Electricity Network Innovation Competition Full Submission

Supplementary Answer Form

Project: Black Start from Distributed Energy Resources

Tick if this answer has been provided verbally: ☐

Project code	ESOEN01	Question Number	9
Question date	9 August 2018	Answer date	13 August 2018
Submission section question relates to	2		
Topic	Innovative		
Question	At what scale have DDG power islands been demonstrated to your knowledge in GB and how does this project compare in scale.		
Notes on question			
Answer	There are existing arrangements in GB that facilitate the operation of Power Islands in the tens of MW scale. For example, Shetland is operated as an isolated power system by SHEPD and the Western Isles De-Synchronised Island Management process (STCP 06-2) provides for the operation of a de-synchronised Power Island following an unplanned, or planned event. At a smaller scale, many customers have the ability to operate independently of the grid, typically using generation that is part of an industrial process or diesel generators as an emergency backup supply. There is ongoing research and development into the microgrid concept, which often includes Power Island operation as an objective. All existing examples are on defined areas of network that have been designed and built with the required capability, with the necessary generation resources and the required control and communications infrastructure. The existing examples also have a simple organisational structure, typically with a single entity being responsible for the critical generation resources and operation of the Power Island. The project will examine how to achieve a new capability with DER and areas of network		

	that were not designed to operate as a Power Island. We will focus on the delivery of a Black Start service, which includes restoration of a defined area plus energisation beyond the initial area, including possible energisation upwards to the transmission network. Thus, the intended function is different from existing examples. There are also significant differences in terms of the organisational, commercial and regulatory frameworks where Black Start from DER will require interaction between multiple industry participants to deliver the approach. The case studies identified in our bid proposed Power Islands from tens to hundreds of MW. However, we are investigating the potential to use aggregated DER as an alternative to the existing providers of Black Start services, which are typically >500 MW. Thus, the project is proposing to examine Power Islands that are very different and potentially much larger than existing examples in GB. The live trials will support this investigation but the MW size of the trials themselves will be limited by what is practical and cost effective.
Attachments	