*Innovation Competitions - Full Submission*

*Supplementary Answer Form*

Tick if this answer has been provided verbally:

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| Project code | ENWT206 | Question Number | Q6 |
| Question date | 31 July 2014 | Answer date | 4 August 2014 |
| Submission section question relates to | Section 2 Project Description | | |
| Topic | Trial Sites | | |
| Question | 2.3 – Scale and selection, Pgs 11 & 12 and Appendix B2  Trial Sites  What percentage of all substations are thought to be represented by the AP/Is and FCL Trials? ie how transferable will the technical solutions be from the selected trials to other locations? | | |
| Notes on question |  | | |
| Answer | The Trial sites have been selected to be representative of the size and types of urban substations across all of the GB DNOs. We approached the site selection for the Trials to firstly show (and record) how the fault level mitigation techniques can be installed across a range of substation ages and equipment types in order to deliver installation methodologies for transferability; and secondly show how the fault level mitigation techniques operates in conjunction with the existing equipment to deliver operating data and methodologies.  During Project delivery, the site selection methodology will be further refined and peer reviewed by Parsons Brinckerhoff to ensure this. Particular care will need to be taken to ensure that the learning and conclusions from the Trials could be applied to substations in interconnected networks, as well as in the more common radial networks.  The Trials will provide the information for DNOs to choose which fault level mitigation technique would be applicable to manage a fault level issue. We have not analysed the percentage of substations that the techniques in FLARE would be applicable to.  For the Is-limiter there are two recommended installations: one across a bus-section and one in a transformer incomer circuit. Both of these installations are being trialled and the methodologies to be produced can be used by any DNO to install the equipment at any substation with a bus-section or transformer incomer circuit.  For Adaptive Protection it is the type of protection equipment which reflects the transferability. In DNO networks there are three types of protection (electromechanical, static electronic and numerical) and we are trialling the technique on all three types. This will give other DNOs the methodoly to apply Adaptive Protection across their range of relays.  From the above ENWL is confident that these techniques can be transferred to a siginifcant proportion of other DNO networks. It is expected that the learning and conclusions from the trials would therefore be relevant to all affected substations. | | |
| Attachments |  | | |