

*LCN Fund Full Submission*  
**Supplementary Answer Form**

Tick if this answer is Confidential:

Tick if this answer has been provided verbally:

Project code:	SSET204 – PATHS	Question Number	SSEP024
Question date	27 <sup>th</sup> September 2012	Answer date	2 <sup>nd</sup> October 2012
Submission section question relates to	Section 2		
Topic	Project Description		
Question	Please explain the role of the ANM scheme in this project.		
Notes on question			
Answer	<p>Central to the PATHS project is the effective management of energy flows on the electricity distribution network. To manage this, there is a need to forecast, monitor and manage the operation of a range of devices, to ensure that the network is operated safely and securely. A simple illustration of the process is:</p> <ol style="list-style-type: none"> <li>1) Use a 24hr weather forecast to estimate wind generation output</li> <li>2) Estimate demand at the primary substation, based on the same day the previous week</li> <li>3) Compare the two and identify where the network will become constrained</li> <li>4) Schedule the electrolyser to operate during this period.</li> <li>5) Monitor in real time to ensure that the system is operating within defined parameters.</li> </ol> <p>This logic is the core of what the ANM scheme provides. As we move through the operation and optimisation phase of the project, we will add further steps into this system to account for a range of factors. These will include contractual obligations, commercial rules (operating times), physical parameters (ramp rates, run times) and enhanced monitoring (real time</p>		

	<p>constraint monitoring).</p> <p>To achieve this functionality, we need an Active Network Management system. This is a bespoke system, which interfaces with our network control systems, data historians and connected devices. We have installed a number of these across the SSEPD network and are transferring the deployment of these for 'constraining operation' (monitoring the network and sending signals to generators to reduce output) to business as usual.</p> <p>Typically the system is physically deployed on its own servers and runs software specifically for this application. We intend to procure the phase 2 ANM system through competitive tender, so can not state exactly what the physical solution will be. The software will be highly configurable, to make the implementation of new rules and operating parameters straightforward.</p> <p>The learning from the ANM scheme will be highly transferrable and will build on learning from other projects. The implementation of commercial and contractual rules is a new component of this project, but is transferrable across a range of network service devices (thermal stores, batteries, compressed air).</p> <p>To ensure we understand the system to be procured, we have planned to engage next with all stakeholders, define our full range of requirements and most importantly, to specify a system which allows us to perform all of the trials required to produce transferrable and robust learning. We anticipate that we will be able to share sufficient learning, guidance and specifications to allow other network operators to readily deploy this solution.</p> <p>The budget allowed for this activity includes all of the associated works (communications network, integration to existing systems, licensing, support) and is based on our experience of other projects and the expected reductions from competitive tendering. Through the work of the Smart Grid Forum Workstream 3, it has been established that ANM schemes will be widely deployed by 2020 and delivery costs will have significantly reduced.</p> <p>We attach for reference the supporting material on the phase 1 ANM system which we presented at the bilateral meeting.</p>
Attachments	
Verbal Clarifications (Consultants )	