



Understanding flexibility April 2020

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#### What are Flexible Services?



Flexible Services is the term given to the act of reducing consumption or increasing generation following receipt of a signal, due to a network constraint.



In simple terms, it means a customer generating more or using less electricity after we've asked them to.

A network constraint is where demand exceeds capacity, which leads to a breach of safe network operating limits.



This means the requirement for electricity in the area is greater than the amount that the local network is capable of providing.

There are lots of things that can cause an increase in the demand for electricity - leading to network constraints



Electric heating is used in Winter to keep warm



Air conditioning is used to keep cool in the Summer



Big televised events leads to lots of television watching



The uptake of low carbon technologies that are powered by electricity



## The changing energy landscape



A revolution is currently underway as the UK embraces a zero carbon future, and the way energy is generated, stored, consumed and traded is all evolving at a significant pace. The electricity industry is facing one of it's biggest challenges yet.



Increase in low carbon technologies

For the UK to meet it's decarbonisation targets, we expect to see a huge uptake in low carbon technologies



More demand on the network

This uptake will result in an increased demand on the network, which wasn't originally designed to cope with low carbon technologies



Reinforcement required

To be able to meet
this demand, we will
need to invest millions
of pounds in
reinforcing the
network



Increased cost to customers

These costs are ultimately passed down to our customers through their electricity bills



Disruption

In addition, these reinforcement works have the potential to cause a lot of disruption in terms of road closures and supply interruptions

It's our responsibility to find smarter, more flexible ways to meet future needs, and procuring Flexible Services is one of the ways in which we plan to tackle this challenge.

### What are the benefits?



Reduction in supply interruptions

Reduces  $CO_2$ emissions

community energy groups

Encourages low carbon

Supports

technologies

Utilises

Less disruption

existing assets

Supports local businesses



Cheaper

bills for

our

customers







# How we identify a Flexible Service requirement





On a annual basis, we forecast what we expect the demand to be on our network in both the near and distant future



We then take a look at each of our substations, and compare the firm capacity with the forecasted demand

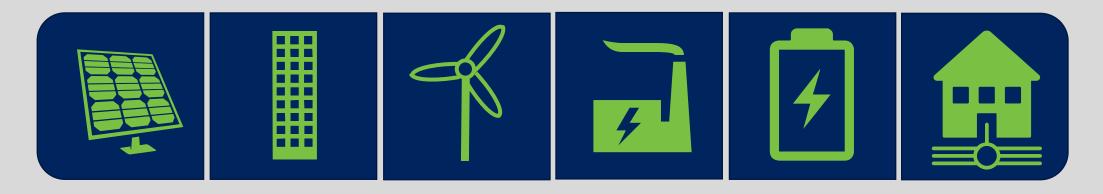


Where a constraint is identified which can be alleviated by Flexible Services, we publish a Request for Proposal

## Who can get involved?



Anyone capable of adjusting how much electricity they consume or generate, and is able to provide a minimum of 50kW\*



If you're not able to provide a minimum of 50kW, you can still get involved via an aggregator



Aggregators combine load from multiple customers to provide Flexible Services

<sup>\*</sup>Minimum values may vary depending on the overall size of the requirement.