

*LCN Fund Full Submission*

## *Supplementary Answer Form*

Tick if this answer is Confidential: ☐

Tick if this answer has been provided verbally: ☐

Project code:	WPDT2002	Question Number	2
Question date	25 <sup>th</sup> August 2011	Answer date	30 <sup>th</sup> August 2011
Submission section question relates to	Proforma 4 (b) Appendix F		
Topic	Cost Benefit		
Question	Can WPD provide the calculation that takes us from the assumptions to a figure of £659m as expected saving of HV reinforcement?		
Notes on question			
Answer	<p>The Calculation is based on the following:</p> <ol style="list-style-type: none"> <li>1. 50% of alternative techniques would be used instead of traditional reinforcement</li> <li>2. The total cost of 11kV reinforcement is £3.7 bn based on the 50% low carbon technology penetration scenario in the ENA/Imperial College paper.</li> <li>3. The estimated % uptake, % effectiveness and % cost saving for each alternative intervention technique as set out in the table in Appendix F.</li> </ol> <p>For each alternative technique a gross % saving is calculated as the product of the % uptake, % effectiveness and % cost saving. This gives the following values :</p>		

	<table><tr><th>Alternative to Traditional Reinforcement</th><th>% uptake</th><th>% Effectiveness</th><th>% cost savings</th><th>% Gross Savings</th></tr><tr><td>1. Dynamic Asset ratings</td><td>60%</td><td>50%</td><td>80%</td><td>24%</td></tr><tr><td>2. Automated Load Transfer</td><td>20%</td><td>100%</td><td>50%</td><td>10%</td></tr><tr><td>3. Meshed Networks</td><td>5%</td><td>100%</td><td>30%</td><td>2%</td></tr><tr><td>4. Battery</td><td>10%</td><td>100%</td><td>10%</td><td>1%</td></tr><tr><td>5. DG</td><td>5%</td><td>50%</td><td>50%</td><td>1%</td></tr><tr><td>6. DSM</td><td>20%</td><td>50%</td><td>50%</td><td>5%</td></tr><tr><td>Total</td><td>120%</td><td></td><td></td><td>43%</td></tr></table> <p>In order to normalise the % gross savings, the aggregate of the % Gross savings is then divided by the aggregate of the % uptakes. This gives an overall gross savings for all the alternative techniques of 35.625%</p> <p>Finally this overall gross savings value is multiplied by the % of reinforcements for which these alternative techniques would be used (50%) and the total costs of reinforcement under the 50% penetration scenario (£3.7 bn) i.e.</p> <p><math>35.625\% * 50\% * £3700m = £ 659m</math></p> <p>The % uptake, % effectiveness and % cost saving values used in this process are WPD estimates. The rationale behind these estimates are set out in the table in Appendix F. The value of these estimates will be validated in FALCON during the trialling of each intervention technique.</p>	Alternative to Traditional Reinforcement	% uptake	% Effectiveness	% cost savings	% Gross Savings	1. Dynamic Asset ratings	60%	50%	80%	24%	2. Automated Load Transfer	20%	100%	50%	10%	3. Meshed Networks	5%	100%	30%	2%	4. Battery	10%	100%	10%	1%	5. DG	5%	50%	50%	1%	6. DSM	20%	50%	50%	5%	Total	120%			43%
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Verbal Clarifications (Consultants )																																									