

Briefing: Renewable Energy Noise Barriers

Task Brief One – Feasibility Stage

Introduction

This is the first task order in a series of task orders that will be offered to suppliers on the T-TEAR framework either by allocation or competition. This task order is being offered to all suppliers simultaneously by allocation.

The T-TEAR framework suppliers are invited to use their in-house resources, innovative companies in their supply chain and seek out new innovative companies in order to identify the best solutions available to them.

The primary objective of this series of task orders is to develop cost effective noise barriers to reduce road traffic noise and thereby improve the quality of life for communities located close to major roads. The secondary objective is to develop designs that achieve cost-effective low carbon energy production which could be sold and exported.

For this task order suppliers are encouraged to engage with organisations from different sectors in the UK, EU and perhaps beyond (including small and emerging businesses). This project requires the creation of new technical solutions and accelerated development of innovative technology.

Background

Environmental Noise Directive

The Environmental Noise Directive (2002/49/EC) was transposed into UK legislation by the Environmental Noise (England) Regulations 2006 (as amended) (SI 2006/2238). The Environmental Noise Directive requires, on a five year cycle: the determination, through noise mapping, of exposure to environmental noise from major sources of road, rail and aircraft noise and in urban areas (known as agglomerations); provision of information to the public on environmental noise and its effects; the adoption of Action Plans, based upon the noise mapping results, which are designed to manage environmental noise and its effects, including noise reduction if necessary; and the preservation of environmental noise quality where it is good, particularly in urban areas.

Under this process, Defra has identified a number of noise “hotspots” or Important Areas across the strategic road network where the 1% of the population that are affected by the highest noise levels from major roads are located; according to the results of the strategic noise mapping. The Highways Agency has a responsibility to

investigate Important Areas that fall on its network, and identify appropriate mitigation. In many cases, mitigation has been incorporated into the regular highways maintenance schedule. Examples include measures such as using a lower noise surfacing material when a highway running surface is scheduled for replacement. However, a number of sites remain where further mitigation is required. Most typically this is in the form of noise barriers.

Noise barrier: Noise reducing device, which obstructs the direct transmission of airborne sound emanating from road traffic, to be used along roads.

An initial area of focus

The M40 is a major north-south motorway in the centre of England, linking London with Birmingham. It passes through several communities of varying sizes and the Chilterns Area of Outstanding Natural Beauty.

There are a number of identified stretches of the M40 between Junction 3 (Loudwater) and Junction 8 (Wheatley) where the feasibility of noise barriers has been explored. The M40 Chiltern Environmental Group (M40CEG) is campaigning for noise barriers to be installed at these locations.

The Highways Agency is working in partnership with M40CEG on proposals for noise barriers that could offset production and installation costs by means of generating electricity through use of renewable energy technologies.

Project Objectives

In order to increase the potential number and benefits of noise barriers across the Highways Agency network, there is a need to develop barriers that have greater cost effectiveness. The primary objective of the competition is to develop cost effective noise barriers to improve community quality of life through reduced road traffic noise. The secondary objective is to develop designs that achieve this cost-effectiveness through low carbon energy production which could be sold and exported.

With an initial focus on the M40, the Highways Agency has chosen to explore noise barriers that will fulfil the project objectives

Most research to this point has focused on incorporating photovoltaic infrastructure into noise barriers, and this is anticipated to be the most common solution proposal.

However, the Highways Agency would also support submissions from competition entrants proposing alternative energy generation types.

Deliverables

Deliverables for Task One Feasibility Stage:

- Task 1 - Phase 1 Feasibility stage (1st December 2014 to 31st January 2015). At the first competition stage, submissions are invited from competitors outlining proposals for noise barriers which mitigate road traffic noise and incorporate infrastructure for energy generation, demonstrating a route to market for their solution. Phase 1 would be funded to the value of £10,000 per T-TEAR supplier to run the competition

- A design concept, drawings and a written report supporting each individual noise barrier proposal

- Estimate of the unit cost of the final product and associated maintenance over 40 year design life will be required. For those components with a lifetime shorter than this period, the costs of replacement, as necessary, will need to be included within the estimate

At the feasibility stage, it is hoped designers consider alternative solutions and that new and innovative designs will be presented by suppliers. Therefore this document has been written to avoid prescriptive requirements that may restrict the design solution. It should be recognised that the intention of this series of task orders is to develop a product that can be installed at sites on the M40 and potentially other parts of the UK road network on a relatively short timescale. Therefore, any legal, production and manufacturing concerns must be considered from the initial design stages; designs that cannot conform to regulations and standards currently in place regarding construction on UK motorways cannot be accepted even if they demonstrate strong benefits.

Evaluation Rules

The design concepts, drawings, reports, estimates for production costs and maintenance costs produced for this task order will be evaluated to decide which proposals will be taken forward to the next phase of the project. Further details of the next phases for this project are given at Annex A.

Proposals will be evaluated separately by Highways Agency colleagues, representatives of the M40CEG and Wycombe District Council and South Oxfordshire District Council before being combined as a single score at an assessment panel consensus meeting. All assessment panel members will complete a Conflict of Interest form.

The Agency will then evaluate the designs which will be ranked based on the combined quality and cost score. The top scoring proposals that can be funded within the budget available will be progressed to Phase 2.

The approach for evaluating proposals is outlined below.

The assessment panel will use the marking system as shown below, to award marks for approach or evidence, as relevant to the sub-criteria in the following table.

Scores are on a scale of 1 – 10, with a score of 5 representing an acceptable level.

Score

Weak

Reason
The proposal fails to demonstrate an adequate understanding of the competition objectives and fails to address adequately the risk management issues. There is little evidence that the proposal has been influenced by experience on other projects.

Mark
1-4

Acceptable

The proposal demonstrates an adequate understanding of the competition objectives; it addresses the success factors and risk management issues to an acceptable standard. There is an adequate level of evidence that the proposal has been developed as a result of successful experience on other projects.

5-7

Good

The proposal demonstrates a good understanding of the competition objectives; it addresses fully the

8-9

	<p>success factors and risk management issues and provides for delivering continuous improvement over the life of the framework. There is substantial evidence that the proposal has been developed from other projects using formal continual improvement processes.</p>	
Excellent	<p>The proposal has been tailored specifically to deliver the competition objectives, and deals comprehensively with the risks to maximising performance against key performance indicators and to delivering continuous improvement. There is substantial evidence that the approach has been developed using continual improvement processes, which are routinely used to develop approaches and deliver the objectives successfully on all projects.</p>	10

Each proposal should be costed for supply and erection only of a 4 metre high barrier 500 metres long*. The lowest proposal cost will be given a score of 100. The score of other competing proposals will be calculated by deducting from 100 one point for each full percentage point by which their price is above the lowest price. Benefits of noise mitigation, energy generation, longevity, ease of erection, etc., should be covered appropriately in the quality submission.

**(Excluding: preliminaries, traffic management, site clearance, road restraint systems, drainage, earthworks, pavements, kerbs and footways, road lighting and signs, motorway communication and technology, landscaping and ecology, other costs and risk)."*

The overall quality score and the finance score will be combined in the ratio 80:20 applied to the quality and financial scores respectively. The total will be expressed to one decimal place. This combined score produces a ranking

from the Task One Feasibility Stage. The Highways Agency follows principles as set out in the EU Remedies Directive of 2006 (with Amendment 2009) to provide *written feedback to all suppliers* who have submitted proposals in competition. In order to be helpful to suppliers the Agency exceeds the demands of the Directive in respect of the level of detail that is issued. No more information is made available in addition to this and we will not offer face-to-face de-briefings.

Contacts:

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