

*Electricity Network Innovation Competition Full Submission*  
**Supplementary Answer Form**

**Project: REVISE**

Tick if this answer has been provided verbally: ☐

Project code	WPD/EN/NIC/05	Question Number	4
Question date	09 August 2018	Answer date	13 August 2018
Submission section question relates to	Proforma Section 2		
Topic	(b) Provides value for money to electricity customers		
Question	How many permutations exist for INR controlled switching in the 3 trial areas based on the number of NOPs you have and would be expected to keep in these areas.		
Notes on question	None		
Answer	<p>From our analysis of the trial area networks and power systems studies carried out, on average, over 40 different network permutations were found on each of the trial areas.</p> <p>These permutations were determined from changing the position of circuit breakers or switches across the trial areas. For each possible permutation, a power system study was performed to determine what capacity could be released whilst maintaining the network within statutory requirements and limits. These studies were automated due to the volume of permutations that were required to be studied. In a number of instances it was found that the permutation could not be implemented as it would not release capacity or would result in the network exceeding thermal or voltage limits. Our studies also found that some Normal Open Points (NOPs) could be closed when fault levels were found to be within equipment capabilities, thus helping release additional capacity.</p> <p>Within our Full Submission we have included costs for upgrading a selection of switches on the trial network so that they would have the ability to be remotely controlled (automated) by INR. In addition, we have included for further permutations that would be realised through the installation of ACSs on the trial network. The installation of upgraded switches and ACSs were included on the trial areas when calculating the switching permutations.</p>		

Attachments	None
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