

Mr Jonathan Brearley
CEO, Ofgem
10 South Colonnade
Canary Wharf
London E14 4PU
Flexibility First Forum

10 June 2020

Dear Mr Brearley,

The contribution of flexibility on reduced balancing costs during lockdown

Last month, National Grid ESO revealed that it will be spending an additional £500 million on balancing the electricity grid over the summer as a direct result of the stress factors that lockdown has placed on the UK's energy system.

As representatives of the energy flexibility services supply chain and cleantech community, we recognise the exceptional challenges that National Grid has faced in tackling record low energy demand and high renewable generation. We appreciate the speed at which it has had to introduce new tools and services to keep the lights on during this critical period. We note that though the lockdown has prompted this measure on this occasion, such incidents will become more frequent as the energy transition progresses.

However, as this significant cost will ultimately fall on customers through their energy bills, we wanted to demonstrate what the energy system of tomorrow could have contributed to lowering these costs. We estimate that up to £133 million in potential balancing savings could have been achieved, equating to a 27% reduction on balancing costs for National Grid and a subsequent bill saving of £4.82 for each UK household.

Our full calculations have been set out in the table below and are based on a system in which the storage and discharge ability of 6 million smart electric vehicles batteries is harnessed to provide balancing services. We note that this is not possible today, because of a lack of large numbers of electric vehicles on the roads combined with limited opportunities for residential flexibility in national and local ancillary service markets. There's also a lack of market wide half-hourly settlements to incentivize stakeholders to better utilize flexibility as a balancing resource. We know that electric vehicles are on a path to rapidly expand in the years to come largely due to U.K's leadership in setting targets for the transport industry. However, if we want to ensure that the energy system of tomorrow can be more resilient we need regulatory leadership in creating the framework that incentivizes the market to utilize flexibility. This framework could provide National Grid ESO with an extra 3.6 TWh of energy to balance the system over the summer months.

In addition to EVs, there already exists a wide range of flexible technologies that could be supporting the grid during this time while also delivering customer cost and carbon savings. These include smart electric heaters and home solar batteries that could all be providing

services at this time if the right signals and instructions were being administered. However, as the Flexibility First Forum has repeatedly outlined, the market frameworks that would enable these assets to support the energy system are simply not yet in place.

As we decarbonise the transport, heat and energy systems, the demand on the electricity system will significantly increase. Flexible technologies and storage assets will be needed to integrate a higher level of renewable generation onto the system to produce carbon savings. Harnessing the potential of these technologies is critical to ensuring green energy supply isn't unnecessarily wasted.

Establishing domestic flexibility as a low-carbon and market-based tool for National Grid and Distributed System Operators to draw upon is also a more critical component than ever in ensuring resilience given the blackout of last summer and the continued stress that National Grid expects COVID-19 will place on the energy system.

We look forward to working more closely with you to develop a fully flexible energy system that delivers cost savings to consumers and contributes to the creation of a resilient, decarbonised grid.

Yours sincerely,

The Association for Decentralised Energy

BEAMA

Caplor

Centrica

Eco2Solar

Electron

Energy Unlocked

Eon

Flexitricity

geo

Graham Oakes Ltd

Kaluza

Moixa

Octopus Energy

OVO Energy

PassivSystems

The REA

Solar Trade Association

CC: Fintan Slye

Director, National Grid Energy System Operator

Flexibility First Forum BSUoS Cost Saving Analysis

Current Additional System Balancing Cost per MWh (£36.95)		
Demand Decrease	Associated Balancing Cost	Associated Balancing Cost/Demand Decrease
0.11 TWh per day (Elexon Data) x 123 days (4 Months, May-August) = 13.53 TWh	£500m	£500m / 13.53 TWh = £36.95 per MWh

Potential Additional System Balancing Cost Saving with Support of 6m EVs (~£133m)		
TWh of Flexible Charging of 6m EVs over 12 Months (EV figure from National Grid Future Energy Scenario prediction for 2030)	TWh of Flexible Charging of 6m EVs over 4 Months [May-August]	TWh of Flexible Charging * Balancing Cost
10.8 TWh (Kaluza Data)	4/12 * 10.8 TWh = 3.6 TWh	3.6 TWh x £36.95 per MWh = ~£133m BSUoS cost saving