LCN Fund Full Submission

Supplementary Answer Form

Tick if this answer is Confidential: ☐

Tick if this answer has been provided verbally: ☐

Project code:	Smarter Network Storage	Question Number	UKPN002
Question date	30 August 2012	Answer date	04 September 2012
Submission section question relates to	2, Appendix A		
Topic	Project Description, Net Benefits		
Question	In their Net benefits calculation, UKPN has subtracted the value of estimated savings accrued through displaced peak generation capacity from the method costs. Please can UKPN explain to whom these savings accrue.		
Notes on question			
Answer	The savings from displaced peak generation capacity accrue to all end consumers on the electricity system. The SNS project will prove the hypothesis that electricity storage connected to the distribution electricity system has the potential to bring a number of benefits to different parties at the same time. Electricity Storage facilities can benefit multiple parties at once through: - deferring distribution network reinforcement, hence, reducing the cost of distribution network infrastructure to the end consumer; - providing Transmission System Operators with capacity which can be used for system balancing, i.e. through current services of frequency response and STOR; and - displacing the requirements for additional generation capacity on the network; and - providing added value network support functions, such as power factor correction and power quality support (depending on the storage technology). Distributed storage provides capacity to the system operator for system		

	balancing purposes. We have therefore assumed that less capacity will need to be built in order to deliver the balancing requirements. The generation capacity which is at the margin in the system is therefore displaced as it is not required. The type of capacity which will be displaced will typically be either Open Cycle Gas Turbines (OCGT) or Combined Cycle Gas Turbines (CCGT). This benefit accumulates site-by-site, as increasing numbers of storage facilities are commissioned and offer services to market participants, and ultimately reach a critical mass at which a number of OCGT or CCGT plants are not renewed when it reaches end-of-life. We agree that in the current regulatory framework there is not a mechanism which allows this benefit to be attributed to individual storage sites, nor to the DNO. As such, under the existing regulatory arrangements bill-payers still stand to benefit from this displacement of carbon-intensive plant, but not through the Distribution Use of System (DUoS) element attributed to the DNOs. Nevertheless, this approach to quantifying benefits is consistent with the approach taken elsewhere in GB system-wide studies, particularly in the report listed as reference (2) in paragraph 2.4 of our bid document, and the report listed as footnote 5 in Appendix G, paragraph 1.1.6. As such, in Appendix G, paragraph 3.1, we forecast that the benefits of displaced peak generation capacity may reach a total of £0.53bn for bill-payers across the GB by 2040.
Attachments	
Verbal Clarifications (Consultants)	