



Brussels, 22 May 2006

**ETSO Comments on ERGEG draft proposal of Guidelines on Inter-TSO  
compensation  
(E06-CBT-09-08, dated 10-04-2006)**

ETSO welcomes the ERGEG draft proposal on guidelines on Inter-TSO Compensation. Once adopted, they will ensure the future remuneration for transits using a method endorsed by national regulators.

ETSO supports the objective of the guidelines regarding the need to ensure a fair remuneration to TSO's for costs incurred by transit flows and a fair contribution from TSO's where transit flows originate or end. The guidelines will address possible shortfalls arising from the removal of border fees between EU countries and will act as a driver for the further development of the IEM.

In order to assist the successful implementation of the guidelines and the new endorsed methodology ETSO offers the following comments on the draft proposal.

**General comments**

1. ETSO considers that the proposed methodology currently needs further technical assessment (in the coming months) to check the robustness of its assumptions and the reliability of the results. ETSO is willing to cooperate with ERGEG to achieve this further assessment and to prepare the practical implementation of the scheme.
2. ETSO believes overall transparency of process would be improved if the guidelines indicated how concerned parties could propose improvements, and what would be the procedure to implement the improvements. Such a possibility to improve the inter-TSO compensation scheme must be left open, as the proposed method is considered as one pragmatic step towards a more precise flow-based model.
3. ETSO considers that the guidelines could be improved by more explicit drafting on the requirements to collect and specify cost data between involved parties (e.g. regulators, ETSO, the Commission, etc.). The guidelines should explicitly specify that cost values are to be delivered to the administrator of the mechanism and by what date.
4. There will not be 24 participating member states in the inter-TSO mechanism but there will be TSO's from 24 member states signing an agreement between them. No member state will sign or take any liabilities from the agreement. Therefore, as long as an inter-TSO mechanism is not robust in the context of the size and shape of the participating entities, the composition of the participating entities should be left to individual regulatory decision. Reasonable decisions would then be made by regulators based on criteria such as geographical layout, on market mechanisms or on technical aspects.

The smallest eligible partaking entity ought to be a single TSO except in the case of a TSO consisting of areas that are not directly electrically interconnected (e.g. Energinet.dk).

There is a need for more clarity between obligation on entities, member states, TSO's and regulators in the final guidelines. The guidelines should also describe the provisions (deadlines, requirements etc.) for TSO's in non-EEA countries taking part in the scheme.

5. In order to allow for a consistent definition of sensitivity factors and reference exchanges, ETSO proposes, as far as possible, the use of data from the actual time period and to use recorded situations during the year for the computation of sensitivity factors (e.g. January 2007 data for January 2007 calculation). Adopting this approach the calculation of sensitivity factors (and therefore the settlement of payments) would be done on an ex-post basis. This would lead to compensation that is more consistent with data used in calculation of reference exchanges, thus both more cost reflective. Though the settlement will be based on ex-post calculation, an ex-ante computation will be prepared on yearly basis to assess the expected net result per participating entity.
6. Regarding the definition of sensitivity factors, ETSO believes the application of "net" sensitivity factors (as described in the draft guidelines) can be improved by eliminating negative compensations. It is deemed appropriate by several TSO's to eliminate these negative compensations at an aggregate level (asset class or grid level; yearly timeframe), in case the compensation of a participating entity turns out to be negative. Some TSO's consider that this rule should better be applied on an element basis (i.e. for each grid element). This approach (definition of "positive" sensitivity factors) allows for the possible benefits of transits, however acknowledges that benefits achieved (in terms of infrastructure costs) when hosting transits are not obvious. This approach also avoids discrimination against national users who balance the overall TSO income and would fund payment into the scheme. Some TSO's also underline that the application of sensitivity factors (net or positive) still need further assessment and fine tuning because they consider there are still contradictory results far from reflecting the physical reality of the network.
7. The majority of European TSO's support the use of regulated costs in the ITC scheme so as to avoid discrimination between internal and external uses of the network. It should therefore be stressed in the Guidelines that any definition of LRAIC used is only meant as a technical definition for the calculation of the ITC cost claim and is not to be used elsewhere.
8. The ITC Guidelines should not be in conflict with any other guideline and therefore should not prescribe provisions (regarding the use of Congestion Management income) which might be conflicting with provisions contained the Congestion Management guidelines; any overcompensation of specified costs (through two different schemes) should also be avoided. If Congestion Management income is to be deducted from the total allowed revenues (as described in article 2.6 (a) of the draft ITC guidelines), several TSO's consider that the costs, as specified by the concerned regulator (with a sufficient level of transparency), for Congestion Management (re-dispatching or counter-trade) should also be taken into account for the cost basis. Including both the congestion revenue and congestion management costs generated through market-based mechanisms in a transparent market will secure an equal treatment for internal and external users. This is reasonable since they both contribute to the income and costs. Following the implementation of

Congestion Management guidelines, the electricity flows related to the cross border capacity which is not subjected to market based and transparent allocation procedures are not in principle entitled to receive any compensation from the ITC mechanism.

9. Due to the assumptions and in order to balance effects of simplifications (e.g. no compensations of loop flows for hosting TSOs) of the proposed method for the computation of compensations, it seems appropriate to retain the option to cap the amounts of compensations, contributions and/or the total fund (as mentioned in article 3.2. of the draft guidelines). More transparency and a clear mechanism described in the Guidelines is needed in this process; the procedure should therefore be further described in the guidelines.

## **Comments on the Explanatory Note**

### **1. Introduction**

The Guidelines on inter-TSO Compensation should focus on a description of the compensation scheme and relevant calculation methodologies. Any provision on national tarification is therefore beyond its scope. The guidelines on Tarification covering this subject are a separate legislative framework. Hence the reference to Article 8 (3) of the Regulation should be removed, since this topic is addressed by the Guidelines on Transmission Tarification.

## 2. Participating Entities

It is unclear what is the legal status and resulting obligations for participating entities in this explanatory note that are not repeated in the actual guidelines.

There will not be 24 participating member states in the compensation scheme, but there will be TSO's from member states signing an agreement between them (see General Comments).

### 3.2. Infrastructure – calculation of compensation

In the following sentence: "*Sensitivity factors shall be defined for all possible combinations of entities taking part in the ITC mechanism.*", it should be clarified that this is as well necessary for exchanges between Participating Entities and Perimeter Countries.

We suggest modification of the following sentence:

*"The impact of transits on an entity is evaluated using sensitivity factors. ~~These factors describe the 'electrical distances' between ITC entities.~~ The sensitivity factor of an entity A to an exchange of 1 MW from entity B to entity C is defined as the total amount of MW·km induced in all grid elements of an entity A by flows originating in entity B and ending in entity C. An injection of 1 MW shall be distributed proportionally on all generation nodes of an entity B and withdrawal of 1 MW shall be distributed proportionally on all load nodes of an entity C."*

It does not become clear how exactly the 1 MW additional flow originating in entity A and ending at entity B is distributed over all generator and load nodes ("proportionally" is not a sufficiently precise definition that could be ambiguous and should therefore be replaced by "pro rata to the amount of load/generation" as in Annex A 1.1)

The costing principle obligations in 3.2 are specified in terms of 'can', rather than "shall". This is further reinforced in the last paragraph. This does not reflect drafting in the actual guidelines and may imply other options.

### Section 3.4 of explanatory note

When addressing snapshots to be used for the computation of compensations for losses, procedures to get to reliable quality for the underlying load flow datasets shall be considered.

In the end of paragraph 3, it is also suggested to insert the sentence cited in our comment on article A.2.8 (3) (see below).

### Section 3.5: Payment Procedure

It should be clarified what is meant by "on-run period". This section should also cover recovery of costs for auditing, central administration, etc.... It is not clear within the guidelines how such cost would be recovered.

### Section 4: Treatment of Flows ...

(Last paragraph) : The sentence "*network users importing or exporting electricity to non-participating entities are required to contribute the compensation fund*

...." should be corrected, since network users are not a part of the ITC Agreement – TSOs are.

### **Section 5.2: Treatment of DC interconnectors**

Within this section and along with A1.10 to A1.13 of the guidelines it is implied that merchant DC interconnector would contribute to the scheme. This is not our understanding or the proposed model. We believe the drafting needs to clarify the status and relationship of DC interconnectors to the guidelines.

## **Guidelines on Inter TSO Compensation**

### **General comment on time schedule**

ETSO considers that the guidelines should be formally adopted by the end of June 2006 at the latest so as to allow ETSO and its members to ensure its implementation by 1 January 2007.

Transition periods could be defined in the guidelines for the first period of implementation, more specifically for the deadlines indicated in articles 2.4. and 5.

### **Section 1: Participants and Participation**

It should be clarified which countries are taken into account by the Guidelines.

The wording of "*A separate network within a member state...*" should be reworded for clarity's sake, e.g.: "*Networks within a member state that are not physically interconnected shall form different entities as regards the calculation of the ITC mechanism*".

It should be clarified that participation collectively in the inter TSO compensation will be effective from the moment that the regulators involved notify the agreement to the Commission. This could be at any moment and not only at the beginning of the year. On the other hand, participation collectively will not continue indefinitely, but will end following notification from the concerned regulators to the Commission.

It should be specified more clearly how non-EEA countries and edge countries are dealt with in the guidelines, and specify who and how pays a contribution to the fund "on behalf" of non-participating countries. If "edge TSOs" are required to contribute for non-participating countries they should have a right to set up ex-ante charges that would cover all the costs related to export or import to/from such non participating entities (the risk of edge TSO should be included as the ex-post contribution can vary from the expected one).

If DC interconnector owners do need to be included, as per the current drafting in 5.2, this also needs to be highlighted.

**Article 1.1:** We suggest the following change: "*Transmission system operators (TSOs) in all EU and EEA Member States, which are connected to the network of another TSO, shall participate in the inter TSO compensation mechanism either as a single entity or collectively. Participation collectively in the inter TSO compensation mechanism shall be approved by the regulator(s) involved and notified to the Commission according to the Regulation Article 2(b).*"

**Article 1.2:** We suggest the following change:

*“Transmission system operators in a non EEA countries may join the Inter TSO compensation mechanism where a Treaty is established between the EU and the relevant Non EEA countries or where the participation in the Inter TSO mechanism has been agreed, on the basis of reciprocity conditions and cost transparency and agreed auditing procedures. The Commission shall be notified in the case of a private contract between participating entities and non participating entities from non EEA countries ~~before non participating entity can join the Inter TSO compensation mechanism~~”.*

## **Section 2: Cost base: network and Forward looking LRAIC**

**Article 2.3:** The basis and the reasons for using unitary costs to calculate the overall network costs is not clear.

The link between the unit cost aimed at in article 2.3 and the computation of the total grid cost in annex A should also be clarified. The most appropriate way of calculating total costs seems to be a multiplication of unitary costs by the number of grid assets.

Generally, a majority of European TSO's is supporting the use of regulated costs in the framework of the ITC scheme, so as to avoid discrimination between internal and external uses of the network. It should therefore be stressed in the Guidelines that any definition of LRAIC is only meant as a technical definition for the calculation of the ITC cost claim and is not to be used elsewhere.

**Article 2.4:** It should be explicitly specified who is responsible for approving the cost data and how these costs might or should be audited.

**Article 2.5:** The procedure described in art. 2.5 must be clarified. Who are the regulators involved in case when an adjacent entity is not an ITC party (i.e. also, if a non EEA country or a country in which the regulator does not exist?).

ETSO remarks that unit costs based on the mentioned weighted average<sup>1</sup> costs are not comparable. There could be a certain upper range to cap unit costs which significantly differ from adjacent entities.

The cost definition as unitary costs per km is misleading since a relevant percentage of the costs concerns switchyards which do not have a relation to line length. All other factors being equal the costs per km in a highly meshed grid, e.g. Central Europe, will be higher than in less densely meshed grids, e.g. parts of Northern Europe. The definition is useful as a figure for calculations. But it should not be used for benchmarking purposes for these reasons. Therefore, Article 2.5. should be deleted or adapted to read as: *“... if ... the Commission by proposal of regulators may request a more detailed explanation”*

**Article 2.6.a):** The use of the term “revenue” should be avoided as the article should reflect “costs”. ETSO suggests the following text:

*“(a) For each participating entity under this jurisdiction, each regulator shall provide a value for total allowed network related **cost** by participating entities. This amount should only include **cost** related to network assets (including **WACC**, depreciation on network assets and operating costs related to maintenance of*

---

<sup>1</sup> Weighted average of regulated cost and LRAIC.

network assets **and congestion management cost**<sup>2</sup>). It should exclude any **cost** related to network losses and other non-network asset related activities such as the despatch operations, the net costs of balancing the system and the costs of procuring ancillary services. Each regulator shall deduct the share of the participating entity's congestion management and/or the Trans-European Transport Networks (TEN-T) projects income from the total allowed cost in order to take account of existing assets being financed by congestion management and/or TEN-T project income."

All TSO's, but one, consider that costs related to network assets should also include costs, as allowed by the concerned regulator, related to the operation of these assets (costs of control rooms and despatch operations) at least for voltage levels used in the ITC mechanism, and exclude the net costs of balancing the system and the costs of procuring ancillary services. The wording "costs of control rooms and despatch operations" should be better specified as "costs of system operation".

The overall cost of administering the scheme should be recovered from parties to the scheme in proportion to their net import or export. The guidelines should specify this additional charge.

**Article 2.6 (b, c, f):** it does not become clear why the total network costs have to be transformed into unitary costs (according to formula in article 2.6.f), to be afterwards transformed into total costs, which are subsequently shared (weighted at 80%) to the km of network circuits.

Furthermore, the voltage levels of the network assets to be compensated through the ITC mechanism are not identified. Up to now the simulations made by ETSO take into account only EHV (380-220 kV and in some cases voltage levels between 100 and 220 kV). It should be clarified in the guidelines which network assets may be taken into account for the ITC mechanism. ETSO believes that the inclusion of voltage levels below 220 kV should be decided by the concerned regulator, and should in all cases be limited to voltage levels of 110 kV or above. For cost definition, ETSO considers that three complementary asset classes should be introduced, dealing with bays (380 kV bays, 220 kV bays, other voltage levels).

The costs to be used must be fully precise in the following aspects at least:

- The units: km of circuit (not lines), number of bays and definition of bays, transformer MVAs
- The number of the above units that each system has installed at the date of the contract. The data must be specified separately in the different kinds of elements: km of circuit, number of bays and transformers MVA. With these original data (that should be collected and available) weighting factors can be computed (2.6 e).

**Article 2.6.(b)** When dealing with the length of lines, it should be specified as "km of circuit", and it must be clarified if it is physical or derived km. As an estimate for physical km, derived km could be used as an intermediate step: the method of computation of this length should then be clarified.

**Article 2.6.(d):** The estimate given by each regulator should be per participating entity and not participating country. ETSO considers that the use of weighting factors is not required for the calculation of regulated costs.

---

<sup>2</sup> Costs related to the management of congestion due to interconnectors, see general comment n°7

**Article 2.6.(e):**

(ii) The cost of line assets should include a share of substation costs (for example by taking into account the average cost of line switchgear bays and the average number of line switchgear bays per km and average voltage control equipment cost per km of line assets in each class);

**Article 2.6.(f)** It is not entirely clear, why unit costs are calculated. The compensation / contribution is based on the total costs of the grid (see Annex A 1.7 / A 1.8). In this light, Unit Costs (at least for existing assets) seem unnecessary. Why not simply use the allowed grid infrastructure costs - multiplied by 80% - to calculate the total costs?

**Article 2.7 on Forward Looking Long Run Average Incremental Cost**

For the computation of LRAIC, one should also take into account the 'costs for new switchgear bays and equipment'.

All costs used for LRAIC should be based on data approved by the concerned regulator. These costs should be based on the real costs of providing new network elements, and when available the actual costs of assets built or installed during the previous year of the contract (2.7 a). LRAIC data should be approved by the concerned regulator, describing also the mechanism to compute them and are to be provided on a transparent basis. In the case of dispute there may be a requirement to have the costs of a particular TSO available for audit.

The data must be provided separately in the different kinds of elements: km of circuit, number of bays and transformers MVA.

For the sake of consistency, the share of the replacement value of the network related to the operation and maintenance expenses should be introduced in the same way as the rate of interest in 2.7.f, as "a standard value agreed by regulators".

The way annual LRAIC costs are computed should be highlighted: ETSO suggests to define the following approach: the link between replacement cost (hereafter denoted RC) and annual capital expenditure (CAPEX, hereafter denoted AC) is established according to the following formula:

$$AC_t = \frac{i}{1 - \frac{1}{(1+i)^N}} \cdot RC_t,$$

where:

- $i$  denotes the weighted average cost of capital of the concerned TSO, expressed before tax and on a real<sup>3</sup> basis. This value is taking into account the corporate tax incurred by the TSO, as well as a risk premium;
- $N$  denotes the number of years used for the computation. Due to the differences in the depreciation rates of each TSO (and the fact that these rates differ according to the asset category), it could be fixed at 40 years (as was the case in the draft guidelines);
- $t$  denotes the time index, with  $t=0$  representing the year 2004 (basis year);
- $RC_t$  denotes the replacement cost assessed for year  $t$ , taking into account at least the inflation between 2004 and year  $t$ .

---

<sup>3</sup> The real rate equals the nominal rate minus inflation.



An appropriate share of the replacement value of the network (RC) is added (denoted hereafter  $x_t^{OPEX}$ ), related to the operation and maintenance expenses:

$$AC_t + OPEX_t = \left( \frac{i}{1 - \frac{1}{(1+i)^N}} + x_t^{OPEX} \right) \cdot RC_t$$


---

**Article 2.9:** Asset classes C and F should also be taken into account for the computation of LRAIC, particularly in the case of countries where there is very limited 220kV network present.

**Article 3.2:** Due to the simplicity of the proposed method for the computation of compensations, it seems appropriate for several parties to retain the option to cap the amounts of compensations, contributions and/or the total fund. However ETSO is concerned of a possible lack of transparency in this process (also some criteria are vague: "...leading to unreasonable payments"); therefore, a transparency requirement should be placed on this procedure, and should allow an equal treatment of all participating entities.

**Articles 4.1 and 4.3 :** The obligation shall be on the Participating entity rather than on Non-Participating Countries. Also the basis of responsibility should be defined ("physical inflows" versus "reservation to import electricity").

We suggest the following approach:

- Article 4.1.: The edge-TSO's shall, when their networks are connected to the networks on non-participating entities, contribute to the inter-TSO compensation mechanism to the extent that scheduled imports or exports are due to these non-participating entities.
- Article 4.3.: The edge-TSO's shall recover the above contribution from the network users, who have contracts or reservations to import the electricity form or export the electricity to non-participating entities.

**Article 5:** (2) It should be specified that the methodology is the one described in the appendix.

## **Annex A**

General comment on annex A: The method of computation of the transit key could be explained in more detail in the Guidelines, stating how the annual cost of an asset class is allocated to single elements, how the annual cost of one element is allocated to different time periods, and how costs are allocated to transits. ETSO suggests the methodology hereunder.

Allocation of total annual cost  
to transit in each grid element at each time period

- (1) Starting point : annual cost of asset class = K
- (2) Allocation of annual cost of asset class to each single element : 
$$\frac{\text{Sum over time MWh.kms in the element}}{\text{Sum over all elements, over time MWh.kms}}$$
- (3) Allocation of annual cost of each single element to each time period : 
$$\frac{\text{MWh.kms in the element}}{\text{Sum over time MWh.kms in the element}}$$
- (4) Allocation of cost of one element in one time period to transit : 
$$\frac{\text{MWh.kms transit in the element}}{\text{MWh.kms without transit + MWh.kms transit in the elt}}$$

$$\text{Total cost allocated to transit :} \\ = (1) \cdot \text{Sum over all elements} [ (2) \cdot \text{Sum over time} ( (3) \cdot (4) ) ]$$

**A.1.1 (a):** For improved accuracy, sensitivity factors could be calculated separately for each asset class A, B and C (as defined in article 2.6). Note that the notation is confusing, with A, B and C denoting asset classes in article 2.6, and countries in this annex.

**A.1.1 (c):** Since the same datasets will be used for the purposes of infrastructure cost allocation and losses cost allocation, quality requirements should be the same for these two processes. Quality requirements mentioned in A.1.1. (a) should therefore be made consistent with requirements of articles A.2.2. and A.2.3.

**A.1.4:**

(c) It does not become clear to which point in time the sensitivity factors which are multiplied by the hourly reference exchanges relate

**A.1.6:** For improved accuracy, compensations could be calculated separately for each asset class, as defined in article 2.6, and then summed up over all asset classes.

**A1.10-A1.13 Direct current (DC) interconnectors**

The treatment of the DC interconnectors should be clarified in the Guidelines. The implication legally separated interconnectors need to contribute to the scheme is not currently with the proposed methodology. They need to be modelled to allow contribution and compensation for adjacent countries but they are not expected to receive compensation or contribution if they do not form part of the regulated asset base.

**A.1.7:** "net payments" is not appropriate here: The transit key shall be used to calculate the **compensation** for entity k

**A.2.3:** It is recommended to delete A.2.3.b as overly prescriptive for guidelines.

**A.2.4:** It should be left open whether to use a AC or a DC load flow algorithm.

**A.2.5:** reword on DC links, depending on if they are actually 'computed' in its own right, or just considered on the flow of a participating entity.

The guidelines are not to prescribe the business process or allocation of responsibility, suggest change 'Each participating entity shall determine the losses,  $P_{vs}$ ' to 'The losses,  $P_{vs}$ , shall be determined'

**A.2.8. (3):** This article could be clarified in the following way:

"After removing transit flows on the interconnectors, a second load flow calculation for the situation without transits shall be done. The calculated total active losses for this situation represent the losses caused by domestic network utilisation  $P_{Vdomestic}$  on all the elements connected to the grid during the snapshot. The losses caused by transits on the grid are defined as the difference of the total active power losses (with transits) and total active power losses caused by domestic network utilisation (without transits):

$$P_{Vtransit} = P_{Vactual} - P_{Vdomestic}$$

In case the relative share of losses caused by transits exceeds the relative share of power flow caused by transits, it shall be delimited to this proportion."

**A.2.9 and A.2.10:** The basis for contributions regarding losses should be specified as net imports and net exports and not import and export respectively. As drafted, contribution would be paid by countries for hosting transits.

Furthermore, the consistency between articles A.2.9. and A.2.10. is to be checked: due to the presence of non-participating entities, "contributions based on net flows of exporting and importing entities" (as mentioned in article A.2.10.) do not exactly match "contributions distributed equally on those exporting and importing entities" (as mentioned in article A.2.9.).

It should also be added how:

- The edge-TSO's shall contribute to the inter-TSO loss compensation mechanism for the scheduled imports or exports to (or from) the non-participating entities;
- The edge-TSO's shall recover the above contribution from the network users.

## **Annex B**

For better understanding it would be useful to give a complete example for the computation of the unit costs (Regulated Costs + LRAIC).

A new Annex seems necessary to explain how losses should be calculated more in detail.