

LEGAL TEXT FOR PROPOSED MODIFICATION P350

SECTION E: BSC AGENTS (V7.0)

Amend paragraph 1.2.5 to read as follows:

- 1.2.5 The services which are the subject of each BSC Service Descriptions, and the name by which the BSC Agent for each BSC Service Description is known in the Code, are set out below:

BSC Service Description	BSC Agent	Abbreviation
Settlement Administration	Settlement Administration Agent	SAA
Funds Administration	Funds Administration Agent	FAA
Balancing Mechanism Reporting	Balancing Mechanism Reporting Agent	BMRA
Energy Contract Volume Aggregation	Energy Contract Volume Aggregation Agent	ECVAA
Central Data Collection	Central Data Collection Agent	CDCA
Technical Assurance	Technical Assurance Agent	TAA
Central Registration	Central Registration Agent	CRA
Supplier Volume Allocation	Supplier Volume Allocation Agent	SVAA
Teleswitch Monitoring	Teleswitch Agent	-
BSC Audit	BSC Auditor	-
Profile Administration	Profile Administrator	-
<u>TLF Determination</u>	<u>Transmission Loss Factor Agent</u>	<u>TLFA</u>

SECTION H: GENERAL (V20.0)

Amend paragraph 1.2.4 to read as follows:

- 1.2.4 Code Subsidiary Documents comprise each of the following documents:

- (a) BSC Procedures;
- (b) Codes of Practice;
- (c) BSC Service Descriptions;
- (d) Party Service Lines;
- (e) Data Catalogues;
- (f) Communication Requirements Documents; ~~and~~
- (g) the Reporting Catalogue-; and
- (h) the LFM Specification.

SECTION T: SETTLEMENT AND TRADING CHARGES (V24.0)

Insert new paragraph 1.3.9 to read as follows:

1.3.9 Data required from the TLFA are Transmission Loss Factors for all BM Units.

Insert new paragraph 1.13 to read as follows:

1.13 Annex T-2

1.13.1 Annex T-2 shall apply for the purposes of the determination of Transmission Loss Factors.

Paragraph 2 shall be amended to read as follows:

2. ALLOCATION OF TRANSMISSION LOSSES

2.1 Delivering and Offtaking Trading Units

2.1.1 For the purpose of scaling for transmission losses, in respect of each Settlement Period,

- (a) a Trading Unit is a "**delivering**" Trading Unit when $\sum_i QM_{ij} > 0$ and
- (b) a Trading Unit is an "**offtaking**" Trading Unit when $\sum_i QM_{ij} \leq 0$

where \sum_i represents the sum over all BM Units belonging to that Trading Unit.

2.2 Transmission Loss Factors

2.2.1 For the purposes of the Code, the Transmission Loss Factor ~~for each BM Unit~~, and factor α , shall be as follows:

- (a) for each BM Unit, TLF_{ij} shall be determined in accordance with Annex T-2=0 for all BM Units, and
- (b) $\alpha = 0.45$.

2.3 Determination of the Transmission Loss Multipliers

2.3.1 In respect of each Settlement Period, for each BM Unit other than Interconnector BM Units, the Transmission Loss Multiplier shall be calculated as follows:

- (a) for all BM Units belonging to Trading Units which in the Settlement Period are delivering Trading Units:

$$TLM_{ij} = 1 + TLF_{ij} + TLMO^+_j$$

- (b) for all BM Units belonging to Trading Units which in the Settlement Period are offtaking Trading Units:

$$TLM_{ij} = 1 + TLF_{ij} + TLMO^-_j$$

where:

$$TLMO^+_j = - \{ \alpha (\sum^+ QM_{ij} + \sum^- QM_{ij}) + \sum^+_{(non-I)} (QM_{ij} * TLF_{ij}) \} / \sum^+_{(non-I)} QM_{ij};$$

$$TLMO^-_j = \{ (\alpha - 1) (\sum^+ QM_{ij} + \sum^- QM_{ij}) - \sum^-_{(non-I)} (QM_{ij} * TLF_{ij}) \} / \sum^-_{(non-I)} QM_{ij};$$

Σ^+ represents the sum over all BM Units belonging to Trading Units that are delivering Trading Units in the Settlement Period;

Σ^- represents the sum over all BM Units belonging to Trading Units that are offtaking Trading Units in the Settlement Period;

$\Sigma^+_{(\text{non-I})}$ represents the sum over all BM Units other than Interconnector BM Units belonging to Trading Units that are delivering Trading Units in the Settlement Period; and

$\Sigma^-_{(\text{non-I})}$ represents the sum over all BM Units other than Interconnector BM Units belonging to Trading Units that are offtaking Trading Units in the Settlement Period.

2.3.2 In respect of each Settlement Period, for each Interconnector BM Unit, the Transmission Loss Multiplier shall be calculated as follows:

$$\text{TLM}_{ij} = 1$$

irrespective of whether the Interconnector BM Unit belongs to a delivering or offtaking Trading Unit in the Settlement Period.

The following new Annex T-2 shall be added immediately after Annex T-1:

Annex T-2: Transmission Loss Factors

1. Introduction

1.1 This Annex T-2 sets out the basis for determining Transmission Loss Factors.

1.2 Transmission Loss Factors will be determined by the TLFA:

(a) by reference to Nodal TLFs determined by the application of the Load Flow Model in accordance with paragraph 8.2; and

(b) in accordance with the further provisions of paragraph 8.

1.3 For the purposes of this Annex T-2:

(a) a "node" is a point on an electrical network at which:

(i) a power flow on to or off the network can occur; or

(ii) two or more circuits (forming part of the network) meet;

(b) a "load flow model" is a mathematical model of an electrical network which represents power flows between pairs of adjacent nodes on the network, and from which nodal TLFs can be determined for each node for given power flows;

(c) a "nodal TLF", in relation to a node on a network and a given power flow at the node, is the rate of change of electrical losses on the network with respect to a change of power flow at that node, with network balance being maintained by the slack node;

(d) the "Load Flow Model" is the load flow model established and adopted by the TLFA in accordance with paragraph 3;

(e) the "slack node" is a node that acts:

- (i) for the purposes of a load flow model, as a sink for power flow surpluses or as a source for power flow deficits arising from inaccuracies in the load flow model; and
- (ii) in relation to each pair of adjacent nodes in a load flow model, as the reference node for calculating the phase angle of the power flow between the nodes;
- (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; and
- (g) for the avoidance of doubt, this Annex T-2 shall take effect so as to require to be done anything necessary to be done before the Relevant Implementation Date of Modification P350 in order to give effect to this Annex T-2 with effect on and from the Relevant Implementation Date of Modification P350.

2. LFM Specification

2.1 The Panel shall, in consultation with the Transmission Company and other Parties and the Authority, establish (to form part of the BSC Service Description for the TLFA) a specification ("**LFM Specification**") for a load flow model for the AC Transmission System, to operate based on the data inputs specified in paragraph 8.2(f), and consistent with the requirements in paragraph 2.2.

2.2 The LFM Specification shall provide for the following assumptions and approximations to be made in the load flow model:

- (a) only electrical losses associated with power flows between adjacent nodes (forming part of the network) ("**Load Flow Model power flows**") will be used in determining nodal TLFs; and
- (b) in respect of the power flow between adjacent nodes it is assumed:
 - (i) there is no Reactive Power component;
 - (ii) the ratio of the change of power flow over a circuit to the injection of power at a given node is not dependent on the overall electrical load on the network;
 - (iii) the sine of the voltage phase angle is equal to the phase angle (as measured in radians); and
 - (iv) the power flow in a circuit is equal to the difference in the voltage phase angles across the circuit multiplied by the circuit susceptance.

3. Load Flow Model

3.1 The TLFA shall establish, and (subject to paragraph 3.2) adopt and from time to time modify, a load flow model which implements and complies with the LFM Specification.

3.2 The TLFA shall not adopt such load flow model or a modification thereof unless the model reviewer has reported to the Panel (in such terms, and as to such materiality, as the Panel may decide) that such model or modification complies with the LFM Specification and the Panel accepts such model or modification; and the TLFA shall not modify the Load Flow Model except as the Panel may instruct or agree.

3.3 The Panel shall appoint, and may from time to time reappoint or replace, an independent expert (the "model reviewer") for the following purposes:

- (a) to inspect and test the Load Flow Model and report to the Panel as to the compliance of the Load Flow Model with the LFM Specification or any particular aspect of the LFM Specification:
 - (i) before the Load Flow Model is first used for the purposes of this Annex T-2;
 - (ii) upon any modification of the Load Flow Model (whether upon a change to the LFM Specification or otherwise); and
 - (iii) on any other occasion on which the Panel decides to obtain such a report; and
- (b) to verify and report to the Trading Disputes Committee as to whether Nodal TLFs were determined in accordance with the Load Flow Model, on any occasion on which it is necessary to do so for the purposes of any Trading Dispute.

3.4 Any report produced by the model reviewer on Nodal TLFs for the Trading Disputes Committee shall be final and binding on all Parties (save in the case of fraud or manifest error) and if a Party refers a Trading Dispute to arbitration under Section W3.6, then save in the case of fraud or manifest error, the arbitrator(s) appointed in accordance with Section H7 shall not have the power to query, review or in any way revise the model reviewer's report on whether Nodal TLFs were, or were not, determined in accordance with the Load Flow Model.

3.5 BSCCo shall enter into a contract of engagement (for the term for which the model reviewer is appointed) with the model reviewer, which shall, inter alia:

- (a) provide terms of reference set or approved by the Panel for the model reviewer; and
- (b) require the model reviewer to enter into a confidentiality undertaking in favour of the TLFA in such terms as the Panel shall reasonably require or approve.

3.6 As regards the Load Flow Model:

- (a) the TLFA shall deposit a copy of the Load Flow Model in escrow with an escrow agent in such form and on such terms and conditions as BSCCo may require; and
- (b) the TLFA shall be responsible for the payment of all fees due to the escrow agent.

3.7 The TLFA shall be required to make the Load Flow Model (and any details thereof) available to the model reviewer and the BSC Auditor (and as may be required by the arbitral tribunal in connection with any arbitration); but shall not be required to make available or disclose the Load Flow Model or details thereof to the Panel, any Panel Committee or Parties other than to BSCCo as required for the provision of the reports set out in Table 9 in Annex V-1 or in accordance with the release terms included in the escrow agreement pursuant to paragraph 3.6.

3.8 Subject to paragraph 3.4, once the Load Flow Model (or any modification thereof) has been adopted by the TLFA, Nodal TLFs which are properly determined by the Load Flow Model shall be definitive; and accordingly:

(a) (without prejudice to any question as to whether such Nodal TLFs were in fact properly determined) no Party may challenge or question on any grounds the validity of any Nodal TLF which was so determined; and

(b) any modification of the Load Flow Model shall have effect only prospectively, that is for the purposes of determining Transmission Loss Factors in respect of BSC Years for which (at the time the modification was made) Transmission Loss Factors have not already been determined in accordance with paragraph 8.

3.9 For the purposes of paragraph 3.8(a), Nodal TLFs are properly determined if they are determined by and only by the application of the Load Flow Model on the basis of data input in compliance with the further provisions of this Annex T-2.

4. Zones, Nodes and Mapping

4.1 For the purposes of this Annex T-2:

(a) a "Zone" is the geographic area:

(i) in which the following lie:

(1) a GSP Group (there being no more than one GSP Group in any one Zone);

(2) any part of an Offshore Transmission System which connects directly to that GSP Group; and/or

(3) 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; and

(ii) which is determined by the Panel (applying such criteria as it shall decide in its discretion) but so that the Zones are mutually exclusive and are contained within the area specified in Schedule 1 of the Transmission Licence;

(b) the Panel may from time to time review and upon reasonable notice to Parties change its determination of any Zones, where there is any change in the GSP Group, any change to a part of the AC Transmission System contained within the Zone, upon the application of a Party or otherwise on its own initiative; provided that a change in the determination of any Zone(s) shall be effective only in relation to BSC Years for which (at the time the change was made) Transmission Loss Factors have not already been determined in accordance with paragraph 8;

(c) the Panel may, but shall not be required to, consult any Party on the determination of any part of the boundary of a Zone where it considers there is material doubt as to such boundary; and

(d) the Panel shall publish a description of the Zones from time to time (but may do so by referring to any other document which describes or identifies the geographic areas determined by the Panel to be the Zones).

4.2 For the purposes of this Annex T-2:

- (a) a "Node" is a node on the AC Transmission System;
- (b) the Transmission Company shall:
 - (i) identify each Node and prepare, keep up-to-date, and maintain, a list of all Nodes, each identified or capable of being identified geographically; and
 - (ii) provide to BSCCo, as soon as practicable, each updated list of Nodes; and
- (c) BSCCo shall publish the same on the BSC Website.

4.3 For the purposes of this Annex T-2:

- (a) a "network mapping statement" is a statement of the following:
 - (i) for each Volume Allocation Unit (other than a GSP Group, or BM Unit embedded in a Distribution System), the Node which represents or best represents that Volume Allocation Unit or (as the case may be) the Boundary Point(s) at which that Volume Allocation Unit is connected to the AC Transmission System (it being recognised that one Node may represent several such points);
 - (ii) for each Node which represents or best represents a Volume Allocation Unit in accordance with paragraph (i), the Zone in which the Node lies or should best be considered to lie;
 - (iii) for each BM Unit, the Zone in which the BM Unit lies, in accordance with what has been established under paragraphs (i) and (ii), except that:
 - (1) Interconnector BM Units lie in the Zone in which (in accordance with paragraph (ii)) the Node for the relevant Interconnector lies; and
 - (2) Supplier BM Units and other BM Units embedded in a Distribution System lie in the Zone which incorporates the geographical area of the corresponding GSP Group; and
 - (iv) for each HVDC Boundary, the Node which represents or best represents the HVDC Boundary; and
- (b) in relation to each BSC Year:
 - (i) the "reference network mapping statement" is the version of the network mapping statement approved by the Panel under paragraph 4.4(b);
 - (ii) for the purposes of determining Nodal power flows under paragraph 8.2(e) the reference network mapping statement shall be used and any update thereof under paragraph 4.4(d) shall have no effect;

- (iii) the "prevailing network mapping statement" is the reference network mapping statement as from time to time updated by BSCCo under paragraph 4.4(d); and
- (iv) the prevailing network mapping statement shall be used to determine the Zone in which each BM Unit is located for the purposes of determining from time to time the Transmission Loss Factor applicable to such BM Unit under paragraph 8.6(a).

4.4 For each BSC Year:

(a) BSCCo shall:

- (i) prepare (on the basis of data relating to the Reference Year, and taking account of the prevailing network mapping statement for the preceding BSC Year) a draft reference network mapping statement;
 - (ii) provide a copy of the draft reference network mapping statement to the Panel and each Party, wherever practicable not later than 31st August in the preceding BSC Year; and
 - (iii) submit to the Panel any representations or comments on the draft statement which were received from Parties within 10 Business Days after the statement was provided under paragraph (ii);
- (b) the Panel shall approve the draft reference network mapping statement with such amendments (if any) as the Panel may decide, taking into account (inter alia):
- (i) any representations and comments submitted to it under paragraph (a)(iii); and
 - (ii) any determination made by the Panel under paragraph 4.5 in relation to a question or dispute which was raised with the Panel within the 10 Business Days referred to in paragraph 4.4(a)(iii) in the preceding BSC Year;
- (c) BSCCo shall, no later than 19th October in the preceding BSC Year, provide the approved reference network mapping statement to the TLFA and the Transmission Company and publish the same on the BSC Website; and
- (d) following the approval of the reference network mapping statement under paragraph (b) BSCCo shall:
- (i) from time to time update the reference network mapping statement (or prevailing network mapping statement as the case may be) 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, HVDC Boundaries or Systems Connection Points and any determination by the Panel under paragraph 4.5 (such updated reference network mapping statement being the prevailing network mapping statement); and
 - (ii) publish each such update of the prevailing network mapping statement on the BSC Website.

4.5 Any question or dispute as to the matters in sub-paragraphs (i) and (ii) of paragraph 4.3(a) shall be determined by the Panel in its discretion, after consultation with the Transmission Company and the Lead Party(ies) of the BM Unit(s) affected by such question or dispute, having regard (so far as appears to the Panel to be relevant) to the parts of the AC Transmission System in which power flows are typically most influenced by changes in power flows at the relevant Node or (as the case may be) the relevant BM Unit.

4.6 The Transmission Company, each Distribution System Operator, the CRA and the CDCA shall cooperate with and provide information as may be required to BSCCo and the Panel in connection with the preparation of each network mapping statement and the determination of any question or dispute under paragraph 4.5.

5. Transmission Network Data and HVDC Boundary Data

5.1 For the purposes of this Annex T-2:

(a) "Transmission Network Data" means the following data relating to the AC Transmission System:

(i) the identity of each pair of adjacent Nodes; and

(ii) for each such pair of Nodes, values of the resistance and the reactance between the Nodes;

(b) Transmission Network Data shall be established on the assumption of an 'intact network', that is disregarding any planned or other outage of any part of the AC Transmission System; and

(c) "HVDC Boundary Data" means the Transmission Company's estimate (based on metering or other available data) of the flow of Active Energy to or from each HVDC Boundary.

5.2 The Transmission Company shall determine Transmission Network Data and the HVDC Boundary Data in good faith and based on its operational knowledge of the Transmission System, and in accordance with any relevant assumption made in the LFM Specification, but in the absence of a manifest error no Party may challenge or question the validity or correctness of the Transmission Network Data or the HVDC Boundary Data determined by the Transmission Company.

5.3 The Transmission Company and the TLFA shall cooperate so as to ensure that the form and medium in which Transmission Network Data and the HVDC Boundary Data is provided by the Transmission Company is compatible with the Load Flow Model and the BSC Agent System on which the Load Flow Model operates.

6. Distribution Network Data

6.1 For the purposes of this Annex T-2:

(a) "Distribution Network Data" means the following data showing power flows from an Offshore Transmission Connection Point to other Grid Supply Points on a Distribution System:

(i) the identity of each Node that represents an Offshore Transmission Connection Point (an "Offshore Transmission Connection Point Node");

- (ii) the identity of each Node on a Distribution System (representing a Grid Supply Point) to which power flows from an Offshore Transmission Connection Point Node (a "**corresponding Node**"); and
 - (iii) the percentage of net energy received by each corresponding Node, of the total energy flowing from the Offshore Transmission Connection Point Node, as an estimated average value for each Reference Year; and
 - (b) Distribution Network Data shall be established on the assumption of an 'intact network', that is disregarding any planned or other outage of any part of a Distribution System.
- 6.2 Each Distribution System Operator shall determine Distribution Network Data in good faith for each Distribution System that it operates, based on the operation of that Distribution System and in accordance with any relevant assumption made in the LFM Specification.
- 6.3 Each Distribution System Operator and the TLFA shall cooperate so as to ensure that the form and medium in which Distribution Network Data is provided by the Distribution System Operator is compatible with the Load Flow Model and the BSC Agent System on which the Load Flow Model operates.
- 6.4 Any question or dispute as to the determination of Distribution Network Data pursuant to paragraph 6.2 shall be determined by the Panel in its discretion, after consultation with the relevant Distribution System Operator, the Transmission Company and the Lead Party(ies) of the BM Unit(s) affected by such question or dispute, having regard (so far as appears to the Panel to be relevant) to the parts of the Total System in which power flows are typically most influenced by changes in power flows at the relevant Node(s) or (as the case may be) the relevant BM Unit.
- 6.5 Each Distribution System Operator, the Transmission Company, the CRA and the CDCA shall cooperate with and provide information as may be required to BSCCo and the Panel in connection with the determination of any question or dispute under paragraph 6.4.
- 7. Sample Settlement Periods**
- 7.1 For each BSC Year, Transmission Loss Factors shall be determined by reference to Nodal TLFs for sample Settlement Periods in the 12 month period (a "**Reference Year**") ending 31st August in the preceding BSC Year.
- 7.2 For the purposes of so determining Transmission Loss Factors, the Panel, after consultation with the Transmission Company and other Parties:
 - (a) shall divide the Reference Year into a number of different periods (each a "**Load Period**"), representing (in the opinion of the Panel) typically different levels of load on the AC Transmission System, defined by time of day, day of week, season and such other factors as the Panel considers relevant, such that every Settlement Period in the Reference Year falls into one and only one Load Period;
 - (b) shall specify, for each Load Period, a representative (in the opinion of the Panel) number of sample Settlement Periods (each a "**Sample Settlement Period**") within that Load Period; and

(c) will revise the specification of Load Periods or Sample Settlement Periods (if required) for each BSC Year.

7.3 BSCCo shall, not later than 31st August in the preceding BSC Year, notify the specification of each Load Period and the Sample Settlement Periods to the TLFA, the Transmission Company and the CDCA, and publish such specification on the BSC Website.

8. Determination of TLFs

8.1 For each BSC Year, Transmission Loss Factors for each BM Unit shall be determined in accordance with this paragraph 8.

8.2 For each Sample Settlement Period:

(a) the Transmission Company shall, not later than 5th October in the preceding BSC Year, send to BSCCo the Transmission Network Data and the HVDC Boundary Data;

(b) each Distribution System Operator shall, not later than 5th October in the preceding BSC Year, send to BSCCo the Distribution Network Data;

(c) the CDCA shall, not later than 5th October in the preceding BSC Year, send to BSCCo Metered Volumes for each Volume Allocation Unit (other than GSP Groups and BM Units embedded in a Distribution System);

(d) BSCCo shall, not later than 19th October in the preceding BSC Year, send to the TLFA the information received by BSCCo pursuant to paragraphs 8.2(a), 8.2(b) and 8.2(c);

(e) the TLFA shall translate the:

(i) Metered Volume data provided by BSCCo; and

(ii) flows of Active Energy at HVDC Boundaries,

to power flows (on the assumption they are constant in a Settlement Period) for each Node by applying the reference network mapping statement ("**Nodal power flows**"); and

(f) the TLFA shall input into the Load Flow Model the Transmission Network Data under paragraph (a), the Distribution Network Data under paragraph (b) and Nodal power flows under paragraph (e), and apply the Model to derive a nodal TLF for each Node ("**Nodal TLF**").

8.2A For each Zone and for each Settlement Period in the Reference Year, BSCCo shall, not later than 19th October, send to the TLFA:

(a) the sum of BM Unit Metered Volume (QM_{ij}) for all BM Units in the Zone (other than Interconnector BM Units) belonging to Trading Units that are delivering Trading Units in the Settlement Period;

(b) the sum of BM Unit Metered Volume (QM_{ij}) for all BM Units in the Zone (other than Interconnector BM Units) belonging to Trading Units that are offtaking Trading Units in the Settlement Period; and

(c) the sum of BM Unit Metered Volume (QM_{ij}) for all BM Units in the Zone.

8.3 For each Sample Settlement Period, the TLFA shall determine the Zonal TLF (TLF_{Zi}) for each Zone according to the following formula:

$$\text{TLF}_{Zi} = \frac{\sum_N (\text{TLF}_{Nj} * \text{QM}_{Nj})}{\sum_N \text{QM}_{Nj}}$$

where for that Settlement Period, and for each Node in that Zone (determined by the TLFA on the basis of the reference network mapping statement):

TLF_{Nj} is the value of Nodal TLF; and

QM_{Nj} is the absolute value of the Nodal power flow, disregarding any power flows to or from an Interconnector or an HVDC Boundary;

and where \sum_N is summation by Node in a Zone.

8.4 For each BSC Season (the "relevant BSC Season") in each BSC Year, the TLFA shall determine the Seasonal Zonal TLF (TLF_{ZS}) for each Zone according to the following formula:

$$\text{TLF}_{ZS} = \frac{\sum_p ((\sum_S \text{TLF}_{Zi} / S_{pS}) * J_{pS})}{\sum_p J_{pS}}$$

where (in relation to the Reference Year):

S_{pS} is the number of Sample Settlement Periods within a Load Period which fall within the relevant BSC Season;

J_{pS} is the total number of Settlement Periods falling within a Load Period which fall within the relevant BSC Season;

\sum_S is summation by Sample Settlement Periods within a Load Period which fall within the relevant BSC Season; and

\sum_p is summation by Load Period within the relevant BSC Season.

8.5 For each BSC Year:

(a) the TLFA shall, not later than 30th November in the preceding BSC Year:

(i) determine the Adjusted Seasonal Zonal TLF (ATLF_{ZS}) for each Zone and each BSC Season according to the following formula:

$$\text{ATLF}_{ZS} = (\text{TLF}_{ZS} * 0.5) + \text{TLFA}_S$$

where, for the relevant BSC Season, TLFA_S is the Transmission Loss Factor Adjustment value determined in accordance with paragraph 9;

(ii) calculate indicative values of TLM_{ij}, TLMO⁺_j and TLMO⁻_j for every Settlement Period in the Reference Year using the rules set out in Section T2 and the metered data provided by BSCCo pursuant to paragraph 8.2A save that TLF_{ij} shall be zero;

(iii) calculate indicative values of TLM_{ij}, TLMO⁺_j and TLMO⁻_j for every Settlement Period in the Reference Year using the rules set out in Section T2 and the metered data provided by BSCCo pursuant to paragraph 8.2A save that TLF_{ij} shall be determined by applying to

the Reference Year the $ATLF_{ZS}$ values calculated for the forthcoming BSC Year in accordance with paragraph 8.5(a)(i); and

(iv) send the Seasonal Zonal TLFs, the Adjusted Seasonal Zonal TLFs and the indicative TLM_{ij} , $TLMO^+_j$ and $TLMO^-_j$ values to BSCCo; and

(b) BSCCo shall, not later than 31st December in the preceding BSC Year, publish on the BSC Website:

(i) the Adjusted Seasonal Zonal TLF ($ATLF_{ZS}$) for each Zone and each BSC Season;

(ii) the Seasonal Zonal TLF (TLF_{ZS}) for each Zone and each BSC Season;

(iii) the Transmission Loss Factor Adjustment ($TLFA_S$) for each BSC Season;

(iv) indicative values of TLM_{ij} , $TLMO^+_j$ and $TLMO^-_j$ for every Settlement Period in the Reference Year calculated by the TLFA pursuant to paragraph (a)(ii); and

(v) indicative values of TLM_{ij} , $TLMO^+_j$ and $TLMO^-_j$ for every Settlement Period in the Reference Year calculated by the TLFA pursuant to paragraph (a)(iii),

provided that the TLM_{ij} , $TLMO^+_j$ and $TLMO^-_j$ data referred to in this paragraph 8.5 shall be indicative only and shall not replace and shall be without prejudice to the determination and application of the actual TLM_{ij} , $TLMO^+_j$ and $TLMO^-_j$ values for the purposes of Settlement in accordance with Section T2.3.

8.6 For each BSC Season in each BSC Year:

(a) the Transmission Loss Factor (TLF_{ij}) for each BM Unit shall be the Adjusted Seasonal Zonal TLF ($ATLF_{ZS}$) for the Zone in which that BM Unit is located (allocated on the basis of the prevailing network mapping statement) and for that BSC Season;

(b) the TLFA shall, not later than 30th November in the preceding BSC Year, determine and send the Transmission Loss Factors for each BM Unit to BSCCo;

(c) BSCCo shall, not later than 31st December in the preceding BSC Year, send such Transmission Loss Factors to the CRA; and

(d) upon any revision of the network mapping statement under paragraph 4.4(d), in relation to any BM Unit affected by such revision, BSCCo shall determine the new or revised Transmission Loss Factors (in accordance with the prevailing network mapping statement) and send such Transmission Loss Factors to the CRA.

8.7 The CRA shall maintain in CRS, as BM Unit registration data, the Transmission Loss Factors for each BM Unit.

9. Determination of the Transmission Loss Factor Adjustment ($TLFA_S$)

9.1 Subject to paragraph 9.3, the Transmission Loss Factor Adjustment (TLFA_S) shall be the value calculated annually by the TLFA for each BSC Season as follows:

$$\text{TLFA}_S = - \sum_j \{ \sum_{(\text{non-I})}^+ (\text{QM}_{ij} * \text{TLF}_{ZS} * 0.5) / \sum_{(\text{non-I})}^+ \text{QM}_{ij} \} / N$$

where

Σ_j is summation by Settlement Period in a BSC Season within the Reference Year;

Σ_(non-I)⁺ represents the sum over all BM Units (other than Interconnector BM Units) belonging to Trading Units that are delivering Trading Units; and

N is the total number of Settlement Periods in that BSC Season of the Reference Year.

9.2 Subject to paragraph 9.3, the TLFA shall send the Transmission Loss Factor Adjustments to BSCCo by not later than 30th November in the preceding BSC Year.

9.3 The Transmission Loss Factor Adjustment value shall be zero for all BSC Years if the Transmission Company has received a direction to that effect from the Competition and Markets Authority (or any successor to that body) on or before 23 November 2017 in which case the Transmission Company shall notify BSCCo as soon as possible after receiving such direction.

10. Role and powers of the Transmission Company

10.1 For the purposes of this paragraph 10, "determination of Transmission Loss Factors" shall be construed as including the steps and processes:

(a) set out in this Annex T-2 for the determination of Transmission Loss Factors; and

(b) any other steps and processes necessary to enable compliance with the Transmission Losses Principle as set out in the Transmission Licence (the "**Transmission Losses Principle**").

10.2 Where the Transmission Company is unable or has reasonable grounds to believe that it will be unable to comply with the Transmission Losses Principle, it shall be entitled to assume responsibility for the determination of Transmission Loss Factors pursuant to this Annex T-2 by giving prior written notice to the Panel and BSCCo setting out:

(a) the time and date from which the Transmission Company shall assume responsibility for the determination of Transmission Loss Factors;

(b) with reference to this Annex T-2, the extent to which the Transmission Company shall assume responsibility for the determination of Transmission Loss Factors; and

(c) whether the Transmission Company requires the suspension of the functions and duties of the TLFA,

(the "**Transmission Loss Factor Step In Notice**").

10.3 Upon receipt of a Transmission Loss Factor Step In Notice (or any amended notice issued by the Transmission Company to the Panel and BSCCo), BSCCo shall immediately publish such notice on the BSC Website.

- 10.4 If the Transmission Company issues a Transmission Loss Factor Step In Notice, the following provisions shall apply with effect from the time and date set out in such notice:
- (a) the Transmission Company shall assume responsibility for the determination of Transmission Loss Factors to the extent set out in the Transmission Loss Factor Step In Notice;
 - (b) the Panel, any Panel Committee and BSCCo shall provide such assistance to the Transmission Company and shall take such steps as the Transmission Company may reasonably request to enable the Transmission Company to determine Transmission Loss Factors and, in the case of BSCCo, such assistance shall include:
 - (i) the provision at the cost of BSCCo of all necessary data, facilities, suitably qualified staff and other support;
 - (ii) the exercise and enforcement, at the request of the Transmission Company, of relevant rights under the TLFA BSC Agent Contract; and
 - (iii) the publication of data pursuant to Section V4.6;
 - (c) subject to paragraph (b), the powers, functions and duties of the Panel, any Panel Committee and BSCCo in relation to the determination of Transmission Loss Factors shall be suspended to the extent set out in the Transmission Loss Factor Step In Notice (or any subsequent amendment to that notice) and for the period that the Transmission Company assumes responsibility for the determination of Transmission Loss Factors;
 - (d) where requested by the Transmission Company, BSCCo shall ensure that the functions and duties of the TLFA shall be suspended to the extent set out in the Transmission Loss Factor Step In Notice (or any subsequent amendment to that notice) and for the period that the Transmission Company assumes responsibility for the determination of Transmission Loss Factors;
 - (e) the Transmission Company shall assume (and there are hereby conferred on the Transmission Company) the powers, functions and duties of the Panel, BSCCo and, to the extent suspended under paragraph (d), the TLFA as set out in this Annex T-2 for the period that the Transmission Company assumes responsibility for the determination of Transmission Loss Factors;
 - (f) the Transmission Company shall determine Transmission Loss Factors in accordance with the provisions mutatis mutandis of this Annex T-2 but the remaining provisions of Annex T-2 shall not be affected in any way except to the extent set out in this paragraph 10;
 - (g) the costs and expenses of the Transmission Company properly incurred in determining Transmission Loss Factors shall be paid by BSCCo to the Transmission Company and recovered by BSCCo from Trading Parties in accordance with the provisions of Section D; and
 - (h) the benefit of Section B2.9.1 shall be extended to apply to the Transmission Company, as if references to a Panel Member were to the Transmission Company, to the extent that the Transmission Company is carrying out the functions of the Panel pursuant to this paragraph 10.

10.5 Before ceasing to exercise its powers, functions and responsibilities under this paragraph 10, the Transmission Company shall deliver a notice to the Panel and BSCCo specifying the date on which the Panel, BSCCo and, where applicable, the TLFA are to resume their roles under Annex T-2 and the provisions of this paragraph 10 shall cease to have effect from that date.

SECTION V: REPORTING (V33.0)

Amend the number of the heading to the following paragraph as follows:

3.12 Reports

Amend paragraph 3.2.5 to read as follows:

3.2.5 Reports are to be provided:

- (a) to Parties by the means specified in Section 0Q; and
- (b) to persons other than Parties by such means as the Panel may from time to time determine.

Insert new paragraph 4.6 to read as follows:

4.6 Transmission Loss Factor Data

4.6.1 BSCCo shall arrange for the report(s) and data set out in Table 9 in Annex V-1 to be made available as set out in that table.

4.6.2 Paragraph 3.2 shall apply for the purposes of paragraph 4.6.1 as if references in paragraph 3.2:

- (a) to BSC Agents included BSCCo; and
- (b) to Tables in Annex V-1 included Table 9.

Amend Table 9 of Annex V-1 to read as:

TABLE 9

THIS TABLE IS INTENTIONALLY LEFT BLANK TRANSMISSION LOSS FACTOR DATA

<u>Name of Report(s) / Category of Data</u>	<u>Frequency</u>	<u>Recipient</u>	<u>General Description</u>
<u>Load Flow Model power flows</u>	<u>Annually</u>	<u>Any Party (on request)</u>	<u>A report containing the power flows which the LFM Specification provides for and upon which the Load Flow Model is established as described in paragraph 2.2 of Annex T-2.</u>

<u>Transmission Network Data</u>	<u>Annually</u>	<u>Any Party (on request)</u>	<u>A report containing the Transmission Network Data determined by the Transmission Company in accordance with, and in the format specified in, paragraph 5 of Annex T-2.</u>
<u>HVDC Boundary Data</u>	<u>Annually</u>	<u>Any Party (on request)</u>	<u>A report containing the HVDC Boundary Data determined by the Transmission Company in accordance with, and in the format specified in, paragraph 5 of Annex T-2.</u>
<u>Distribution Network Data</u>	<u>Annually</u>	<u>Any Party (on request)</u>	<u>Reports containing the Distribution Network Data for each Distribution System determined by the relevant Distribution System Operator in accordance with, and in the format specified in, paragraph 6 of Annex T-2.</u>
<u>Metered Volumes</u>	<u>Annually</u>	<u>Any Party (on request)</u>	<u>A report containing the Metered Volume data provided to BSCCo in accordance with paragraph 8.2 of Annex T-2.</u>
<u>Nodal TLFs</u>	<u>Annually</u>	<u>Any Party (on request)</u>	<u>For each Node, a report providing Nodal TLFs as determined by the TLFA in accordance with paragraph 8.2 of Annex T-2.</u>
<u>Nodal power flows</u>	<u>Annually</u>	<u>Any Party (on request)</u>	<u>A report providing Nodal power flows as determined by the TLFA in accordance with paragraph 8.2 of Annex T-2.</u>

ANNEX X-1: GENERAL GLOSSARY (74.0)

Insert the following new definitions in alphabetical order:

<u>"AC Transmission System":</u>	<u>means the Transmission System excluding the HVDC Transmission System;</u>
<u>"Distribution Network Data":</u>	<u>has the meaning given to that term in paragraph 6.1 of Annex T-2;</u>
<u>"HVDC Boundary":</u>	<u>means the point at which the AC Transmission System is connected to the HVDC Transmission System;</u>
<u>"HVDC Boundary Data":</u>	<u>has the meaning given to that term in paragraph 5.1 of Annex T-2;</u>
<u>"HVDC Transmission System":</u>	<u>means that part of the Transmission System used for the transmission of high voltage direct current (HVDC);</u>
<u>"Load Flow Model":</u>	<u>has the meaning given to that term in paragraph 1.3 of Annex T-2;</u>
<u>"Load Flow Model Specification" or "LFM Specification":</u>	<u>has the meaning given to that term in paragraph 2.1 of Annex T-2;</u>
<u>"Load Period":</u>	<u>has the meaning given to that term in paragraph 7.2 of Annex T-2;</u>

<u>"Node":</u>	<u>has the meaning given to that term in paragraph 4.2 of Annex T-2;</u>
<u>"Reference Year":</u>	<u>has the meaning given to that term in paragraph 7.1 of Annex T-2;</u>
<u>"Sample Settlement Period":</u>	<u>has the meaning given to that term in paragraph 7.2 of Annex T-2;</u>
<u>"Transmission Loss Factor Agent" or "TLFA":</u>	<u>means the BSC Agent for TLF Determination in accordance with Section E1.2.5;</u>
<u>"Transmission Loss Factor Step In Notice"</u>	<u>has the meaning given to that term in paragraph 10.1 of Annex T-2;</u>
<u>"Transmission Losses Principle":</u>	<u>has the meaning given to that term in the Transmission Licence;</u>
<u>"Transmission Network Data":</u>	<u>has the meaning given to that term in paragraph 5.1 of Annex T-2;</u>
<u>"Zone":</u>	<u>has the meaning given to that term in paragraph 4.1 of Annex T-2;</u>

The following definition in Annex X-1 shall be amended as follows:

"Trading Data":	means any data of a kind listed in Annex V-1, Tables 2-7 and 9;
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ANNEX X-2: TECHNICAL GLOSSARY (V37.0)

Table X-1

The following new Subscripts shall be inserted in alphabetical order in Table X-1:

<u>N</u>	<u>Node</u>
<u>S</u>	<u>BSC Season</u>
<u>Z</u>	<u>Zone</u>

Table X-2

The following definitions in Table X-2 shall be amended to read as follows:

Delivering Transmission Losses Adjustment.	$TLMO_j^{++}$		The factor determined as such in accordance with Section T2.3.1. <i>The factor used in the determination of the Transmission Loss Multiplier for BM Units in Delivering Trading Units in Settlement Period j</i>
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Offtaking Transmission Losses Adjustment	$TLMO_j^{-}$		The factor determined as such in accordance with Section T2.3.1. <i>The factor used in the determination of the Transmission Loss Multiplier for BM Units in Offtaking in Trading Units in Settlement Period j</i>
Transmission Loss Factor	TLF_{ij}		The factor specified in Section T2.2.1(a), being equal to zero. <i>The Transmission Loss Factor is that factor used to allocate transmission losses on a locational basis to BM Unit i in Settlement Period j.</i>

The following new definition shall be included in Table X-2 in alphabetical order:

<u>Transmission Loss Factor Adjustment</u>	<u>$TLFA_s$</u>		<u>The value determined in accordance with paragraph 9.1 of Annex T-2.</u> <u>The Transmission Loss Factor Adjustment is the value calculated to ensure that, as far as possible, the Adjusted Seasonal Zonal TLF ($ATLF_{zs}$) values have a zero net aggregate effect on Delivering Transmission Losses Adjustment ($TLMO_j^+$) values.</u>
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Table X-3

The following definitions in Table X-3 shall be amended to read as follows:

$TLMO_j^{-}$		Offtaking Transmission Losses Adjustment
$TLMO_j^{++}$		Delivering Transmission Losses Adjustment -

The following definition shall be added to Table X-3 in alphabetical order:

<u>$TLFA_s$</u>		<u>Transmission Loss Factor Adjustment</u>
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