

Title of Modification Proposal

Introduction of a Zonal Transmission Losses scheme with Transitional Scheme
Submission Date

TBC

Description of Proposed Modification

Section T of the BSC contains the term “transmission loss factor” (TLF), currently set to zero.

We propose that, subject to feasibility, from 1st October 2007, the value of TLF be amended from zero to a zonal factor to be derived *ex-ante* and applied separately to generation and demand by zone, as per P198. We propose that, concurrent to the introduction of zonal TLFs, a transitional scheme is applied to existing generating plant meaning CVA-registered BM Units, including interconnector units, with their production/consumption flag set to “production” (“Production BMUs”). The transitional scheme would allow time-limited retention of existing transmission loss factors for fixed volumes of energy according to a mechanism similar to the EU ETS. The mechanism would allow investors in existing plant to retain their existing allocation of losses over 15 years, a reasonable investment horizon. It would also retain the incentive properties of the zonal factors for the generating units to which it applies.

The scheme would not cover BM Units with their production/consumption flag set to “consumption”, because suppliers do not face long-term exposure to risks arising from new methods of calculating TLFs and because it is practically impossible under the transitional scheme to preserve the incentive properties of the zonal TLF scheme for consumption units. Embedded generators would be covered only if part of a CVA-registered “Production BMU”.

The combination of new TLFs as per P198 and the transitional hedging scheme forms the core of our proposal, which is consistent with, but not contingent on, the P198 modification proposal.

Zonal TLFs

The zonal TLF scheme would be derived *ex ante* for application to all BMUs within a zone (the “applicable zone”) for a relevant period (the “applicable period”). The proposed scheme would retain the current process for allocating transmission losses to generation and demand (45% of transmission losses to production accounts and 55% to consumption accounts).

Nodal marginal TLFs would be derived for each BMU using a load flow model which would simulate a previous period from a representative collection of historic power system conditions that provide a representation of the applicable period (the “reference year”).

The transmission company would provide appropriate data for the network simulation. BSCCo would provide a load flow specification for the load flow model. The calculation of the annual TLFs would be under the governance of the BSC. A TLF Agent or a service provider would undertake the load flow modelling. The modelling process and load flow model will be subject to

independent review by the Panel and BSCCo.

Zonal factors would be derived from nodal data, volume- and time-weighted for each zone for each BSC year (from April to March) for both generation and demand. They would be applicable by geographical zone for each GSP Group. The zonal TLFs would be adjusted by an appropriate scaling factor, fixed under the governance of the BSC at a level that allocates variable transmission system losses on an average basis and other losses on a uniform basis. The zonal TLFs would be published on the Elexon website at least one month prior to the applicable period alongside the mapping of BMUs to the applicable zones.

The volume of transmission losses in each Settlement Period for the applicable period would be allocated amongst individual BMUs in settlement by applying the relevant zonal TLFs.

Transitional Scheme

These proposed changes to TLFs would change short term signals in the hope of improving short-term efficiency, but the transition to the new values would create windfall gains and losses for participants, creating unnecessary risk which individual participants cannot hedge by contract and which therefore damages long-term efficiency.

To enhance long-term efficiency (and hence competition in generation and supply), we propose a transitional scheme which mitigates the impact of changes in TLFs on existing generators.

The following F-factor hedging scheme retains 100% of the short-term incentives associated with the proposed TLFs. By maintaining the short-term incentives the F-factor scheme will continue to encourage the efficient operation of the market. Under the F-factor proposal, each generating BMU would be allocated losses on the following basis:

- in relation to a fixed quantity of output (F), all Production BMUs (e.g. BMUs with a generation capacity in the BSC strictly greater than zero on the date of the approval of this modification by the Authority, or over some other specified period) would receive an allocation at a rate equal to 45% of average losses, as at present. This F-factor allocation would be assigned to the BMU, but the party responsible for the BMU would be able to trade the allocation, either by a side contract outside the BSC or by transferring it to another Party through the CoBo process;
- for the difference between the fixed quantity (F) and actual metered production (QM), which may be either positive or negative, the generating BMUs would receive an allocation equal to the new loss factor (i.e., $TLF * (QM-F)$); and
- any remaining balance of losses (positive or negative) would be allocated to each generating BMU as a uniform additive shift in the allocation of losses to metered generation (QM) according to a 45/55 split between generation and suppliers, as at present.

Thus, overall, generators (Production BMUs) would be allocated losses of the following basis:

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(mandatory by BSCCo)

- QM * (Zonal TLF as calculated under P198)
- + F * (Average Loss Factor as at present - Zonal TLF as calculated under P198)
- + QM * (Flat-rate adjustment to allocate 45% of total losses to generation).

In this formula, the first element corresponds to the zonal TLF proposed under P198. The second element represents the stabilizing F-factor, in which the “Average Loss Factor” would take the same value as $TLMO_j^+$ does at present. The third element corresponds to $TLMO_j^+$ under P198, suitably amended to recognise the second element.

F-factors would last for a period of 15 years from the date of the Authority’s approval of this modification, a period which represents a reasonable investment horizon. F-factors would be based on metered volumes in a single Baseline Period, which we propose to define as the year ending 31 March 2006 or any multiple of consecutive 12-month periods for which data is available at the date of calculation of the F-factors. F-factors would be defined on a monthly basis, or such other period as seems appropriate, for each BM unit in order to average out any atypical variation in output (such as forced outages) on some days in a month. Smoothing out daily fluctuations provides more scope for individual participants to remain in balance with their F-factor within the balancing mechanism, if they wish to do so. A monthly approach may also allow some simplification of the BSC payments, which are settled monthly in arrears.

Description of Issue or Defect that Modification Proposal Seeks to Address (mandatory by originator)

Under the current BSC arrangements all transmission system losses are allocated to BSC parties in proportion to metered energy, whether production or consumption on a uniform allocation basis (45% to production accounts, 55% to consumption accounts). Therefore the current system provides no signal as to the different effect on transmission losses of generating and consuming electricity in different parts of the country.

The proposed scheme combines a transitional hedging scheme with the redefinition of TLFs proposed under P198. Therefore, if P198 addresses defects in the BSC, this proposed modification addresses exactly the same defects, whilst also providing a beneficial method of avoiding unnecessary windfall gains and losses.

The redefinition of TLFs as per P198 provides short-term locational signals, but without the transitional scheme it would contribute to instability in long-term investment signals and create the potential for stranded costs. The transitional scheme mitigates the potential effects of new TLFs on investment signals and sunk costs over a reasonable investment horizon. This will contribute to a lower cost of capital for investment in facilities to generate electricity, and will improve the efficiency of investment.

The risk of unpredictable changes in costs and prices creates risk that affects the cost of capital. Analysis conducted by NERA during 2003/04, suggested that the real pre-tax weighted average cost of capital was 10.5% pa for merchant plant and about 7% for plant with a PPA. This example does not identify the specific effect of potential variation in transmission losses, but it illustrates the importance of a long term stable investment climate on the cost of capital. Regulatory risk (such as the risk of regulatory decisions that reallocate costs, like P198) can make investors less willing to commit funds to irreversible investments, or more willing to spread investment risks (thereby ignoring the current locational signals).

By offering investors the prospect of capturing the TLFs current at the time of their investment, even when a new method of calculating TLFs is introduced, the proposed modification will make investors more willing to invest, reduce costs and increase long-term efficiency.

Impact on Code

Changes to Section T of the BSC.

Impact on Core Industry Documents or System Operator-Transmission Owner Code

Not known

Impact on BSC Systems and Other Relevant Systems and Processes Used by Parties

Not known

Impact on other Configurable Items

Not known

Justification for Proposed Modification with Reference to Applicable BSC Objectives

This modification proposal achieves BSC objectives A, B and C in the same way and to the same extent as modification proposal P198, if it should prove to be the case that P198 better promotes these objectives.

In addition the transitional scheme will improve the efficient operation of the code and will promote effective competition in generation and supply by protecting market participants from windfall gains and losses on sunk investments, encouraging investment and enhancing long term efficiency. A stable regime lowers risks to participants. As a result, investors will have more confidence in any incentives provided by the scheme and will be more willing to invest in response to those signals. The scheme will therefore reduce the overall cost of producing electricity and the overall market price.

Both features of the proposal together therefore promote a lower cost of new entry, thus meeting BSC objective B, and hence stimulate competition in the market for generation, thus meeting BSC objective C.

Urgency Recommended:

No, however we recommend that the proposal be progressed quickly within the existing administrative procedures of the BSC in order that it can be considered concurrently with modification proposal no. P198.

Justification for Urgency Recommendation:

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Attachments: No