

**Modification Proposal – BSCP40/06****MP No: 203**  
*(mandatory by BSCCo)***Title of Modification Proposal** *(mandatory by originator):*

Introduction of a seasonal Zonal Transmission Losses scheme

**Submission Date** *(mandatory by originator): 26 June 2006***Description of Proposed Modification** *(mandatory by originator)*

This modification is based on the seasonal alternative solution to P198 developed at the modification group but without any phasing. Seasonal zonal Transmission Loss Factors (TLF) (the “applicable TLFs”) would be derived *ex ante* for application to generation and demand BMUs within a zone (the “applicable zone”) for each of the four BSC seasons. 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 from a representative collection of historic power system conditions using an intact network simulation (the “load flow model”) during a previous period (the “reference year”) that provided a representation of the settlement periods in each of the BSC seasons. 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 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.

The applicable period for the seasonal zonal marginal TLFs under this proposal would be the BSC year (from April to March). Seasonal zonal marginal TLFs would be derived from nodal figures by volume-weighted averaging and time-weighted averaging for applicable zones. The applicable zones would be the geographical area in which a GSP Group lies, determined by the Panel (applying such criteria as it shall decide in its discretion). The zonal TLFs would be adjusted by an appropriate scaling factor (the “applicable scaling factor”, which was set at 0.5 under P82). The value of this scaling factor would be fixed under the governance of the BSC at a level that, to a first approximation, (a) allocated the heating element of the transmission system losses on an average basis, with little under or over recovery (heating variable losses), and (b) resulted in other transmission losses being allocated on a uniform basis (fixed losses) through the parameters TLM0. Any inaccuracy in (a) would be compensated for in (b). Separate Zonal TLFs will be calculated for both generation and demand.

The zonal TLFs for each season would be published on the Elexon website at least one month prior to the applicable period. BSCCo will map BMUs to the applicable zones. This mapping would be published at least one month prior to the application of TLFs, made available to BSC parties in electronic format and be revised from time to time. 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, TLMO+j and TLMO-j.

In order to provide an opportunity for parties to prepare for the introduction of a zonal losses scheme, we propose an implementation date of April 2008. The scheme should be cost effective, not introduce unnecessary or untoward risks on parties and be simple to audit.

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*(mandatory by BSCCo)***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 cost of heating (variable) transmission losses is allocated amongst BSC Parties regardless of the extent to which they give rise to them. This means that customers in the north of GB and generators in the south of England have to pay some of the costs of transmitting electricity to locations miles away from the source of generation.

The proposed seasonal zonal scheme will enable the variable costs of transmission losses to be allocated on a cost-reflective basis and reflected on parties that cause them. The modification would remove the current cross subsidies and associated discrimination that is inherent in the uniform allocation of transmission losses.

The current allocation of transmission losses fails to provide potential connectees to the transmission system with appropriate signals regarding the implications of siting in different parts of the country. This may give rise to inefficient decisions regarding the development of new power stations or connection of new industrial loads. This results in the inefficient use of energy and unnecessary carbon emissions. A seasonal zonal transmission losses scheme would enable long-term locational signals for losses to be introduced into the GB electricity market.

It is anticipated that to the extent that the seasonal zonal charging of losses influences the use of existing generation and the location of future investment, it will reduce the total amount of electricity transmitted and therefore increase the efficient use of energy.

Earlier studies of a similar proposal have indicated that such a scheme could reduce carbon emissions in the short term by between 2000 tonnes p/a and 6000 tonnes p/a. These savings could increase to between 48,000 tonnes p/a and 127,000 tonnes p/a in the longer term.

The modification would be based on work already completed on a seasonal alternative to P198 at the modification group but would not include any linear phasing. The work at the group has identified that there are additional benefits arising from a seasonal scheme when compared with an annual scheme in the form of the reduced overall cost of losses.

**Impact on Code** *(optional by originator)***Impact on Core Industry Documents or System Operator-Transmission Owner Code** *(optional by originator)***Impact on BSC Systems and Other Relevant Systems and Processes Used by Parties** *(optional by originator)*

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### **Impact on other Configurable Items** *(optional by originator)*

### **Justification for Proposed Modification with Reference to Applicable BSC Objectives** *(mandatory by originator)*

The proposal will better facilitate BSC Objective A relating to the efficient discharge by the licensee (NGC) of the obligations imposed upon it by its licence. A seasonal zonal transmission losses scheme will remove market distortions and the discrimination that exist in the present arrangements.

The proposal will better facilitate BSC Objective B by enhancing the efficient, economic and co-ordinated operation by the licensee (NGC) of the licensees transmission system. Adoption of a seasonal zonal transmission losses scheme will remove cross subsidies which the present uniform charging for transmission losses create. A seasonal zonal transmission losses scheme will therefore enhance efficiency through more cost reflective charging which could be expected to influence both short term plant despatch and long term business decisions influencing investment in both generation and demand. In addition, cost benefit work during assessment of P198 has demonstrated that a seasonal zonal losses scheme is capable of delivering additional efficiency benefits in terms of reduced overall losses when compared to an annual losses scheme.

This proposal will also contribute to better achieving the BSC objective C relating to the promotion of effective competition in the generation and supply of electricity, and (so far as consistent therewith) and the promotion of such competition in the sale and purchase of electricity. In particular:

- The proposal will introduce a cost reflective allocation of transmission losses according to the degree to which BMUs in an applicable zone give rise to losses;
- The proposal removes the current cross subsidies between customers (north to south) and generators (south to north) that occur through the uniform allocation of transmission losses;
- The allocation of losses to zones will enable the costs to be reflected on generation and demand in a manner that does not unduly penalise individual BMUs;
- A scheme based on the ex ante calculation of zonal loss factors will enable users of the transmission system to estimate the impact and appropriately reflect the costs;
- A seasonal zonal scheme would provide better information to users of the transmission system regarding the implications of siting generation and new load in different parts of the country; and
- In the longer term seasonal zonal allocation of transmission losses would encourage appropriate investment in generation or new load in areas which currently have limited capacity relative either to generation or demand. This will ultimately bring down the overall costs of losses with benefits for customers and the environment.

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**Attachments: Yes / No** *(delete as appropriate) (mandatory by originator)*

**If Yes, Title and No. of Pages of Each Attachment:**