Electricity Network Innovation Competition Full Submission

Supplementary Answer Form

Project: Optimise Prime

Tick if this answer has been provided verbally: ☐

Project code	UKPNEN03	Question Number	7
Question date	16/08/2018	Answer date	20/08/2018
Submission section question relates to	Section 4		
Topic	Criteria d) Innovative		
Question	Beyond stating this is the first time something is being done please explain in detail the risk to UKPN NIC funding will mitigate that in your view prevents UKPN from implementing this work without NIC funding.		
Notes on question	This is a follow up to Question 5. Please note we have tried to contact Ofgem by phone on Friday 17 August August to understand more about their question but were unable to contact Neil Copeland. We would welcome a phone conversation if Ofgem require further information.		
Answer	In this answer we will discuss the level of uncertainty associated with each method being successful, and the uncertainty of each method generating benefits to a DNO / their customers as part of their business as usual activities. Method 1: It is uncertain what the long term technical solution for this method would be. Ideally a fully interoperable variable rate EV charger that is integrated with the SMETS-2 Home Area Network (HAN) would be used with no additional communications or measurement devices. The current standard for HAN Connected Auxiliary Load Control Switches (HCALCs) was released in 2015[1] only includes on/off functionality (not ramped). To our knowledge no compliant devices exist on the market. As such we have no confidence in the availability of this solution in the near term. To ensure the success of this project we have investigated alternative options including the installation of dedicated metering for the commercial vehicle charge point on the domestic premise. It is, however, unclear whether they would be viable long term solutions warranting a limited		

[1] https://www.ncsc.gov.uk/content/files/protected_files/document_files/SMLT-SC-0005%20HCALCS%20v1-2.pdf

	deployment trial. As such we wish to pursue the best available solution in order to gain the data from trialling this method, in the understanding that the solution development costs may well be wasted in the long term. At present there is no data quantifying the cost or the benefit to DNOs of commercial vehicles providing flexibility while connected at domestic premises. **As such it would not be possible to create an evidence based business case for a BAU funded deployment.** Greater benefits arise to the fleet operator, who outside of this project is likely to develop a solution without the involvement of UK DNOs. Such a solution is unlikely to be optimised for wider network customers, with no consideration for socialised reinforcement costs. This project includes DNOs, a large UK energy supplier, a technology provider and fleet operators to develop a solution that is appropriate for all and delivers best value for customers. <u>Method 2</u>: For Method 2, NIC funding will allow UK Power Networks to carry out trials of a new profiled connection offering in a safe environment. We do not expect that commercial customers, such as Royal Mail, would accept such an unproven offering without the two systems developed in Method 2 (i.e. the site planning tool and the depot energy optimisation tool) and outside of trials within a safe environment, such as the one offered by the NIC. There is significant risk to both the fleet operator and the Network within this Method. **The profiled connection is effectively making the capacity and diversity clear and visible and contractually agreeing it between parties, despite neither party really knowing what it is.** It is uncertain whether a connecting customer could comply with a profiled connection, as such they are unlikely to agree to them if developed outside of an innovation trial. This is especially true when the connecting customer is branching into a new area, such as electrifying their vehicle fleet. It is uncertain whether a DNO could measure or enforce compliance with a profiled connection, and what that enforcement would look like, which is something that would have to be clearly developed and defined for a business as usual deployment, to provide credible evidence to the DNO of the compliance and reliability of such a profile due to capacity headroom erroding. It is uncertain for a DNO what the follow-on impact will be once sites in an area have profiled connections. It is unclear what the impact will be for future connections in the area and the interactions between sites. It is also uncertain how a site that has a profiled connection could potentially provide flexibility services, especially if the service requirement conflicts with the site profile. The NIC funding will also allow us to carry out Method 2 trials over a statistically robust number of sites, so that the learnings and systems produced and developed by Method 2 are scalable.

	The recently published Ofgem consultation "Getting more out of our electricity networks by reforming access and forward-looking charging arrangements"[2] suggests the further development of a profile-type connection as the alternative of sufficient network redundancy to allow full physical firmeness of connections is unnecessarily expensive. We expect that without timely trials of such connection products and systems ensuring compliance with agreed connections, both commercial customers and GB DNOs will be reluctant to accept/offer profile-type connections, thus missing the opportunity. <u>Additional points</u> The NIC funding enables trials to be carried out with a large number of vehicles to ensure that all learnings are statistically reliable, scalable and cover the three main EV charging segments sufficiently. It should be noted that for one of our partners, Uber, there is no precedence to sharing their platform data and it is the NIC funding that has played a major role in their participation. Royal Mail has brought their electrification plans forward by three years because of the magnitude of trials and learning enabled by the NIC funding. This represents a significant investment for their organisation. Without the NIC funding, UK Power Networks would not be able to carry out trials at scale with partners of this magnitude. It would not be justifiable to use business as usual funding to gain the resulting dataset, which will deliver benefits to the whole industry. The risks to UK Power Networks of carrying out flexibility activities via a third party, especially at LV, have been covered in our answer to Q5.
Attachments	

[2] Paragraphs 3.15 to 3.21: https://www.ofgem.gov.uk/publications-and-updates/getting-more-out-our-electricity-networks-through-reforming-access-and-forward-looking-charging-arrangements