CARBON NEUTRAL ENERGY

"Hybrid Power Solutions"

Battery Storage:
Wind Turbines

Battery Storage an efficient solution to the current inefficient Constraint Payment structure for Wind Turbines.

Constraint Payments

Constraint payments are part of a regulatory framework called “Connect & Manage”.

Introduced into the UK in 2010 to, allow the development of electricity generation projects & their connection to the transmission system.

The National Grid is responsible to identify surges, shortages & balance supply & demand accordingly.

As part of this process occasionally low demand in the UK requires the National Grid to reduce power flow from wind generators.

In these cases wind farms are asked to reduce output in order to avoid damage to the UK systems.

2019 was the tenth year in which British wind farms have received constraint payments to reduce their output because of electricity grid congestion.

In the last calendar year we have spent in excess of £135 million in constraint payments to turn wind turbines off due to grid capacity. This is a very inefficient way of spending our tax money.

However with the design of the **CNE** range & commercial model, these constraint payments could be re-allocated to storage of renewable energy to bolster the efficiency, adding capacity, reduce wastage & being more commercially astute.

Why Does The UK Need Battery Storage?

Smooth grid operation relies on the provision of rapid reactive power services (either by generation or dedicated facilities) to enable frequency stabilisation. Traditional generators have a reaction time of under 10 seconds, but batteries are able to provide sub-second response times, so offer a solution to a number of the Grid's balancing issues. As more coal and traditional power stations come offline and are replaced with renewables, the National Grid has to procure many thousands of megawatts of batteries to compensate for the increase in the variation of frequency of the currency on the grid.

Balancing demand & supply in real time has proved more & more complex as the number of intermittent resources increases. The need for cyclical & reactive "peaking" generation, therefore, has historically been met by generation sources able to stop & start to some degree on demand, such as gas turbines & hydropower plants.

In addition, the need for standby peaking capacity has grown to meet demand when intermittent sources are not generating or to shift electricity, which is generated at times of low demand to peak periods when demand is greater (generation from wind, for example, tends to be greater at night when electricity demand is at its lowest).

Offering

CNEs unique modular design allows for significant scaling up of power capacity. Either by using our **Megabank** self-contained solution were it can offer up numerous options to suit any site or alternately our **Mega Station** solution allowing for gigawatts of capacity which will be connected to the grid supply throughout key locations around the UK**.**