

# *LCN Fund Full Submission*

## *Supplementary Answer Form*

Tick if this answer is Confidential: ☐

Tick if this answer has been provided verbally: ☐

Project code:	WPD-T2-04	Question Number	WPD031
Question date	20.09.2012	Answer date	24.09.2012
Submission section question relates to	2		
Topic	Project Description		
Question	Please explain how it is envisaged that a "probabilistic approach" will be applied to the fault level calculations in Method Alpha.		
Notes on question			
Answer	<p>Method Alpha will enhance the fault level assessment process that is used by distribution network operators to provide customers' improved demand and generation connections.</p> <p>Method Alpha contains two elements that will allow DNOs to be more flexible in provision of customers' connection offers:</p> <p>The first element of Method Alpha involves the detailed modelling of 11kV networks. At present the entirety of 11kV data is not populated within DNO power system analysis tool used to assess fault levels. 11kV data is sometimes included on a case by case basis, but only small sections of the network. By importing all the 11kV network data into the power system analysis tool, and creating a new simulation-ready network model, we will be able to respond more quickly, and accurately, to customers' connection applications.</p> <p>The second element of Method Alpha involves forecasting future generation and load connections when considering a connection design. The uncertainties of size, type and location of connections, mean that modelling with a "probabilistic approach" is appropriate. In line with DECC's Pathways 2050, this approach will consider the range of DG types and a variety of demand connection types. The model will allow us to create a number of forecast connection scenarios. The output for each forecast scenario will be the magnitude of fault current contribution (for a particular substation location) and a probability of the fault current contribution occurrence. This forecasting process will then be combined with new Fault Level Indices (FLIs), allowing us to identify potential future fault level 'hotspots' in the network.</p> <p>This will allow DNOs to respond proactively, ensuring that any delays and costs associated with network reinforcement are not a barrier to</p>		

	<p>customers' connections.</p> <p>Method Alpha will implement a probabilistic approach for power system analysis of generation integration to the network, maximising its utilisation. However the electrical and safety protection of the network will continue to be designed using a deterministic (worst-case) approach.</p> <p>The outcome of this Method will be a number of transferrable tools that will allow DNOs to enhance their present assessment processes and adopt a "probabilistic approach" when assessing future fault level contributions to the network.</p>
Attachments	
Verbal Clarifications (Consultants )	