

LCN Fund Full Submission

Supplementary Answer Form

Tick if this answer is Confidential:

Tick if this answer has been provided verbally:

Project code:	NGT203	Question Number	15
Question date	17 September 2013	Answer date	19 September 2013
Submission section question relates to	2: Project Description		
Topic	Analysis		
Question	Please confirm that the post trial analysis will include comparison of the methods with other methods of obtaining DSR.		
Notes on question			
Answer	<p>We can confirm that the post-trial analysis will include comparison of the ACE methods with other methods of obtaining DSR.</p> <p>The ACE project will produce a tool to compare the costs / benefits from the application of different methods of DSR to address localised network constraints under different localised conditions. This assessment will be based upon the learning from the innovative trials proposed by the ACE Project, together with the published learning from other successful DSR trials that have been undertaken in the UK.</p> <p>The diagram below shows the inputs / outputs of the proposed tool.</p> <pre> graph LR IN[INPUTS * Network data * Social Variables * Load forecasts * Generation forecasts * Probabilistic data] --> ACE[ACE DSR Diagnostics Tool] DSC[DSR propositions/characteristics (from ACE trials and other projects)] --> ACE ACE --> PSO[DECISION SUPPORT OUTPUTS Power-flow sensitivity: * Future load profiles * Location of future constraints * Constraint types * Years to reinforcement * Optimum locations for DSR] ACE --> DDO[DSR Diagnostics: * Optimum DSR type * DSR profile * Resultant load profile * Cost of DSR * Years to reinforcement with DSR applied] PLE((Proprietary Load Flow Engine (such as IPSA2, DINIS, etc))) <--> ACE </pre> <p>The tool for network planners will forecast network thermal constraints and potential voltage issues and estimate the potential benefit available by</p>		

	<p>applying different types of DSR in a particular geographic area, given the mix of customer types connected to the network and the characteristics of the network constraint. It will be developed and calibrated using the results of the ACE DSR trials and designed to accommodate the output from other DSR trials (tariff based and non-tariff based) in order to consolidate all DSR learning and make a more effective all-inclusive output for use by DNO network planners. The available learning from successful DSR trials will be built into the tool as it is developed.</p> <p>The DSR diagnostics and forecasting tool will contain the following functionality:</p> <ul style="list-style-type: none"> • It will standardise the approach used by strategic planners and technical designers to more accurately identify and analyse future network constraints. • It will output load profile forecasts based upon the types of neighbourhood demographics and their forecast take up of LCTs. • Algorithms will step these forecasts through a power flow tool to determine the location and timing of potential network constraints. • The output will identify the points on the network where DSR could be used as a solution to resolve these constraints. • The tool will provide a probabilistic decision support tool for DNOs by providing a method to assess the characteristics of the potential DSR available (i.e. its shape, duration, speed of deployment, potential frequency of use at different times of day and during different seasons, etc.). • It will include the degree of confidence with which DSR can be applied, based upon the types of neighbourhood demographics at a particular network node and knowledge of how the technical and social variables interact. <p>The tool will be complementary to the power-flow tools currently in use by DNOs such as IPSA2 and DINIS, etc. and we will develop it using open source software. It will undertake the load modelling and simulation of DSR characteristics and call upon / instruct the DNOs' existing power-flow tools to undertake specific network modelling when required to test the various options that it generates.</p> <p>The success of the project will be the extent to which DNOs adopt the software and so we will consult with DNOs to develop standardised interfaces and data structures to ease its implementation into a business as usual tool / methodology.</p>
Attachments	
Verbal Clarifications (Consultants)	