

ISP Q&A: 20 April 2015

Q1: Under criterion (a), please provide some quantification for how the project would deliver benefits that outweigh the costs.

A1: May I address this key question from the two perspectives of the projects: 1) the ANGLE-DC as a stand-alone project, and 2) in the context of accelerated renewable connections, hence the wider benefits from this demonstration:

1. The ANGLE-DC Project

The current estimation of the project cost is based on the on-going engagement with potential suppliers and other electricity licensees. The overall project cost is currently estimated at £15m, with funding request of £13.5m- this figure will serve the purpose at ISP stage. Further meetings have been arranged with potential partners and suppliers to ensure a well-informed funding request in the final submission. From the initial bench mark studies carried out by an independent party, we have reasons to believe that this novel reinforcement means could achieve savings in the order of £1-3m. The lifecycle cost saving is achieved primarily by the reduction in wider network losses due to the MVDC optimisation of power flows. We are aiming to further develop and examine the costs and losses for the potential full submission.

2. The wider benefits

May I restate the main purpose of this project, in line with the spirit of NIC, will not stop at this particular application (in ANGLE-DC), but will add value to strategically unlocking the potential of existing network assets and facilitating competitions in the supply chain of power electronic devices to make Medium DC technology a valid option for network reinforcement and renewable connections:

- Demonstration of a reinforcement alternative for areas with combined voltage, thermal and fault level issues
- Reduced environmental impact by avoiding the construction of new circuits
- Accelerated renewable network access

From the studies carried out by Scottish Enterprise ([feasibility study](#)), substantial benefits (by reduction of capital costs, and over £1billion) could be realised if the technology is matured and de-risked sufficiently, as pointed out at P.5 of the ISP document. From that perspective, the project cost is well over-weighted compared with the benefits of ANGLE-DC.

In summary, the initial studies demonstrated obvious benefits (and well outweigh its costs) for ANGLE-DC as both a standalone demonstration project and as a project unlocking its potential to facilitate a low carbon economy in the wider context. It has been recognised that the cost and benefits will remain as one of the key questions in the detailed proposal development, subject to the approval to proceed, and measures are in place to:

1. Continue formal/informal engagements with potential stakeholders/suppliers to have a well-informed and up-to-date information on the key component cost;
2. Explore the creditable ways to reduce the cost of ANGLE-DC delivery without compromising the quality;

So that maximum value for investment can be achieved for our customers.