

# *LCN Fund Full Submission*

## *Supplementary Answer Form*

Tick if this answer is Confidential: ☐

Tick if this answer has been provided verbally: ☐

Project code:	SPT 2003	Question Number	4
Question date	25/08/2011	Answer date	30/08/2011
Submission section question relates to	Appendix D		
Topic	Installation of solar PV		
Question	For the roll-out of the solution, what proportion of domestic installations do you assume will be concentrated in one area (eg as planned by Wrexham Council) as compared with a more dispersed implementation on individual homes spread across the LV networks?		
Notes on question			
Answer	<p>The concentration of PV across the Wrexham council area has varied levels of density and this is dependent upon the location of the Council housing stock where PV is suitable as opposed to the spread of the LV distribution network.</p> <p>Wrexham Council have provided Scottish Power with the identified properties where PV will be installed. These amount to 3958 domestic installations, totalling 6265kW of PV generation capacity across the greater Wrexham area. They will be connected across 192 secondary substations, which in turn are supplied from 28 Primary substations. The Primary substation with the greatest penetration of this solar PV was determined to be Ruabon which will feed 1190kW (19% of the total) across 23 secondary substations.</p> <p>We intend to monitor three specific 11kV circuits out of the Ruabon substation which provide supply to 16 of the 23 secondary substations, as this then monitor 965kW of PV generation on the network (81% of the</p>		

	<p>1190kW) supplied from Ruabon Primary substation.</p> <p>We have not mapped the exact properties against the specific LV feeders at this stage as this is a very resource intensive exercise and on-site feeder inspections are likely to be required for clear identification. All properties have however been mapped onto their respective secondary substation as well as the neighbouring one in the cases where there are interconnecting LV feeders. From the high level mapping, we are sufficiently confident that the PV installations will be spread across multiple LV feeders on each secondary substation. One of the key objectives is to determine the degree to which detailed knowledge of the LV network is required for design and operational decisions relating to high levels of LV connected PV.</p> <p>As part of the secondary substation monitoring programme, we are monitoring all of the LV feeders on the secondary substations where we expect PV to be connected as this will show the conditions where the PV is concentrated back to the export point onto the HV network. We have also included provision for LV monitors which will be installed on the LV network so that the actual behaviour of the LV voltage can be monitored at points beyond the secondary substation.</p>
Attachments	
Verbal Clarifications (Consultants )	