

Triad guidance notes

Background

The “triad” system is the means by which industrial and commercial electricity consumers pay for the electricity transmission network in Great Britain. The triad system doubles up as a peak load management mechanism.

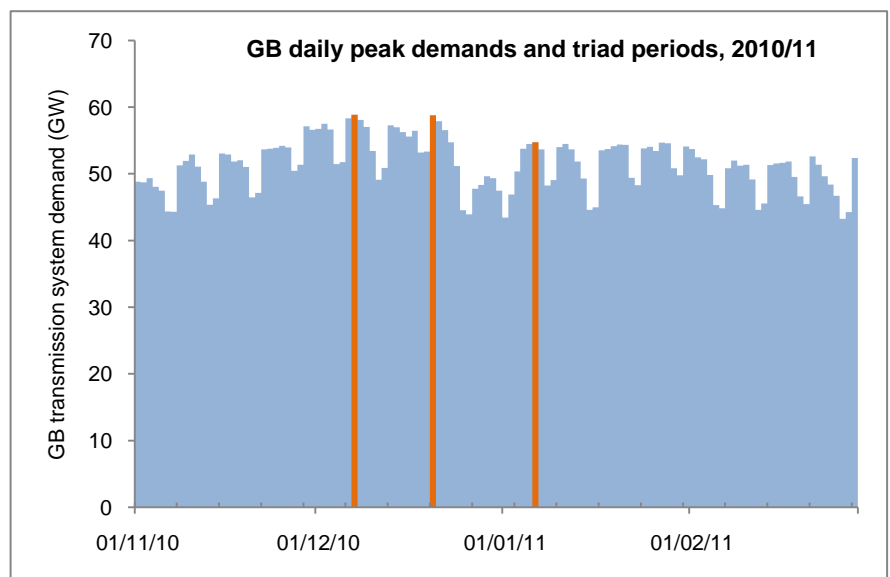
Triad charges are part of **Transmission Network Use of System (TNUoS) charges**, which National Grid recovers every year from Licensed Generators (large power stations) and Licensed Electricity Suppliers. The TNUoS charges which Electricity Suppliers pay for the consumption of their half-hourly (HH) customers are in the form of triad charges.

The cost of owning and operating the transmission network is driven by the peak demand which the network must satisfy, and is higher where demand is high and generation is insufficient. The triad charging system has been designed to penalise consumption during peaks, especially in highly stressed parts of the network.

Triad mechanism

The “triad season” runs from the beginning of November to the end of February every year. Once the triad season is over and half-hourly meters have been read, the three half-hour periods of maximum demand are identified. These are the **triads** for that season, and must be separated by at least ten clear days.

For each Electricity Supplier, its customers’ average consumption, in each network zone, over the three triad periods, is calculated. This is multiplied by the triad charge for that zone to create the total amount which the Supplier must pay to National Grid.



Commercial opportunity

Because the cost of owning and operating the GB transmission network for a year is recovered in the three triad periods, consumers and small generators can save and earn money from the triad system.

Consumers who avoid consuming during those periods, whether by turning down or by running generators, save money for their Electricity Suppliers. Small generators who export electricity from their sites during the triad periods also save money for the Electricity Supplier who purchases their generation.

A consumer or generator wishing to exploit this opportunity requires:

1. **Flexibility in consumption or generation** – Flexitricity can identify, connect and manage flexible loads and small generators to maximise triad benefit;
2. **The right tariff** – For consumers, the triad charges must be explicit, not hidden in the unit rates. For generators exporting electricity, a share of the triad benefit must be negotiated with the Supplier.
3. **Triad warnings** – Because triads are not known in advance, they must be predicted from demand and weather forecasts, and previous experience.

Most Suppliers and many energy bureaux provide triad warning services. Triad warnings vary between sources. Flexitricity gathers triad warnings from several sources to minimise the risk of missing a triad.

Value of triad management

The value of triad management depends on the network zone. Triad charges for 2010/11 are shown on the right: these are the charges which can be saved by avoiding consumption during triads. Generators exporting electricity can usually negotiate a 90-95% share of triad benefits from their Supplier.

Generators must also consider the cost of fuel. Most generators will run for around 25-30 hours in each triad season in response to triad warnings.

Within strict constraints, triad management can co-exist with other valuable services such as Short Term Operating Reserve (STOR), adding up to 60% above STOR revenue depending on the zone.

Flexitricity carefully co-ordinates STOR and triad management to maximise revenue while respecting contractual obligations.

Network zone	Triad charge (£/kW)
Northern Scotland	£5.87
Southern Scotland	£11.22
Northern	£14.52
North West	£18.43
Yorkshire	£18.34
Merseyside and North Wales	£18.89
East Midlands	£20.93
Midlands	£22.69
Eastern	£21.84
South Wales	£22.52
South East	£24.63
London	£26.76
Southern	£25.49
South Western	£26.06

Historical triads

Peak demand is driven by the co-incidence of lighting-up time with the end of the working day. For this reason, triads have historically occurred between 16:30 and 18:00 on Mondays, Tuesdays, Wednesdays and Thursdays. The only exceptions since 1972/73 were Sunday 7th January 1973 (17:00-17:30) and 15th February 1973 (18:00-18:30).

Around the winter solstice, triads tend to occur earlier in the day. Triads are strongly correlated with temperature, so a cold snap late in the winter can cause a triad to fall later in the day.

