Scottish Hydro Electric Transmission Ltd.

NIC ISP : NeSTS - New Suite of Transmission Structures

14 April 2012

Question 1. In the specific requirements you have highlighted that the project will fulfil the requirement for a specific piece of new equipment – please can you explain what new equipment the project will be creating? This isn't clear from the information provided in the pro forma.

Answer
At present in the UK the industry has adopted a number of support towers that are well established and proven, the physical design of these towers were established to best utilise the construction techniques, types of insulators and conductors that were available in the 1930s and 40s.

This project seeks to redesign, develop and demonstrate the basis of a suite of full scale towers to take full advantage of the materials and individual components (in particular insulators and conductors) that are available now or in the very near term. We expect these new towers to be lower profile, designed with the impact of climate change, visual amenity, access, operation and maintenance in mind.

To answer the question directly, the new piece of equipment will be a new set of full scale towers that will be tested and proven for UK operators to utilise.

Question 2. We understand that previous innovation funding has been used to test aspects of tower design. Given these previous trials, what is the specific risk in this project that prevents you funding it though your price control allowances?

Answer
Previous funding has been used to explore the design of specific components of an overhead transmission structure in isolation e.g. conductors and insulators; this project will pull together these elements to create a new design and deploy a full scale suite of transmission structures that can be tested to demonstrate robustness and reliability.

There are a number of risks associated with pulling so many new components together into one solution. This project seeks to create a practical demonstrator to allow the risks and practical considerations of combining individual components to be fully assessed and understood, building the confidence necessary to allow this to be deployed as business as usual.

It is the intention that most of the costs are funded through price control allowance with those elements associated with the incremental risk, solution development, monitoring and learning dissemination being funded through NIC. The type of risks and associated mitigation that this will allow us to understand include amongst others: noise, practical construction considerations, EMF considerations, visual impact, identification of new failure modes etc.

Question 3. As you know, under the 'Project Partners and external resourcing/funding' criterion, you are required to provide evidence of the processes that have been followed and the rationale for selecting BOTH (i) participants and (ii) ideas for the project.

Answer

Throughout our business we are in regular consultation with a range of stakeholders both in formal engagement sessions and more informal dialogues; during this process we meet many of the potential participants and identify new innovative ideas and approaches. In addition we have a number of specific organisation and mechanisms that allow us to capture potential partners and ideas. These include:

- Energy Innovation Centre (EIC focussing on SME and independent innovators);
- ENA LCN Fund Industry Collaboration Platform;
- Academic partnerships;
- Bilateral Stakeholder engagement with Vendors;
- Attendance at a range of conferences and other networking events;
- Stakeholder engagement more broadly across our customer base;
- Internal innovation generating workshops and initiatives; and
- Our existing IFI programme partners and ideas.

Through these mechanisms we record potential innovative ideas and associated partners for either participation or delivery.

In preparation for our ISP submission we hold selection events where a range of business experts assist in the evaluation of the ideas that have emerged from engagement or have reached a suitable TRL in our IFI and NIA programme. In this workshop we consider factors such as:

- Business needs and gap analysis;
- Existence of duplication with previous projects;
- Size and value of the project necessary to demonstrate (NIA or NIC);
- Applicability of the idea to the NIC criteria;
- Timeliness of the solution in relation to the challenges the industry and our stakeholders face;
- Replicability and relevance of the solution across the UK;
- Technical readiness; and
- Value assessment.

We utilise the output of these workshops to present a short list to our Innovations Steering Board (ISB) from which our strongest bids are put forward for submission to the NIC.