

Network Innovation Competition Full Submission

Supplementary Answer Form

Tick if this answer is Confidential: ☐

Tick if this answer has been provided verbally: ☐

Project code:	SSEEN01	Question Number	30
Question date	10 September 2013	Answer date	12 September 2013
Submission section question relates to	I think they are meaning things like, test regimes, RDS design and architecture, test regimes, commercial arrangements etc.		
Topic			
Question	Please clarify how this project will build on the knowledge gained at existing facilities, such as Teshmont (Canada) or at manufacturer's facilities as mentioned in the submission?		
Notes on question			
Answer	<p>The Real Time Simulator (RTS) facilities built by a number of utilities, such as those in Canada and China are primarily built as tools for the on-going study of existing HVDC systems and planned HVDC systems on their AC transmission networks. These schemes can be characterised as multi-infeed systems, i.e. point-to-point schemes terminating at a single sub-station or at sub-stations in close proximity. The work done at these facilities has demonstrated the usefulness of RTS facilities to the owners as a tool for studying the operational behaviour of their HVDC schemes.</p> <p>Individual HVDC manufacturers use RTS facilities to prove their control and protection software and its hardware implementation prior to shipping to the field for commissioning tests and commercial operation of the HVDC converter stations. Although examples exist of the testing of multiple vendors' equipment at a common RTS facility, this is not the normal practice in the industry. Crucially this will be removed from the factory when the systems are installed in the field and will not be available for studies once the system is operational.</p> <p>The MTTE will take both of these uses of RTS facilities one stage further. Building on the experience gained from the conventional uses of RTS, the MTTE will provide a facility for anticipatory studies of multi-infeed, multi-terminal and multi-vendor systems, which have not been studied before. By using replica panels from individual vendors, the most realistic operational scenarios can be studied at the MTTE to evaluate potential adverse interactions. The strength of</p>		

	<p>the MTTE is its ability to anticipate both planning and operational issues related to multiple HVDC schemes, including embedded links, interconnectors and OFTOs.</p> <p>We will engage with both research establishments and vendors to ensure that we learn from them in both the design of the MTTE building and its operation. This could include development of test regimes, study design, learning capture and where appropriate the development of commercial arrangements.</p> <p>In addition it will provide a robust training environment for Transmission Licensees' engineers and a unique facility to research new control concepts and new HVDC components in a real-time environment.</p> <p>The principal benefit to the electricity consumers on the GB network is the de-risking of these multiple complex transmission projects, whilst reducing their costs, so that remote renewable energy sources can be accessed without impacting on the security of supply of the network.</p>
Attachments	N/A
Verbal Clarifications (Consultants)	N/A