

Project Manager  
Energy Market Investigation  
Competition and Markets Authority  
Victoria House  
Southampton Row  
London  
WC1B 4AD

Email to: david.fowlis@cma.gsi.gov.uk and energymarket@cma.gsi.gov.uk

11 November 2016

### **Electricity Market Investigation (Electricity Transmission Losses) Order 2016: Consultation on Draft and Modified Draft**

We welcome the opportunity to comment on the CMA's draft Energy Market (Transmission Losses) Order (updated). We provide detailed comments on the draft order in the attachments to this letter. Our headline points are set out below.

We do not agree with the suggestion that Transmission Loss Factors (TLF) be adjusted by a constant TLFA<sub>s</sub> in each season "where TLFA<sub>s</sub> is the Transmission Loss Factor Adjustment, a value which is to be determined annually for each BSC Season in order to ensure that, as far as possible, the Adjusted Seasonal Zonal TLF values have a zero net aggregate effect on Delivering Transmission Losses Adjustment values." Manipulating the allocation of losses allocated locationally by TLFs and losses shared non-locally by TLMOs in this manner is arbitrary in the context of the Balancing and Settlement Code (BSC). We think TLFs should be adjusted with the aim of achieving a fixed division between delivery and offtake of both losses allocated locationally and of losses allocated non-locally. This would greatly simplify understanding of the variables used in the BSC and their physical meanings, as described in detailed comments attached.

We consider changes to supply and generation licences unnecessary and inconsistent with existing obligations, and potentially discriminatory compared with unlicensed parties. It is not within the power of generation or supply licensees to override the transmission licence conditions relating to the BSC, and licensees are required to comply with the BSC. Having a licence condition under which a licensee may be expected to be non-compliant with the BSC seems inappropriate and contradictory. If the Transmission Company is unable to comply with the order on it, other licensees should not be subject to licence non-compliance in relation to the BSC as a result.

**EDF Energy**  
40 Grosvenor Place, Victoria  
London SW1X 7EN  
Tel +44 (0) 20 7752 2200

[edfenergy.com](http://edfenergy.com)

*EDF Energy plc  
Registered in England and Wales  
Registered No. 2366852  
Registered office: 40 Grosvenor Place,  
Victoria, London SW1X 7EN*



This response and attachments are not confidential.

Yours sincerely,

**Paul Delamare**  
**Head of Customers Policy and Regulation**

## Attachment 1

### Comments on The DRAFT ORDER – CONSULTATION

#### The Energy Market Investigation (Electricity Transmission Losses) Order 2016

#### Comments on Schedule 1 – Calculation of Transmission Loss Factors (suggested additional text shown in red text)

*“4(f) in relation to a BSC Year, BSC Spring shall be considered to be the periods 1st April to 31st May and 1st March to 31st March in that BSC Year.”*

This would be a sensible place to describe all/other seasons; BSC Summer from 1 June to 31 August, BSC Autumn from 1 September to 30 November, and BSC Winter from 1 December to 28 or 29 February as appropriate. The term BSC Season is used elsewhere in the order; an alternative approach would be to include it as a defined term with reference to the BSC.

Paragraph 6. A clause should be included in the definition of a zone to capture non-GSP Group connections. Transmission-connected generation and demand and interconnectors are not part of a GSP Group, and some BM Units connected within a distribution system, such as licensed generators, are not considered part of a GSP Group for most purposes. However, all boundary flows must be allocated to a zone for the purposes of the proposal. For example, (i) could say: “a GSP Group (there being no more than one GSP Group in any one Zone) **and any other transmission or distribution user boundary connections deemed to fall within the same geographical area**”. The BSC will contain provision for deciding the most appropriate zone for connections which fall between different distribution systems.

*“12. The reference network mapping statement (or prevailing network mapping statement as the case may be) shall be updated from time to time so as to reflect any changes to, or in respect of, the list of Nodes, the definition of any Zone, BM Units, Transmission System Boundary Points or Systems Connection Points.”*

Paragraphs 10(b), 11 and 12 seem to overlap without being fully consistent. Paragraph 10(b)(i) refers to approval of the reference network mapping statement in accordance with 11 and 12, but these make no reference to approval. 10(b)(iii) describes updating of the prevailing network mapping statement, as does 12. It should be clarified that the reference network mapping statement is determined each year for the purpose of determining TLFs for the reference year, and the prevailing network mapping statement is determined as required for the purpose of mapping operational BM Units to Zones.

Paragraph 13(a) refers to Transmission Network Data in terms of nodes and AC electrical properties between them. The solution being developed for HVDC circuits may require data in a different form, and reference should be made to this, e.g.

“(ii) for each such pair of Nodes, values of the resistance and the reactance between the Nodes, or in the case of HVDC circuit Nodes, the resistance and other information as may be required to include the circuits in the Load Flow Modelling; and”

17(c)(ii) The BSC workgroup has discussed the fact that whereas:

(a) the power flows input to load flow modelling would include interconnector flows and, in the preferred method of modelling internal HVDC links, the flows at either end of those links, and

(b) load flow modelling would determine a TLF for the for relevant nodes,

those nodes are not considered boundaries to the network for the purpose of allocating the costs of transmission losses, since interconnector and HVDC nodes are considered part of the network and are not subject to relevant loss adjustments in settlement.

For this reason, it has been proposed in the workgroup that the TLFs for those nodes should not be included in the averaging for the relevant zone, so that the average for the zone remains reflective of the TLFs of those nodes which will be subject to it.

Inclusion of CMA revised text (4 November) *“disregarding any power flows to or from an Interconnector or any part of the Transmission System used for the transmission of high voltage direct current;”* is consistent with workgroup discussion, but we would suggest a qualification to this:

*“disregarding any power flows to or from an Interconnector or any part of the Transmission System used for the transmission of high voltage direct current insofar as those flows are effectively excluded from the allocation of transmission losses under the BSC”;*

This would avoid the need to amend the order if the treatment of interconnectors and HVDC flows under the BSC were changed in future.

17(e) CMA revision proposes addition to scaled seasonally and zonally averaged TLF of a quantity TLFAs “Adjusted Seasonal Zonal TLF”:

*“where TLFAs is the Transmission Loss Factor Adjustment, a value which is to be determined annually for each BSC Season in order to ensure that, as far as possible, the Adjusted Seasonal Zonal TLF values have a zero net aggregate effect on Delivering Transmission Losses Adjustment values.”*

Delivering Transmission Loss Adjustment value is introduced but is undefined in the order. We assume it is intended to be TLMO+ as defined in the BSC. If this requirement is retained, a definition should be included in the Order.

We understand the desirability of “normalising”/“shifting” raw TLF values from their natural relativity to the arbitrary reference slack node in load flow modelling in order to give the shifted values of TLF and TLMO a stable notional reference point from season to season and year to year.

However, we think that defining that reference level as one which aims to fix TLMO+ to represent the average level of total losses allocated to all delivery will complicate understanding of terms used in the BSC and remove symmetry between delivery and offtake. It will create complexity and perpetuate misunderstanding in future.

Under the adjustment approach suggested by the CMA, the TLFs would represent an allocation of both variable and fixed losses, in different proportions for delivery and for offtake, and the TLMOs would also represent a shared allocation/adjustment of both variable and fixed losses, in different proportions again. Applied to delivery, the TLFs alone would allocate nothing overall (on average), and TLMO would allocate 45% of total losses as currently. Applied to offtake, the TLFs alone would allocate all the variable losses overall (on average), which TLMO for offtake would give back as a shared adjustment at the same time as allocating 55% of total losses. So TLMO for offtake would effectively represent 55% of other losses minus 45% of variable losses, instead of 55% of other losses plus 55% of variable losses now, and would experience a significant step reduction on the transition.

We think TLFs should be adjusted with the objective of setting the reference point for all TLFs and TLMOs, for both delivery and offtake, to be the notional balancing point which allocates 45% of losses to delivery and 55% to offtake, as currently. This would mean adjusted semi-marginal TLFs alone on average allocate 45% of variable losses to delivery and 55% to offtake, and resulting TLMOs alone share 45% of other losses to delivery, and 55% to offtake. This simplifies representation of locationally allocated losses and non-locationally allocated losses, and simplifies understanding of TLFs and TLMOs used in settlement. TLFs would represent the locational allocation of variable losses, and TLMOs would represent the non-locational allocation of other losses and allocation errors caused by use of zonally and temporally averaged TLFs or values other than semi-marginal.

We think this can probably be achieved by adjusting TLFs by the following quantity:

$$\{\alpha \cdot \sum_z (\text{RawTLF}_{zj} \cdot \text{QM}_{zj}^+) - \sum_z^+ (\text{RawTLF}_{zj} \cdot \text{QM}_{zj}^+)\} / \{\sum_z^+ (\text{QM}_{zj}^+) - \alpha \cdot \sum_z \text{QM}_{zj}\}$$

(or  $\{(1-\alpha) \cdot \sum_z (\text{RawTLF}_{zj} \cdot \text{QM}_{zj}^-) - \sum_z^- (\text{RawTLF}_{zj} \cdot \text{QM}_{zj}^-)\} / \{\sum_z^- (\text{QM}_{zj}^-) - (1-\alpha) \cdot \sum_z \text{QM}_{zj}\}$  which is the same)

Subject to averaging over sample periods for which TLFs are determined.

With this approach, when TLFs are initially introduced there would be a step change in both TLMOs towards zero from their current levels (which are negative for delivery, positive for offtake), as the variable losses are represented instead through TLFs. Thereafter the TLMOs should stay relatively stable, unless significant changes to the allocation of variable losses by locationally varying TLFs are made. For example, use of marginal TLFs would over-represent actual variable losses, and this error would change the values of TLMO away from zero in either direction.

Without such normalisation, it is observed from P350 analysis that TLMOs both shift downwards compared to now, more so for offtake than delivery. This is partly a consequence of the location of the reference node in load-flow modelling being in a relatively unfavourable location causing TLFs to be biased positive, so that a negative shift in TLMOs occurs.

In summary, we do not think a deliberate biasing of shares of variable and fixed losses between TLFs and TLMOs to achieve a particular TLMO value for generation should be performed. This is arbitrary and unnecessary.

We support an attempt to “normalise” TLFs at source so that a consistent division between delivery and offtake of variable and fixed losses separately is targeted, so that TLFs represent locational allocation of losses and TLMOs represent shared allocation, and future changes in both TLMOs are minimised.

#### **Comments on Schedule 4 – Amendment to the Supply Licence and Generation Licence**

We consider changes to supply and generation licences unnecessary and inconsistent with existing obligations, and potentially discriminatory compared with unlicensed parties.

It is not within the power of generation or supply licensees to override the transmission licence conditions relating to the BSC, and licensees are required to comply with the BSC. Having a licence condition under which a licensee may be expected to be non-compliant with the BSC seems inappropriate and contradictory. If the Transmission Company is unable to comply with the order on it, other licensees should not be subject to licence non-compliance in relation to the BSC as a result.

Note that although distribution companies as BSC Parties are required to support the BSC process, no additional licence conditions are placed on them.

Proposed Supply Licence Condition 11-11.2A refers to Licensee’s Imbalance Charges, while proposed Generation Licence Condition 9-7A refers to Licensee’s charges. The effect of the scheme affects the BSC Trading Charges of all BSC Parties including Licensed Generators and Licensed Suppliers, and there seems no reason to distinguish.