

Innovation Competitions - Full Submission

Supplementary Answer Form

Tick if this answer has been provided verbally: ☐

Project code	ENWT206	Question Number	Q46																																																									
Question date	21 October 2014	Answer date	23 October 2014																																																									
Submission section question relates to	Resubmission																																																											
Topic	Benefits case																																																											
Question	<p>We note that your resubmission included a benefits case for applying Is-limiters solely to protect cables. We also note that the analysis for this use-case revealed that more cabling would benefit from the Is-limiters than had been assumed in the original benefits case you presented. Can you provide a revised overall benefits case including the use of Is-limiters to protect switchgear and cable, based on the new analysis of the length of cabling that would benefit.</p>																																																											
Notes on question																																																												
Answer	<p>The table below shows the financial benefits of the Is-limiter protecting switchgear and cables on the HV network, both in Electricity North West and GB contexts. These revised net benefits are calculated in exactly the same way as the original net benefits tables (see Appendix A1 in the original Full Submission) with the exception of using the revised lengths of cable at risk defined in the new analysis (see Appendix A1 in version 2 of the Full Submission) created following the second bilateral Expert Panel session.</p> <table border="1" style="width: 100%; border-collapse: collapse; background-color: #e8f5e9;"> <thead> <tr> <th colspan="8">Financial benefit (£m) at High Voltage Network Level</th> </tr> <tr> <th rowspan="2">Scale</th><th rowspan="2">Method</th><th rowspan="2">Method Cost</th><th rowspan="2">Base Case Cost</th><th colspan="4">Benefit</th></tr> <tr> <th>2020</th><th>2030</th><th>2050</th><th>Total</th></tr> </thead> <tbody> <tr> <td rowspan="2">Post-trial solution (individual deployment)</td><td>Is-limiter at 6.6kV</td><td>████</td><td>£1.62</td><td></td><td>████</td><td></td><td rowspan="2">████</td></tr> <tr> <td>Is-limiter at 11kV</td><td>████</td><td>£0.93</td><td></td><td>████</td><td></td></tr> <tr> <td rowspan="2">Electricity North West scale</td><td>Is-limiter at 6.6kV</td><td>████</td><td>£1.62</td><td colspan="3">████████████████</td><td>████</td></tr> <tr> <td>Is-limiter at 11kV</td><td>████</td><td>£0.93</td><td colspan="3">████████████████</td><td>████</td></tr> <tr> <td>GB rollout scale</td><td>Is-limiter at 11kV</td><td>████</td><td>£0.93</td><td colspan="3">████████████████</td><td>████</td></tr> </tbody> </table> <p>The cable lengths at risk used in the revised financial benefits table above are 7.66 km in a 6.6kV primary network and 3.01 km in an 11kV primary</p>			Financial benefit (£m) at High Voltage Network Level								Scale	Method	Method Cost	Base Case Cost	Benefit				2020	2030	2050	Total	Post-trial solution (individual deployment)	Is-limiter at 6.6kV	████	£1.62		████		████	Is-limiter at 11kV	████	£0.93		████		Electricity North West scale	Is-limiter at 6.6kV	████	£1.62	████████████████			████	Is-limiter at 11kV	████	£0.93	████████████████			████	GB rollout scale	Is-limiter at 11kV	████	£0.93	████████████████			████
Financial benefit (£m) at High Voltage Network Level																																																												
Scale	Method	Method Cost	Base Case Cost	Benefit																																																								
				2020	2030	2050	Total																																																					
Post-trial solution (individual deployment)	Is-limiter at 6.6kV	████	£1.62		████		████																																																					
	Is-limiter at 11kV	████	£0.93		████																																																							
Electricity North West scale	Is-limiter at 6.6kV	████	£1.62	████████████████			████																																																					
	Is-limiter at 11kV	████	£0.93	████████████████			████																																																					
GB rollout scale	Is-limiter at 11kV	████	£0.93	████████████████			████																																																					

	<p>network. The table shows the split between the two HV voltage levels on the Electricity North West network, but only 11kV in the GB rollout scale. The ratio of 6.6kV to 11kV network in Electricity North West is 52% to 48%, whilst in the GB network the 6.6kV network is less than 10%. So the GB rollout scale applies the 11kV network assumptions only.</p>
Attachments	