

Battery Storage Glossary

Energy Arbitrage

The practice of purchasing electricity from the grid when it is cheap, and storing it for later use when grid electricity is expensive.

Distribution Use of System

DUoS is charged by your local Distribution Network Operator (DNO) to cover the cost of transporting electricity through the network directly to a business. (In our area this is UKPN)

These charges comprise of a number of distinct elements: Fixed charges, Capacity charges, Reactive power charges and Unit charges.

Unit charges are per kWh of electricity used. They vary according to the time of day used and are also location dependant.

Batteries reduce the Unit charges by using the lower rate charge times to charge the battery and reduce/avoid peak unit charges by discharging the batteries at peak times.

Transmission Network Use of System

TNUoS cover the cost of transporting electricity from generating stations to the network and are charged by National Grid.

The TNUoS charge is based on the average demand during the three half-hour periods of greatest national demand between November and February, known as Triads, multiplied by the tariff for your particular zone. The three Triad periods usually occur in the early evening during the week when national demand for electricity is highest and must be separated by at least ten working days.

Reducing electricity demand from the Grid during likely Triad periods can create significant savings.

Firm Frequency Response

FFR is operated by the National Grid (and some District Network Operators) to maintain the Grid Frequency at 50Hz (+/- 1%).

Frequency decreases when there is more demand than generation and frequency increases when there is more generation than demand.

The National Grid uses a tender process where Aggregators submit bids to provide services for low frequency events, high frequency events, or both.

Batteries can help by reducing/removing the host site from the Grid when there is a low frequency event (reducing demand) and by storing energy when there is a high frequency event (creating demand).

FFR are up to 2 year agreements with the contracts set by the National Grid

Capacity Market

The CM is intended to ensure the UK has sufficient capacity available to meet the winter peak demand and is operated by the Electricity Settlements Company (ESC).

Generators are paid a premium during the times of high demand and hence this is recovered through consumers electricity contracts.

The CM Charge will be applicable to energy consumed between 4pm and 7pm, Monday to Friday from the start of November to February inclusive.

Batteries can help reduce these charges by discharging the batteries during these peak times.

A saving is made by not incurring the charge for high energy use at peak times and an income is achieved by providing capacity to the market ie discharging the battery.