

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

Tick if this answer is Confidential:

Tick if this answer has been provided verbally:

Project code:	NPGT202/1	Question Number	NPG016
Question date	06/09/12	Answer date	10/09/12
Submission section question relates to	Section 4		
Topic	Evaluation Criteria		
Question	Can NPG provide a clear statement of what the 925/944MW figures represent (page 19), and describe how these figures were reached?		
Notes on question			
Answer	<p>The 925MW and 944MW figures represent the amount of capacity that can be released in 2030 by Method 1 and Method 2 respectively. Put another way, by 2030, we estimate that Method 1 would allow 925MW of distribution network reinforcement to be deferred and Method 2 would allow 944MW of distribution network reinforcement to be deferred.</p> <p>These figures were calculated using the model produced for Workstream 3 of the Smart Grid Forum. This model was used to produce the recent report assessing the impact of low-carbon technologies on GB's distribution networks (EA Technology et al, July 2012, <i>Assessing the Impact of Low Carbon Technologies on Great Britain's Power Distribution Network</i>, <a href="http://www.ofgem.gov.uk/Networks/SGF/Publications/Pages/index.aspx">http://www.ofgem.gov.uk/Networks/SGF/Publications/Pages/index.aspx</a>). A detailed description of the model and the assumptions it includes are contained in this report. We would be happy to provide further details on the model, if helpful.</p> <p>The model compares the costs and impact on distribution network headroom of a range of options for releasing capacity (including DSR, EES and other smart and conventional investment types). It chooses the most cost-effective options for managing the demand increases associated with the</p>		

uptake of low-carbon technologies. These demand increases are based on DECC's scenarios for the uptake of low-carbon technologies produced for Workstream 1 of the Smart Grid Forum.

We used the model as follows to calculate capacity released:

- We inputted a cost of DSR of £25/kW for Method 1 and £10/kW for Method 2 into the model. These costs are based on the analysis set out in Section 3 of the full submission document. To summarise, we assumed flexibility costs £35/kW in line with National Grid's estimate of current STOR costs. We then scale up this cost to reflect the reduced certainty associated with DSR as a means to release capacity compared to network reinforcement. We add estimates of the transaction costs associated with purchase of DSR. We then make assumptions on the sharing of the costs of DSR between each participant in each set of commercial arrangements. The costs of £25/kW for Method 1 and £10/kW represent the costs to the DNO of DSR once sharing with other parties has been taken into account.
- The model already contains estimates of the costs and effectiveness of EES.
- We ran the model to see how much capacity was released from DSR and EES given these costs, under DECC's Workstream 1 demand growth scenarios.
- We then looked at the types of network that will be covered by the trial. The HV network covered by the GBFM trial comprises the following network types:
  - Urban, High, Underground, Radial;
  - Suburban, Medium, Mixed, Radial;
  - Suburban, Medium, Underground, Radial; and
  - Rural, Low, Overhead, Radial.
- We only included the results from the Workstream 3 model that related directly to these feeder types.

This suggests that the following quantities of capacity would be released annually through DSR and EES through Method 1 and Method 2.

	Method 1 (MW)	Method 2 (MW)
2020	42	48
2030	925	944
2040	655	655

Attachments	
Verbal Clarifications (Consultants )	