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Mr Chris Stark
The Committee on Climate Change – Call for Evidence
7 Holbein Place
London
SW1W 8NR

6 December 2018

Dear Mr Stark,

Building a zero carbon economy: Call for Evidence

I am writing in response to your Committee's call for evidence into *Building a zero carbon economy*. As you may be aware, OVO has been investing in the energy technologies that will play a crucial role in decarbonising power, heat and transport and thereby helping the UK transition to a net zero-carbon economy in the most cost effective manner.

I wanted to draw your attention to OVO's analysis in partnership with Imperial College London, *Blueprint for a post-carbon society* (attached) which we feel could make a valuable contribution to your call for evidence.

The report highlights how the use of residential flexible technologies, such as smart electric vehicle (EV) charging, smart electric heating and in-home batteries can help to make substantial savings to the customer and the UK energy system as a whole, whilst also bringing more renewables on to the grid and undergoing radical decarbonisation. Specifically, the research utilises Imperial's WeSIM modelling to evaluate different energy system scenarios focusing on the effect of adding flexibility from residential demand onto the energy system.

The most ambitious scenario, titled 'Future Survival', envisages near complete decarbonisation across the power, residential heat and road transport sectors with a grid carbon intensity of 25g per kWh, 25 million EVs and 21 million electrically heated homes. The findings for this scenario reveal that household energy flexibility could save whole system costs of up to £6.9bn per year, which amounts to £256 per household. Individually, smart EV charging was shown to save £1.1bn, vehicle-to-grid charging £3.5bn, smart electric heating £3.9bn and in-home batteries £2.9bn. These savings come from reducing the investment requirement in network infrastructure and allowing for greater utilisation of cheap low-carbon technologies like wind and solar in place of more expensive low carbon generation such as nuclear and CCUS.

However, there are barriers to extracting the value of these technologies. Current markets fail to allow the full system benefits identified in our analysis to be realised. The

biggest challenge is the lack of route to market to grid balancing revenue streams from these devices. Regulatory and market changes are required in order to facilitate the adoption of these technologies, in line with OVO Energy's Flexibility First proposals (attached).

We think the research we've conducted could make a valuable contribution to your investigation and hope that you will take it into consideration when reviewing evidence. If you have any questions on the analysis or on our proposals, please do not hesitate to get in touch.

Your sincerely,

Dr Toby Ferenczi
Director of Strategy, OVO Energy