Electricity Network Innovation Competition Full Submission

Supplementary Answer Form

Project: Charge: Refuelling Tomorrow's Electrified Transport

Tick if this answer has been provided verbally: ☐

Project code	SPMV1	Question Number	1
Question date	07/08/18	Answer date	09/08/18
Submission section question relates to		n/a	
Topic	(d) Innovative		
Question	Please explain how method 1 of the project goes beyond what licensees should consider in discharging it obligations under Standard Condition 25.		
Notes on question			

Answer	• Under Standard Licence Condition 25 we are obliged to:
	  ○ Support third parties in the connection to the Distribution network
	  ○ Provide visibility of the Distribution network
	• This is currently done through the publication of a Long Term Development Statement (LTDS) which provides visibility of investment plans and network capacity as it exists today, and how it changes with approved major reinforcement projects over the coming years.
	  ○ Whilst it involves stakeholder input, it tends to focus on investment agreed in the near future (e.g. within the RIIO-ED1 timescale).
	  ○ DNOs do not, at this point, know how the mass electrification of transport will affect the electricity networks, particularly for non-residential demand. EV load-growth is therefore unknown, giving rise to uncertain outputs.
	• Charge's Method 1 seeks to enhance the activities under the LTDS.
	  ○ EVs will bring about a fundamental change in how our network will be utilised, the resulting load growth and its predictability.
	  ○ The scale of the challenge of EVs dwarfs what we have done to date in load growth forecasting as part of the LTDS - typically a standardised load growth index applied to all substation supplemented with areas of load growth that are identified through engagement with stakeholders.
	  ○ The LTDS is produced on an annual basis also, 12 months could be a long time to refresh this data if it is required for EV charging infrastructure.
	  ○ The proposed Charge approach is therefore more iterative than the LTDS, forecasting widespread load growth from		

	EVs and refining the geospatial load growth year on year to target the network interventions required. • We expect the output of the transport planning exercise in M1 to be an idealised view of where to locate chargers, based on where people and traffic move, and where they are stationary. What transport planning does not consider, is where there may be available network capacity to accommodate connections. This fails to provide clear forward signals to connectees, resulting in costly, time consuming and highly inefficient processes. • We expect the output of Method 1 to be: ○ A series of transport plans outlining where customers will need charging infrastructure as uptake progresses (i.e. at different points in time) ○ A mapping of where the required charging locations align with 132kV/33kV capacity, thereby acting as an indicator to encourage lower cost EV charging connections for immediate publication / signposting to connectees ○ These outputs will then be layered with more sophistication deeper into the network (e.g. Primary substation and 11kV feeder) when combined into the ConnectMore software tool described in Method 3.
Attachments	n/a