

CONSULTATION DOCUMENT

**Modification Proposal to the Use of
System Charging Methodology**

UoSCM-M-07

**Proposed change to the TNUoS Liability
Rules for Embedded Licence Exemptable
Generations and Distribution
Interconnectors**

11 November 2002

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Executive Summary

This paper sets out for consultation National Grid's proposed modification to the Use of System Charging Methodology to amend the Transmission Network Use of System (TNUoS) rules for Embedded Licence Exemptable Generation (ELEG) and Distribution Interconnectors. This paper is published on the National Grid website at the following address:

www.nationalgrid.com/uk/indinfo/charging/mn_modifications.html

1. Introduction

National Grid is obliged under the Transmission Licence:

- (i) to make revisions to the Charging Statements in order that the information set out in these statements shall continue to be accurate in all material respects;
- (ii) to keep the Use of System Charging Methodology at all time under review;
- (iii) to make such modifications of the Use of System Charging Methodology as may be requisite for the purpose of better achieving the relevant objectives, which are:
 - a. to facilitate effective competition in the generation and supply of electricity and (so far as is consistent therewith) facilitates competition in the sale, distribution and purchase of electricity;
 - b. to result in charges which reflect, as far as reasonably practicable, the costs incurred by National Grid in its Transmission Business; and
 - c. to take account of the developments in National Grid's Transmission Business.

In addition National Grid is obliged under Condition C7C of its Transmission Licence to ensure that National Grid shall not make charges which unduly discriminate between classes of customer.

Before making a modification to the Use of System Charging Methodology, National Grid is required by the Transmission Licence to consult CUSC users on the proposed modification and allow them a period of not less than 28 days within which to make written representations, except with the consent of the Authority.

The purpose of this document is twofold:

- i) to set out for consultation National Grid's proposal to modify the methodology regarding determining the liability for Transmission Network Use of System (TNUoS) generation charges particularly concerning the treatment of Embedded Licence Exemptable Generators (ELEGs) and Distribution Interconnectors.
- ii) to set out for consultation National Grid's proposal to modify the methodology to amend the demand TNUoS charging base in order to levy demand charges directly to Supplier BM Units, Embedded Licence Exemptable Generators

registered in CVA¹ as Exempt Export BM Units and Distribution Interconnectors registered in CVA as Derogated Distribution Interconnector BM Units, based on their average demand over the period over which half-hourly metered demand charges are determined (whether this demand be positive or negative).

It is proposed that this modification would better meet the Relevant Objectives in Licence Condition C7A 5 (a) and (c) as listed above under (iii) a and c, and the terms of Condition C7C.

2. Background to the Issue

There was considerable discussion during National Grid's Charging Review concerning how the charging base should be defined for TNUoS charges for both the generation and demand side. One of the key principles identified was that those Users who had an impact on the costs on the transmission system should pay in relation to their effect (and hence be part of the charging base). It was identified that those parties directly connected to the transmission system clearly had an influence on the costs and hence should be part of the base. Further discussion focused on the treatment of generation and interconnectors embedded in distribution systems, and to what extent these parties influence transmission costs.

It was noted that all embedded generation has the potential to cause transmission costs either by creating an export to the transmission or by causing changes in the demand level seen at a GSP². It was also noted that in terms of the transmission system, it is the sum of embedded generation in a particular area that can influence costs. For example, if there were 100 x 5MW generators in an area then this could have a similar effect on the transmission system as a single 500MW embedded generator. Therefore the size of an individual embedded generator is not always the only consideration. This is clearly an issue which will need to be looked at in the longer term as embedded generation develops to ensure that the influence of these generators' on transmission costs is properly reflected in the transmission charging arrangements. We believe this will be an important issue in taking forward any developments to the transmission access arrangements for the demand and generation sides of the market.

In addition, there is a need to ensure that the existing charging rules best meet the Relevant Objectives given the current access arrangements. It was noted through the Charging Review discussions that for practical reasons there may need to be some sensible threshold limit to determine when small generation could be treated as a disturbance to demand rather than generation. For large embedded power stations (those capable of generating more than 100MW) it was identified that these generators are significant enough to influence transmission costs in a very similar way to directly connected generation and hence should be in the charging base. The question surrounds the treatment of small and medium power stations.

This is not a new discussion. For example, the CAP002 CUSC amendment looked at the requirement for embedded generators to enter into an agreement with National Grid, and discussed the most appropriate threshold in terms of requirement of a contractual relationship with National Grid. This amendment is currently with the Authority for decision.

¹ CVA – Central Volume Allocation, meaning that the party has registered its own meter.

² A GSP is a Grid Supply Point.

At the time of implementation of NETA³, the generation TNUoS charging base was derived such that it did not alter significantly from that prior to the introduction of NETA. This led to the rules stating that generators (or Interconnectors) who were capable of exporting more than 100MW to the Total System (transmission and distribution) would be liable for TNUoS generation charges. In addition generators or Interconnectors who were capable of exporting less than 100MW, but who formed sole Trading Units and who participated in the Balancing Mechanism were charged on the basis that they were using the system. This rule was intended to mirror the treatment of those parties who were less than 100MW but requested central despatch under the Pooling and Settlement Arrangements.

National Grid has reviewed the above rules in light of the Charging Review discussions and as a result of experience of NETA, including the developments to the Trading Rules that have occurred since NETA Go-Live.

The current methodology results in different treatment of Embedded Licence Exemptable Generators and Distribution Interconnectors depending on their registration under the BSC, their participation in the Balancing Mechanism and their participation in a Trading Unit. This may not be the best method, as in reality the impact of an ELEG on the transmission system is dependent on its physical size and location, not necessarily on its BSC registration or market participation.

In order to clarify the treatment of ELEGs and Distribution Interconnectors, and to ensure that the charging methodologies do not unduly discriminate between like parties, National Grid believe it is necessary to raise this modification proposal for consultation. This modification has effects on the generation charging base and the consequent demand charging base due to the consequent change in netting off effects.

3. Explanation of the Issues

The diagram overleaf illustrates the existing rules for determining liability for generation charges and eligibility for Netting off Suppliers' demand charges (commonly referred to currently as Triad Trading). At present, only those ELEGs and Distribution Interconnectors that are registered in CVA for metering purposes, are not part of a Trading Unit with Supplier BMUs⁴ as defined in the BSC, and who participate in the Balancing Mechanism are liable for generation charges. At NETA go-live it was forecast that this would reflect the impact of such generation trading across the system, and hence using the system. It also maintained a similar charging base to that which had existed before the introduction of NETA.

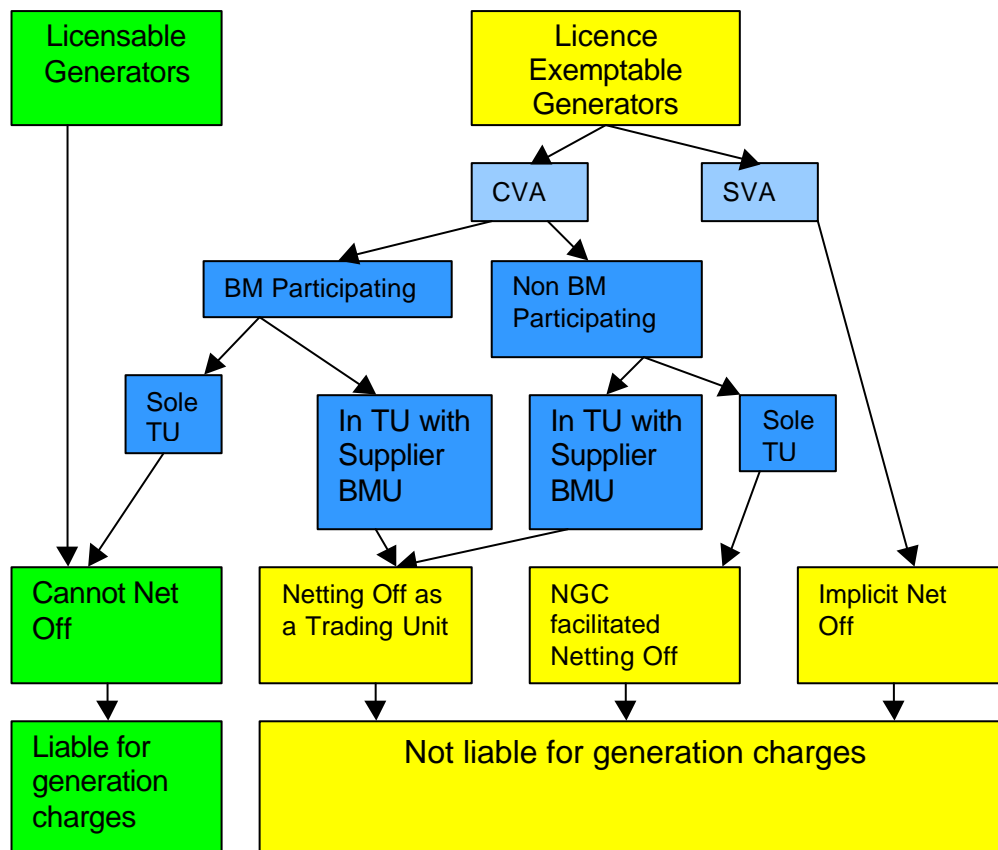
The current rules for Netting Off suppliers' demand charges are complex and do not treat physically similar plant in a consistent manner. LEGs registered in SVA⁵ are automatically netted off, as the supplier's metered demand is net of the generator's output. Those LEGs and Distribution Interconnectors registered in CVA must form part of a Trading Unit with a Supplier BMU, or notify National Grid that a netting-off agreement exists between that LEG or Distribution Interconnector, and one or more

³ New Electricity Trading Arrangements, implemented on 27th March 2000

⁴ Balancing Mechanism Units

⁵ SVA – Supplier Volume Allocation, meaning that the LEG has registered as part of a supplier's BM Unit.

Supplier BMUs in that GSP Group in order for National Grid to facilitate the Netting Off. In the case where the LEG or Distribution Interconnector forms part of a Trading Unit with a Supplier BMU, the LEG or Distribution Interconnector can participate in the Balancing Mechanism and still Net Off. However, in the case where the LEG or Distribution Interconnector is not in a Trading Unit with a Supplier BMU, it cannot participate in the Balancing Mechanism if it wishes to Net Off.



Given development and operation of the trading rules under the BSC, the result of these rules in practice is different treatment for physically similar plant depending on contractual and registration issues. This differentiation between such parties may not be consistent with the effect on the transmission system of power generated from an ELEG or exported from a Distribution Interconnector at a particular location, as it does not necessarily depend on such issues as meter registration, trading unit or Balancing Mechanism participation. In practice, the vast majority of ELEGs are registered and contracted in such a way that they are not liable for generation TNUoS charges, and most ELEGs net off their generation against Supplier BMU metered outputs through one of the Netting Off mechanisms.

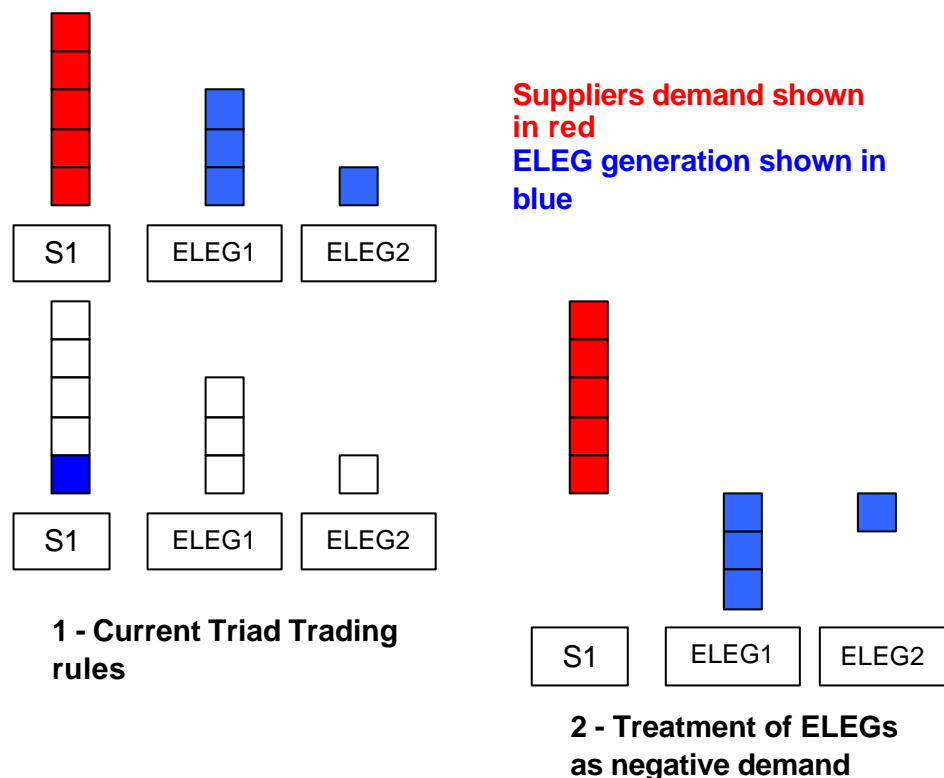
Proposed Changes in this modification

As noted in the discussion above, the issue is about the impact small and medium power stations and distribution interconnectors, and defining a threshold for the purposes of generation charges. In order to align with previous industry discussion surrounding CUSC amendment proposal CAP002, this modification would clearly establish a 100MW threshold for embedded generators and interconnectors, and would ensure that the methodologies avoid any undue discrimination for generation interconnectors below that limit.

Given this threshold of 100MW, the simplest change to the methodologies to achieve consistency would be to remove ELEGs and Distribution Interconnectors from the generation charging base and to treat exports from Exempt Export BMUs, Derogated Distribution Interconnector BMUs and Supplier BMUs as negative demand. Under this treatment, embedded LEGs registered in SVA in a Supplier BMU would continue to net off the Supplier BM Unit's demand, thus reducing the Supplier BMU's charge liability. However, the extent to which the ELEG or Distribution Interconnector would receive the benefit of the Supplier BMU's reduced charge would still be defined by the contractual arrangements between the Supplier and the ELEG or Distribution Interconnector. If all of the benefit was passed on by the Supplier to the SVA registered ELEG, the SVA ELEG would be receive the same benefit as a CVA registered ELEG.

Exempt Export BMUs, Derogated Distribution Interconnector BMUs and Supplier BMUs would pay demand charges based on their average metered volume over the period for which half-hourly metered demand charges would be calculated.

This change would remove the need for complex rules for generation charge liability and eligibility to Net Off, and would treat ELEGs and Distribution Interconnectors in a consistent manner. In removing complexity from the charging methodologies this change would clarify the treatment of ELEGs and Distribution Interconnectors, and would enable ELEGs and Distribution Interconnectors to receive the benefit of their contribution to reducing demand directly.



The diagram above illustrates how the negative demand charge would be applied in comparison to the current rules for netting off. The example shows a Supplier, S1, with a demand of 5MW, and two ELEGs with generation of 3MW and 1MW respectively. Under the existing rules, if the Supplier and the ELEGs formed part of a Trading Unit, or if they notified National Grid of an agreement between the three parties, the output of the ELEGs could be netted off the demand take of the Supplier. If the tariff in the zone were £10/kW, the supplier would be charged for 1MW of

demand, or £10,000. The benefit of the reduced charge would be shared between the supplier and the ELEGs by agreement. Under the new proposal, there would be no netting of the ELEGs' production against the supplier's demand. Instead, the supplier would be charged for 5MW, or £50,000, while the embedded LEGs would be paid the negative demand tariff for their production of 3MW and 1MW respectively. Hence ELEG1 would receive £30,000 directly, while ELEG2 would receive £10,000 directly. The net TNUoS payment received by National Grid under both methods is the same, in this example £10,000.

Changes that might be required in the future

As noted above, this proposal is a short-term solution to ensure that consistent rules are applied, given that a threshold of 100MW is applied to treat embedded generators as generation for charging purposes. However, all generation, even if small and embedded in a distribution system, could potentially have an impact on transmission investment and constraint costs. For example, even a small increase in generation connected in the north of the country would increase flows from north to south on the transmission system, potentially leading to additional transmission investment. The proposed move is appropriate only while the level of such generation is low in comparison to the demand connected in the same area (GSP Group⁶), and the generation can simply be regarded as reducing local demand in that GSP Group the proposed move is appropriate. However, the proposed treatment would not appear to be appropriate if the amount of generation from ELEGs and Distribution Interconnectors were large in comparison to the demand in an area.

At present the level of ELEGs or Distribution Interconnectors located in any GSP Group in England and Wales does not exceed the demand in the GSP Group, and it is not anticipated that this would be the case in these GSP Groups in the near future. Individual GSPs, however, may export due to the presence of a number of small generators embedded in the distribution system.

National Grid propose to monitor the development of embedded generation, and look to develop the charging rules in order to capture costs where these are caused by embedded generation and distribution interconnectors, to avoid undue discrimination between embedded generation and directly connected generation.

4. Proposed Modifications

Proposed Changes to the Use of System Charging Methodology

Generation Charging Base

The modification would change the generation charging base such that Embedded Licence Exemptable Generation would not be liable for generation TNUoS charges. The generation charging base would consist of:

- Licensable Generation capable of exporting 100MW or more to the Total System⁷,
- Generation directly connected to the transmission system
- Interconnectors capable of exporting 100MW or more to the Total System.

⁶ A GSP Group is a distinct electrical system, representing part or all of a distribution system

⁷ The Total System is transmission and distribution systems in England and Wales

Half Hourly Demand Charging Base

The modification would also change the demand TNUoS charging rules for those parties who are not liable for generation charges. The lead Party of each Supplier BM Unit, CVA registered Exempt Export BM Unit and Derogated Distribution Interconnector BM Unit would be charged on the basis of their average half-hourly metered volume over the charging period (e.g. the Triad) multiplied by the kW tariff.

For those BM Units described above, to the extent therefore that the average BM Unit metered volume over the Triad (as currently) is an import this will result in a positive charge. To the extent that the average BM Unit metered volume over the Triad (as currently) is an export this will result in a negative charge.

This means that charges will be levied on (or paid to) the Lead Party of each BM Unit described above, and hence there would be no need for netting off rules between BM Units within a Trading Unit or between BM Units in different Trading Units as currently required.

For the avoidance of doubt, the charging rules for those parties who are liable for generation charges (Directly Connected generators or Interconnectors, Power Stations (or Interconnectors) capable of exporting more than 100MW to the Total System) would be unchanged. Hence they will continue to be charged for demand based on any net metered import of the Power Station (or Interconnector) over the charging period (e.g., the Triad).

Justification for proposed modification

The proposed modification would better meet the Relevant Objective in Licence Condition C7A 5a to facilitate competition in the generation and supply of electricity in the following ways:

- by ensuring consistent treatment of Embedded Licence Exemptable Generators and Distribution Interconnectors
- By providing a clear framework for charging for Embedded Licence Exemptable Generators and Distribution Interconnectors

The proposed modification would better meet the Relevant Objective in Licence Condition C7A 5(c) to properly taking account of developments in the licensee's transmission business in the following way:

- By considering the continuing development of the rules for Trading Units as defined under the BSC.

The modification would also ensure that National Grid's charges do not discriminate unduly between similar classes of users as required under Licence Condition C7C of the Transmission Licence by ensuring consistent treatment of Embedded Licence Exemptable Generators and Distribution Interconnectors for charging purposes.

Implementation date

1 April 2003.

Proposed Changes to the Statement of the Use of System Charging Methodology

It is proposed that the Statement of the Use of System Charging Methodology be modified in line with the agreed methodology. Some suggested text in line with the

initial proposal is shown in Appendix 2, and other consequential changes are summarised in Appendix 3.

Proposed Changes to the Statement of Use of System Charges

The Statement of Use of System Charges will be updated with the new tariffs which are required to be delivered with 2 months' notice to users. New tariffs will be published in April 2003, taking into account the change in generation charging base. As very little Embedded Licence Exemptable Generation was part of the charging base in 2002/03, this change is anticipated to have a negligible effect on tariffs.

Indicative Impact on the Use of System Charges

Supplier BMUs, Exempt Export BMUs and Derogated Distribution Interconnector BMUs would pay demand TNUoS charges based on their average metered volumes over the period defined for calculation of half-hourly metered demand charges.

Therefore, Suppliers who had a netting-off agreement in place, either within a Trading Unit or through an arrangement facilitated by National Grid, will see an increase in their charges from National Grid. ELEGs and Distribution Interconnectors who were part of such netting off arrangements will be paid or charged directly.

Impacts on Other Industry Documents

None have been identified.

5. Responses to this Consultation

Comments and views are invited on all the issues raised in this consultation document. In order that your comments and views are included in National Grid's report to the Authority, responses must be received by **9 December 2002**. If you wish to provide comments on this review, then responses are welcome via e-mail to:

Mark.lissimore@uk.ngrid.com

Or alternatively, written comments may be addressed to:

Mark Lissimore
Commercial Analyst
Commercial
National Grid Company plc
Kirby Corner Road
Coventry
CV4 8JY

If you have further queries, please do not hesitate to contact Mark on **024 7642 3230**.

Appendix 1 – Revised wording of Chapters 4 and 5 of the Use of System Charging Methodology

Chapter 4 - Demand Charging Rules

N.B. References to Triad may be amended by modification proposal UoSCM-M-08.

Paragraph 4.1 of the Use of System Charging Methodology would be amended to the following wording:

4.1 The following parties may be liable for demand charges:

- The Lead Party of a Supplier BM Unit;
- The Lead Party of a BM Unit associated with a Licensable Power Station;
- The Lead Party of an Exempt Export BM Unit;
- An Interconnector Asset Owner.

4.2 **Appendix TN-5: Classification of parties for charging purposes** provides an illustration of how a party is classified in the context of Use of System charging and refers to the paragraphs most pertinent to each party.

Basis of Demand Charges

4.3 The values of Triad demand (kW) and energy consumption (kWh) to be multiplied by the relevant demand or energy consumption tariff, for the calculation of demand charges, is set out below.

Supplier BM Unit

4.4 The demand charges for a Supplier BM Unit will be based on:

- The average of each Supplier BM Unit's half-hourly metered volume during the Triad (and the kW tariff), *and*
- The Supplier BM Unit's non half-hourly metered energy consumption over the period 16:00 hrs to 19:00 hrs inclusive every day over the Financial Year (and the kWh tariff)

Licensable Power Station

4.5 The demand charges for a Licensable Power Station will be based on the average of the net metered import of the Power Station (including metered additional load) during the Triad.

Exempt Export BM Unit & Derogated Distribution Interconnectors

4.6 The demand charges for an Exempt Export BM Unit will be based on the average of the metered volume of the Exempt Export BM Unit during the Triad.

Directly Connected Interconnectors and those capable of exporting more than 100MW to the Total System

4.7 The basis of the demand charges for these Interconnectors will be the average net metered import of the Interconnector during the Triad (including interconnector errors with the exception of Emergency Assistance actions).

Paragraph 4.8 would remain, but may be amended by modification proposal UoSCM-M-08, which proposes an alternative method to the Triad for determining charges for half-hourly metered demand.

Paragraphs 4.9 to 4.15 of the Use of System Charging Methodology would be deleted, and would be replaced with the following:

4.9 For Supplier BMUs, Exempt Export BMUs and Derogated Distribution Interconnector BMUs, if the average metered volume over the period defined in paragraph 4.8 results in an import, the BMU will be charged the amount of the relevant kW tariff multiplied by the average import. If the average metered volume over the period defined in paragraph 4.8 results in an export, the BMU will be paid the amount of the relevant kW tariff multiplied by the average export.

The wording of paragraphs 4.16 to 4.28 would remain as it is at present, subject to changes introduced by other modifications, but would be numbered as 4.10 onwards.

Chapter 5 - Generation Charging Base

N.B. Changes to the generation charging basis are currently proposed by modification proposal UoSCM-M-06.

Paragraphs 5.1 and 5.2 of the Use of System Charging Methodology would be replaced with the following wording:

Parties Liable for Generation Charges

5.1 The following parties may be liable for generation charges:

- i) The Lead Parties of BM Units comprising Licensable Generation which form the whole or part of a Power Station or Trading Unit that is capable of exporting 100MW or more to the Total System, as agreed with National Grid.
- ii) The Lead Parties of BM Units comprising generation that have a Bilateral Connection Agreement with National Grid.
- iii) Interconnector Asset Owners of interconnectors capable of exporting 100MW or more to the Total System.

5.2 [Note – Appendix TN-5 would be revised to the simplified classification of parties for charging purposes.]

Appendix 2 – Other changes to Use of System Charging Methodology text

Changes would also be required to other sections of the Use of System Charging Methodology as appropriate to reflect the change of basis. This section briefly summarises those changes.

Chapter 1

Chapter 1 would be updated to reflect the changes made to the Charging Methodologies for April 2003.

Appendix TN-4

Appendix TN-4 would be amended to remove the section on Triad Trading. A new section would be added to describe the reconciliation process for supplier BM Units and for LEGs registered in CVA as Exempt Export BM Units.

Appendix TN-5

Appendix TN-5 would be amended to reflect the simplified classifications for charging purposes.