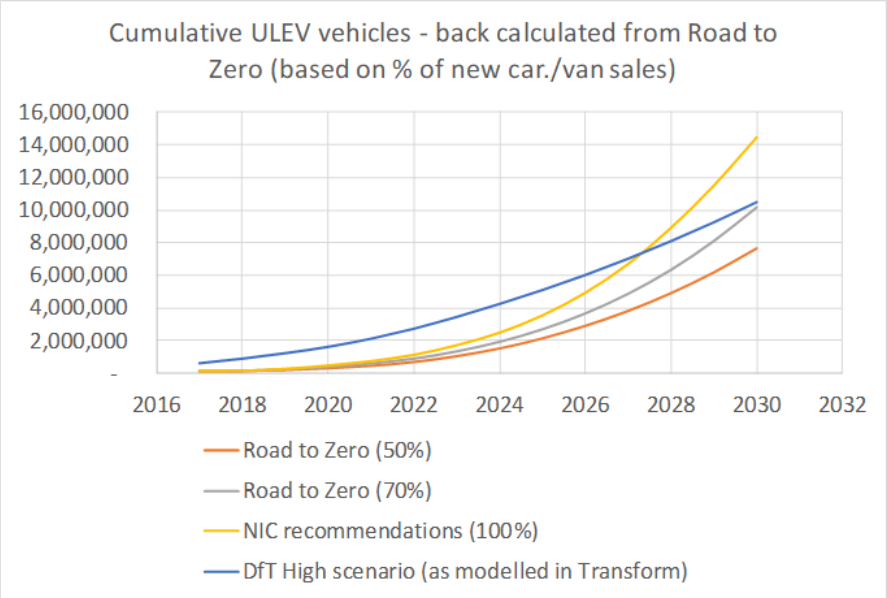
Electricity Network Innovation Competition Full Submission

Supplementary Answer Form

Project: Charge: Refuelling Tomorrow's Electrified Transport

Tick if this answer has been provided verbally: ☐

Project code	SPMV1	Question Number	49
Question date	30/08/18	Answer date	17/09/18
Submission section question relates to		N/A	
Topic	a) Low carbon/environment and net financial benefits		
Question	What would be the financial and carbon benefits if a conservative uptake profile is applied?		
Notes on question			
Answer	We have adapted a conservative approach to the financial and carbon benefits outlined in the bid, however, to address the question we have provided additional sensitivity analysis below. **Financial Benefits – Sensitivity Analysis** The financial benefits for Methods 1 and 3 are based on an assumed deployment of chargers for en-route and destination chargers in line with the recommendations from the Committee of Climate Change's January 2018 report (source: Plugging the Gap: An Assessment of Future Demand for Britain's Electric Vehicle Public Charging Network, Ref. 105852, 11/01/18), as reference in the Road to Zero strategy. We have not applied any sensitivities on these figures, as they are regarded as a minimum to stimulate EV deployment. For Method 2, we used scenarios provided from DfT / DECC (as was) in 2012, and applied them in the Transform Model. As these scenarios are older, we selected the higher of the three uptake levels, as the central and low now look increasingly unlikely to happen. There are no published figures on the actual volumes of ultra-low emission vehicles in the public domain. However, our partners, EA Technology, have provided an estimate from the Government's Road to Zero strategy, taking today's car park fleet, and typical life expectancies of vehicles. The results show that our chosen scenario is similar to the upper end of the Road to Zero strategy, i.e. 70% of new vehicles by 2030, which is plausible as the infrastructure is needed ahead of the vehicle uptake. It is further noted that the National Infrastructure Commission recommends "that government, Ofgem and local authorities should enable the roll out of charging infrastructure sufficient to allow consumer demand to reach close to 100 per cent electric new card and van sales by 2030". Given this, our uptake scenario remains realistic.		



The second aspect affecting the financial benefit for Method 2 is the cost of flexibility. We used payment figures from WPD's Dynamic Flexible Power initiative (Table 15, page 52 of 94). To address this question, we applied a +/-20% factor to these payments, which resulting in the figures below.

Method 2 GB benefits (£m)	to 2030	to 2040	to 2050
Sensitivity (High cost +20%)	£ 3.93	£ 439.28	£ 329.45
Central	£ 6.96	£ 548.47	£ 666.04
Sensitivity (Low cost -20%)	£ 9.99	£ 657.66	£ 1,002.63

Carbon Benefit – Sensitivity Analysis

The carbon benefits for Charge assume an acceleration by 1 year. The sensitivities around this estimate are shown in the table below.

Uptake Rate	Acceleration	tons CO2		
		2030	2040	2050
Low	0.5 years	27,212	176,477	190,394
Proposal (conservative)	1 year	61,146	353,879	377,143
High	1.5 years	103,533	531,022	560,459
Very High	2 years	156,353	706,925	740,215

Attachments	n/a