nationalgrid

Introduction to Charging: Which Parties Pay Which Charges?

Information I **National Grid**

Last Updated December 2015

	Directly connected Demand and Suppliers	Transmission Connected Generators*	DNOs
Connection Charging - The cost of sole use assets required to connect to the transmission system	Not paid by Suppliers, possibly paid by directly connected demand, depending on connection.	Usually paid by generators, again depending on connection.	May be paid by DNOs, depending on connection.
BSUoS- The amount charged for the service of balancing the transmission system.	Paid by directly connected demand and Suppliers.	Paid by generation.	Not paid by DNOs
TNUoS - The amount charged for the building, operation and maintenance of the transmission system	Paid by Suppliers. Supplier TNUoS includes a locational element and a residual charge. How are suppliers charged?	Paid by generation. Generator TNUoS includes a locational element, residual charge, local circuit charge and substation charge. How are generators charged?	Not paid by DNOs

Table 1: Who pays which tariffs?

**Transmission connected generators are those with a Bilateral Connection Agreement (BCA) connected at 275kV or above in England & Wales or 132kV and above in Scotland. For further information on charges paid by embedded generation (i.e. those connected within the distribution networks), please refer to our separate briefing note to follow.*

Connection Charging

For assets installed solely for, and only capable of use by, an individual User (thus land purchase costs are excluded, but civils are included) - the connection charge recovers the cost of the assets required. Whether you have connection assets or not is detailed in your Bilateral Connection Agreement (BCA).

The methodology is detailed in the Charging and Use of System Code – the CUSC, Section 14 Part 1 and is non-discriminatory between Users or classes of User.

The basic connection charge has two components:

- A non-capital component covering charges for maintenance and transmission running costs, for which both pre and post vesting assets are treated in the same way
- A capital component for which there are slightly different options available for pre and post vesting assets, based on the Gross Asset Value (GAV) and the Net Asset Value (NAV) of the connection assets.

When first connecting to the system there is the option to pay a 'capital contribution' towards your connection assets or not, meaning there is a choice to pay a lump sum towards the connection charge (and thereby reduce or eliminate future connection charges). This contribution can only be made towards the capital component of the charges.

What is BSUoS?

BSUoS is the Balancing Services Use of System charge and reflects the cost of balancing the system - for example running the national control room, frequency response arrangements, other ancillary services and constraint costs (paying generators to turn on or off to maintain system security).

BSUoS charges are charged on a half hourly basis, and are based on the *volume* of energy put onto or taken off the transmission system in that time. For each half-hour, the BSUoS tariff is set as a £ / MWh tariff. Both generation and demand pay BSUoS charges, although interconnectors do not since August 2012.

The tariff for BSUoS is set *ex post* meaning that the tariff only becomes known after the half hour period has taken place. Further detail on balancing services can be found detailed in the CUSC Section 4, with the charging methodology detailed in the CUSC Section 14 part 2.

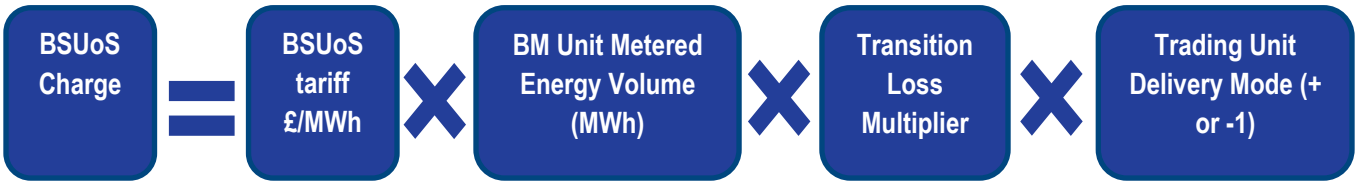


Figure 1: BSUoS tariffs

Monthly Balancing Service Summary Reports are available online at:

http://www2.nationalgrid.com/UK/Industry-information/Electricity-transmission-operational-data/Report-explorer/Services-Reports/

For historical charges and the latest forecast of BSUoS, please refer to the page:

http://www2.nationalgrid.com/UK/Industry-information/Electricity-system-operator-incentives/bsuos-forecast/

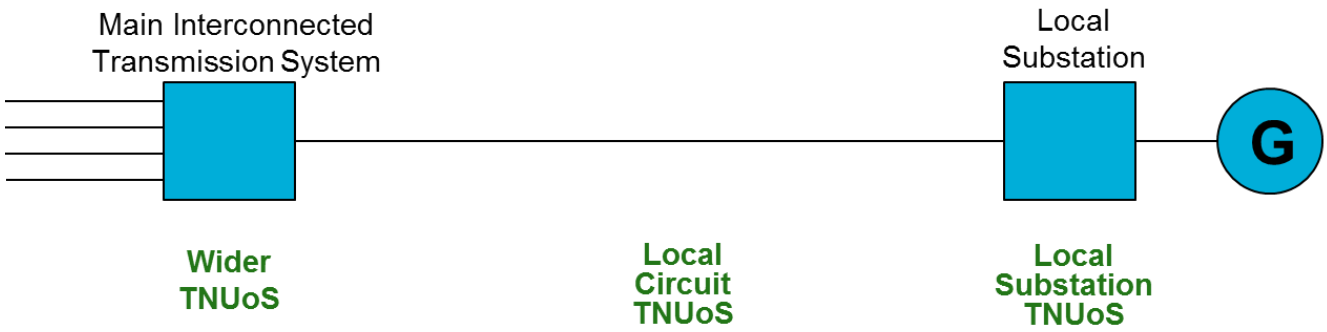
What is TNUoS?

TNUoS aims to recover allowed revenue for Transmission Owners, which reflects the cost of building and maintaining transmission infrastructure. The charging methodology is detailed in section 14 of the Charging and Use of System Code – the CUSC.

How are TNUoS charges cost reflective?

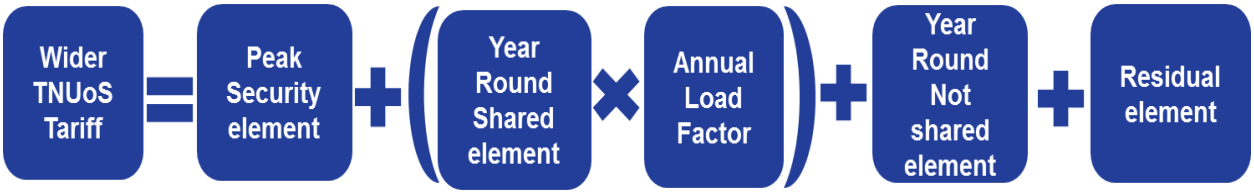
TNUoS tariffs aim to be cost reflective in order to drive efficient decision making in the market. Tariffs are broken down into three main categories:

1. The Locational Charge (Wider TNUoS) – calculated by the Transport model, which seeks to model the incremental cost of power being added to the system at different geographical points.
2. The Residual Charge (Wider TNUoS) – to ensure Transmission owners recover the full revenue they are entitled to as set by their price controls.
3. The Local Circuit Charge (Local Circuit TNUoS) – *only paid by generation*.
4. The Substation Charge (Local Substation TNUoS) – *only paid by generation.*



How are generators charged?

Generators are charged according to the **Transmission Entry Capacity (TEC)** they hold each year. This is the maximum amount of power they can put on the system at any one time. The peak element of the tariff looks at investment to secure peak demand. Intermittent generators such as wind farms are not liable for this tariff element as the SQSS currently assumes they do not drive investment to secure peak demand.



The year round shared element looks at the extent to which generators can share infrastructure, which is why it is dependent on a generator's annual load factor (a measure of a generator's

actual output compared to maximum output over a year). It will also be dependent on the generation mix in an area. All generators currently pay the not-shared element and the residual.

Based on the December 2015 Draft 2016/17 Tariffs, generators are forecast to pay 16.8% of the TNUoS value. This is to ensure compliance with EU regulation 838/2010 which states that average generation tariffs should range from €0 to €2.50 /MWh.

The Local Circuit Charge and Substation charge (Generators Only)

The local circuit refers to the infrastructure between the location of generation and their first connection to the MITS (the Main Integrated Transmission System). It incorporates the effect of the presence of a new generator on the system. A MITS node is a predetermined place on the system where your local circuit can connect. The nodes are a product of system evolution and are defined as; Grid Supply Point connections with 2 or more transmission circuits connecting at the site *or* connections with more than 4 transmission circuits connecting at the site. If a generator connects directly into the MITS then they may not incur a local circuit charge.

Generators are also charged for the first substation they connect to. The charge is dependent on the voltage and redundancy of the substation.

You can read more in our customer briefing note *'How are Generators charged for TNUoS?'*

How are suppliers and directly connected demand charged?

From a TNUoS perspective there are 2 'types' of demand – half hourly metered (generally commercial) and non-half hourly (generally domestic, or smaller premises that do not have a smart meter).

Half hourly customers are charged according to the average demand (MW) they take over the 3 'Triad' periods each year, on the basis of a £/kW tariff. Triads are defined as 3 half-hour settlement periods with highest system demand between November and February, separated by at least ten clear days. You can read more in our customer briefing note on Triads.

Non half hourly customers are charged according to the sum of their annual consumption between 4 and 7pm (kWh), and are charged on the basis of a p/kWh tariff.

For suppliers, there is a locational element to the charge (across 14 demand zones) plus a residual.

Based on the December 2015 Draft 2016/17 Tariffs, Suppliers are forecast to pay 83.2% of the TNUoS value.

You can read more in our customer briefing note *'How are Suppliers charged for TNUoS?'*

Disclaimer

In the event of any inconsistencies between this guidance note and the CUSC, the NGC Use of System Charging Methodology or the BSC, then the CUSC, the NGC Use of System Charging Methodology or the BSC will take precedence.

The CUSC all Code subsidiary documentation can be downloaded from the National Grid Website. The Statement of the Use of System Charging Methodology and the CUSC can be downloaded from the website.

For more information please contact the BSC Service Desk at bscservicedesk@cgi.com or call 0870 010 6950.