

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	33
Question date	02/10/18	Answer date	08/10/18
Submission section question relates to			
Topic			
Question	<p>In the first bilateral you said in effect that fleet operators may oversize a connection request triggering reinforcement beyond that which is required for an EV fleet of a given size. This is your rationale for the Depot Optimisation tool. Please explain: Why you would not simply provide a quote for a connection of the capacity you deem appropriate for a given fleet size based on UKPN's engineering knowledge and experience; and why UKPN should invest NIC funders' money in the development of a tool which optimises connecting EV operators' use of energy to reduce the cost of connection, where this service could be provided by an engineering consultancy at the connecting customer's expense.</p>		
Notes on question	<p>We must clarify that the rationale for the Depot Optimisation Tool is different to the one stated above. We explain the rationale behind all depot tools in our response below.</p>		
Answer	<p><i>Question: Why you would not simply provide a quote for a connection of the capacity you deem appropriate for a given fleet size based on UKPN's engineering knowledge and experience?</i></p> <p>New connections are always driven by the applicant's specific requirements including (but not limited) to total power required, usage of the connection, and when the connection is required. When determining the most appropriate solution for an applicant's request the DNO must take into account the network constraints for when the connection is required and ensure a balance between providing an appropriate solution and their obligations to provide a safe and efficient network is met. The regulatory framework, including Section 16A and LC12, is strict in term of the need for the applicant to provide the information (Customer requirements) to enable the DNO to issue a quotation that is consistent with our CCCMS (Common Connection Charging and Methodology Statement). It would be difficult to justify treating subsets of customers differently.</p>		

It is worth noting here that UK Power Networks is offering to customers the option of carrying out feasibility studies for a fee, should they wish, prior to them making an application. Through these studies, we can advise customers about possible ways of optimising their capacity needs. However, those feasibility studies at the moment are labour intensive (as the process is manual) and hence not scalable to assess the volume of requests that may come as commercial fleets electrify.

Furthermore, it is also worth noting if the work in the network access and charging arena results in a shallow network charge, then the economic signals that produces a need for a consultant could be lost, so it could be important to act now to protect future customers to ensure a more thorough understanding.

Question: Why UKPN should invest NIC funders' money in the development of a tool which optimises connecting EV operators' use of energy to reduce the cost of connection, where this service could be provided by an engineering consultancy at the connecting customer's expense?

This question seems to be referring specifically to the Site Planning Tool in Method 2.

Method 2 aims to develop a number of tools and processes that allow the calculation and deployment of an optimal connections profile at fleet depots (in the future and after the Method is proven, this could be expanded to include other types of connecting customers).

The Site Planning Tool is the tool which, based on a number of inputs from the fleet operator (such as number of electric vehicles, operational schedules, on site demand, availability on site energy assets), will advise on an optimal demand profile for the specific site. This profile can then be used by the fleet operator to request a 'profiled' connection from their local DNO. This gives confidence to the customer that what they are requesting as a connection from the DNO meets their actual needs and is not a connection imposed by the DNO based on network constraints at the local substation.

The DNO will then assess the request for a 'profiled' connection using their profiled connection assessment tool, which in our case is an enhanced version of our currently used network power flow analysis tools (DigSilent and DPLAN). When the assessment is complete, the DNO sends a costed proposal back to the customer.

The Depot Optimisation System is the one controlling and optimising on site assets (i.e. assets at the depot), including the EV charge points, making sure that all load demand needs are met whilst keeping within the limits of the agreed 'profiled' connection with the DNO. This gives confidence and assurance to the DNO that the customers with 'profiled' connections stay within their connection limits. This will become particularly important when such connection offerings are scaled up and become common. In these cases, failure from DNOs to ensure compliance of customers on 'profiled' connection, may compromise the resilience and reliability of the network. The Depot Optimisation System will also coordinate the participation of EV charge points in any demand response activities.

All three tools are essential for trialling and proving Method 2. Method 2 as a whole has a Direct Impact to the network in compliance with the NIC governance requirements as it reduces and/or shifts the electrical demand of commercial Customers.

The decision has now been taken (following the feedback from Ofgem and the Expert Panel in Bilateral 2) that the Site Planning Tool is part-funded by UK Power Networks'

	own contributions to the project and NIC now only funds part of its development. As the panel expressed support for the criticality of project management UK Power Networks is funding a greater portion of its project management costs from the NIC.
Attachments	