Transmission Losses

This guidance provides information about the Transmission System, and how Transmission Losses are treated under the BSC.

The Transmission System

The UK Transmission System is a high voltage electricity network. The network transfers energy from Transmission connected Power Stations to Distribution Networks. These Distribution Networks then transfer energy to our homes and businesses.

The Transmission System also transfers energy via Interconnectors to and from France, the Netherlands, Northern Ireland and Ireland. Businesses with high energy consumption may also be directly connected to the Transmission System; these tend to be large factories.

What about losses on the Distribution Networks?

Line Loss Factors (LLFs) account for Distribution Losses.

You can find out more on the LLFs page of the BSC Website.

Who owns the Transmission System?

Location	Owned and Maintained by	Transmission Voltages
England and Wales	National Grid Electricity Transmission Ltd	400kV, 275kV and 132kV
South of Scotland	SP Transmission Ltd	400kV, 275Kv and 132kV
North of Scotland	Scottish Hydro-Electric Transmission Ltd	400kV, 275Kv and 132kV

When transferring power across the Transmission System, some of the power is 'lost'. This lost power is known as Transmission Losses and currently accounts for about 2% of the electricity transmitted.

Treatment of Losses under the BSC

Determining how much energy has been Lost

Transmission Losses on the System is defined in the BSC as the sum of Primary BM Unit Metered Volume over all Primary BM Units (with Primary BM Units that import having a negative value of Primary BM Unit Metered Volume). This is effectively the difference between Transmission System connected generation and the offtake from the Transmission System at Transmission System connected demand sites and Grid Supply Points.

What is a Trading Unit?

A Trading Unit can be one or more Primary Balancing Mechanism (BM) Units (BM Units). By default, a Trading Unit is a single Primary BM Unit, called a Sole Trading Unit You can find out more about Trading Units in our Trading Units guidance.

Allocating the Losses

Transmission Losses are allocated by scaling up or down the Metered Volume of each non interconnector BM Unit. We do this via Transmission Loss Multipliers (TLMs).

For each Settlement Period there are two TLMs calculated for each Zone, a Delivering TLM and an Offtaking TLM. The Delivering TLM applies to all non-interconnector Primary BM Units that are part of a Delivering Trading Unit in a specific Zone. This scales down the Metered Volumes. The Offtaking TLM applies to all non-interconnector Primary BM Units that are part of an Offtaking Trading Unit in a specific Zone. This scales up the consumption of these units.

A Zone is the geographic area in which the following lie:

- a GSP Group (there being no more than one GSP Group in any one Zone);
- any part of an Offshore Transmission System which connects directly to that GSP Group; and/or
- any part of an Offshore Transmission System which connects to the onshore AC Transmission System at a point within the geographic area of that GSP Group.

There are 14 Zones in total.

Interconnector BM Units are assigned a TLM of 1 and are therefore exempt from Transmission Losses.

Secondary BM Units use the same TLM as the Base Trading Unit for the GSP Group that it is registered to.

The TLM adjusted Metered Volume for each BM Unit is described as the BM Unit's 'Credited Energy'.

What is a Delivering Trading Unit?

Trading Units where the sum of the Metered Volume is greater than zero.

What is an Offtaking Trading Unit?
Trading units where the sum of the Metered Volume is less than zero.

The TLM Calculation

The TLM calculation uses a parameter known as α which allocates the losses between non interconnector Delivering and non interconnector Offtaking Trading Units. A proportion of the losses (α) is allocated to non interconnector Delivering Trading Units, and the remaining (α-1) is allocated to non interconnector Offtaking Trading Units.

α is currently set to 0.45, meaning that 45% of Transmission Losses are allocated to non interconnector BM Units in Delivering Trading Units, and 55% to non interconnector BM Units in Offtaking Trading Units. The rationale for this split is that generators connected to the Transmission System have energy metered on the high voltage side of the generator transformer. This means the losses in the transformer are allocated to the generator, whereas energy transferred from the Transmission System to a Distribution System is measured on the low voltage side of a Grid Supply Transformer, so the losses in the transformer are included in the overall Transmission Losses.

The TLM calculation also involves Transmission Loss Factors (TLFs) which vary the weighting of Transmission Losses allocated to individual BM Units. TLFs allow for the allocation of different Transmission losses depending on the geographical location of the BM Unit.

Read BSC Section T2 to see the full calculation that determines Transmission Loss allocation.

Need more information?

For more information please contact the **BSC Service Desk** at bscservicedesk@cgi.com or call **0370 010 6950**.