source as well as improvements in infrastructure (e.g. by highways engineering and protective barriers) can be expected to reduce noise exposure and annoyance in urban and rural areas, especially at night time. Assess the typical cost effectiveness of different noise control and infrastructure measures.
4. *Conclusions.* Prepare a report that sets out current concerns, the outlook and a policy framework for the management of road transport noise, identifying contemporary approaches to forecasting traffic noise and annoyance and cost effective strategies for reducing such noise exposure.

Background/issues: More stringent motor vehicle and tyre standards and controls for new vehicles, have been introduced based on UNECE's WP29 World Forum on Motor Vehicle Standards. In-use motor vehicle noise performance is often specified by noise emission standards for the operation of motor vehicles on public highways. However, motor vehicle noise levels and annoyance have continued to increase due to increasing volumes of traffic, particularly in residential areas and at night; increasing proportions of heavy vehicles, especially trucks and buses; increasing speeds generally; and very noisy motorcycles and scooters. Further work is needed to: develop an urban driving cycle for automobile and motorcycle noise testing and study tyre noise under various road conditions. A reference report would be useful to co-ordinate the outcomes of research in different countries.

References, recent work: *Roadside Noise Abatement*, OECD RTR 1995; *Fighting Noise in the 1990s*, OECD ENV; US Washington State Department of Ecology: *Motor Vehicle Noise Performance Standards*.

Working Method and Expected timing: Advisory Group / Secretariat and possible Consultancy (subject to funding). The work could begin in 2008 and be completed in 2009.