

COMPARISON OF THE PROPOSAL OF GUIDELINES ON INTER TSO COMPENSATION WITH THE CEER CRITERIA FOR A LONG-TERM INTER TSO COMPENSATION MECHANISM

The intention of this paper is to evaluate if and to what extent the inter-TSO compensation mechanism – as proposed in the ITC draft guidelines – needs improvements in order to fulfil the criteria for the long term mechanism recently developed by the CEER ITC TF (see Annex I, showing the eight criteria, which were approved by GA in year 2004).

Criterion #1: Legislative. The method must comply with the electricity Regulation and Directive

The underlying philosophy of the proposed method is to compensate TSOs only for transits¹ through their grids and not for all flows that cross borders. Besides, it does not determine which are the TSOs where the flows originate or end. This does not seem to fully agree with the Regulation. The method certainly recognizes that net exports and imports are clearly related to external use of other networks. It is also true, however, that the proposed method computes the compensation to each TSO taking into account the physical flows, as required. But note that the method makes use only of the physical flows at the borders of TSOs, and not of the physical flows within TSOs.

In the present (2004) ETSO implementation, regulated costs of the existing grids instead of the long run average incremental cost (LRAIC) are used. In order to agree with the Regulation, any method should use LRAIC. This is already indicated in the method presented in the draft Guidelines.

Criterion #2: The ITC mechanism shall take into account as far as possible all cross border flows

Given that the proposed method relies upon the concept of transit for computing the external use of the grid of each TSO, it implicitly excludes in its present form the possibility of purely exporting or importing TSOs being compensated. Using all cross-border flows gives the possibility of determining the amount of external network use even for the cases of purely importing or exporting countries.

The approach assumes that for flows between two TSOs without any other TSO being affected, the impact on the network of importing and exporting TSO implies the same level of costs for both systems. This needs not necessarily be the case and transmission scenarios where compensation is appropriate between the two TSOs can be shown to exist.

¹ Definition of transit is based on Regulation 1228/2003.

Criterion #3: The method for network cost allocation must be consistent with the fundamental approach inspiring the construction of the IEM

The “single system paradigm” is the most powerful concept behind the design of cross-border regulation of the IEM. The proposed ITC method applies harmonized rules across all member states, what has to be seen as a first important step towards a common market. The results of the proposed method depend on TSO borders, since they will affect the amount of transit that is considered to be flowing through the grid. The TSO borders will also affect the amount of exports to and imports from each TSO, which are used to allocate the compensation due to each TSO by the remaining ones. This is not fully consistent with the “single system paradigm”.

Criterion #4: The method for network cost allocation must be consistent with other aspects of transmission regulation**1. Investment in new infrastructures**

The document that the General Assembly of CEER approved in May 2004 is based on the idea of a subset of TSOs and regulators making decisions about cross-border network investments that affect them significantly. There is some inconsistency between this approach and the proposed method that socializes the costs of the external use of all lines in a TSO region (including any new investment being considered) among all TSOs with net exports and imports, regardless where they are located. The socialization of the costs of new network investments that is implicit in the proposed method may result in resistance to its implementation, when TSOs will have to contribute to the costs of new lines that they will not use.

2. Locational signals for operation and investment

The method fails to provide a contribution to locational signals. Consequently, it does not encourage efficient network investments and, as multiple TSOs will need to contribute to the cost of new infrastructure assets in proportion to their net flows, it could be seen as introducing more parties and therefore additional complexity into the network development process.

The method does not provide locational signals either in step 1 (determination of compensations) or in step 2 (determination of charges). As with any other method it has some potential for delivering locational signals in step 3 (application of net result of compensations and charges to the internal tariffs) if the TSO specific tariffication system is implemented in a harmonized way throughout all member states, e.g. if the cost contribution in exporting TSOs is borne by generators and in importing TSOs by consumers.

3. Congestion management

The long-term economic signals produced by the method do not interfere with the short-term signals that a sound market based congestion management method would produce.

4. Network tariff harmonization and potential pan-European or at least regional transmission tariffs

The principle of having ITC compensation contributes towards the harmonization of transmission tariffs in the EU by external utilisation of networks, regardless of the algorithm being used. Therefore each mechanism makes some contribution. However, the proposed method does not make any additional improvement beyond the base case that applies to all mechanisms. Only a method that is able to allocate the cost to individual users or to TSOs can be of any help in the process of determining zonal or nodal transmission network tariffs if such harmonisation is sought after for both generators and/or consumers.

Criterion #5: Economic soundness

When the mechanism was initially developed, the first priority was to implement a harmonized procedure to replace the former “pancaking” practice and to provide equal trading conditions within Member States. It was clearly stated that it is a temporary solution which shall be replaced by a long term solution based on sound economic principles with money flows based on actual power flows.

Even though improvements have been made since its first implementation, the method in general, as well as specific details, contain some deficiencies; stemming from the use of approximations as opposed to actual flows:

- While the method is transparent, it cannot be seen as being completely cost reflective. The costs incurred in each TSO are spread among all TSOs according to the amount of their net flow. This does not wholly correspond to the actual use of the grid by individual agents and may also lead to large contributions to new investments being provided by countries with large net-flow.
- Aspects of the method appear arbitrary and a sound economic justification for their inclusion is unclear. Using the transit key ξ and equation to define it, is an approximation that only roughly reflects the actual physical situation. Equally, the same can be said for the formula used to calculate the compensation for losses;
- The calculation of losses is also deficient in not taking account of potential reductions in losses that can be caused by an increase in the cross border flows

Criterion #6: Technical soundness

Some criticisms can be made of the concept of transit. First, the method accepts that only when there is a transit there is some utilization of the grid by external agents. However, it can be argued that when a TSO is importing or exporting some external agents are using the TSO's grid. Thus the ITC method does not assign the compensation due to a TSO to the ones responsible for the external use of this TSO's grid.

Additionally, the transit depends on the TSO borders defined. Changes in TSO borders would imply that the transit flowing through each part of the grid would change too, thus giving rise to different compensations also for the same network users. If these changes in TSO borders occur they might have also influence on the tarification within the TSOs involved.

The proposed method furthermore ignores the actual effect that removing the transit would have on the internal physical flows of a TSO both in terms of flows and losses. It simply

computes a ratio of transit to internal consumption and assumes this to be a good estimate of the actual effect of the cross-border flows within the considered TSO.

The amount of compensation fund is an important factor if new investments are to be financed utilising the ITC mechanism. The proposed method includes in its definition the use of the Horizontal Network and the determination of the standard network costs. These two factors have a major influence on the economic value of the networks whose external use has to be evaluated. It is therefore important that the procedures to perform both tasks are agreed by all the involved parties. The current method of determination of the Horizontal Network used has been well accepted by ETSO members and no major objections have been raised so far. However, there is some discussion on the standard cost figures that were proposed by the EU Commission for the application of the LRAIC method.

Criterion #7: Implementation - Data availability, acquisition and handling

The present method needs a very small amount of data in order to be applied. Only the magnitude of the transit, the total demand and the net flow for each of the TSOs are required. In addition to this, the cost of the Horizontal Network of each TSO is necessary to express compensations and charges in monetary terms. All data required to calculate the compensation and payments are available and can be easily collected. Definitions that are required to apply the methods have been improved within the last years (for example, definition of Horizontal Network).

Compensations and charges in the proposed method are the result of very simple arithmetic operations. Therefore, the complexity of the method is very small. The need for computer simulations is obviated when the amounts of compensations are defined and measurements are sufficient. Simulation models of individual TSOs are needed only in defining the Horizontal Network.

The definition of some concepts is central to the method nevertheless. The computation of the size of the transit flowing through each TSO must be accurately defined. The definition of the Horizontal Network is critical in the proposed method since it heavily conditions the final results and the method does not make any further verification of the extent of external use that takes place in the horizontal network.

Criterion #8: Ability to be easily understood and verified

The method is simple and easy to understand. It entails comparing the amount of transit of each TSO with the amount of internal power consumption.

The method can be easily implemented and it is straightforward to check whether or not the results are consistent with the algorithm. The results will track closely any changes in imports and exports.

Its results are easy to reproduce due to the fact that the method is very simple.

Brussels, August 10, 2004

Annex I

Criteria of the Inter-TSO Compensation mechanism

Criterion #1: Legislative. Any method adopted must comply with the Electricity Regulation and Directive. This is a matter of existing law and must be the first priority. That is, it must for example:

- form a basis for compensation for costs incurred as a result of hosting cross-border flows of electricity
- be established on the basis of the forward looking long-run average incremental costs taking into account losses, new infrastructure and existing infrastructure
- determine the magnitude of cross-border flows on the basis of the physical flows of electricity
- account for, the compensation that shall be paid by the transmission system operators from which cross-border flows originate and the systems where those flows end

Criterion #2: *The ITC mechanism shall take into account as far as possible all cross border flows, complying with Article 3 of the Regulation.*

Criterion #3: *The method for network cost allocation must be consistent with the fundamental approach inspiring the construction of the IEM: "The overall goal is for the IEM to function in the same way as a national market ... In the long term a pan-European tariffication mechanism would contribute to the further integration of markets"². These are elements of the fundamental approach that is known as the "single system paradigm". In so doing there is a need for the proper integration of the South East European Electricity Market (SEEREM) into the ITC mechanism of the IEM. Any such mechanism implemented in SEEREM should not create any distortions of the trade between the two regions.*

Criterion #4: *The method for network cost allocation must be consistent with the overall framework of transmission regulation, so that any mutual implications with other aspects of transmission regulation do not create undesirable conflicts, now or in the future. Is the method consistent with the remaining elements of cross-border transmission regulation?*

- investment in new infrastructures;
- locational signals for operation and investment;
- congestion management
- network tariff harmonization and potential pan-European or at least regional transmission tariffs.

Criterion #5: Economic. Given that the law is not detailed and allows flexibility in the choice of ITC method, and that the CEER has as its goal the establishment of an efficient and effectively competitive single market, we as regulators are free to choose economic criteria next. Hence, any method adopted should:

- be consistent with the promotion of competition. It needs to retain a 'level playing field' and to remain non-discriminatory.
- promote economic efficiency (productive efficiency, allocative efficiency) or at least not distort efficiency.
- be transparent, reasonable and cost reflective.

² EU Commission, "Strategy Paper: Medium term vision for the Internal Electricity Market (IEM)" March 2004.

- be consistent with the proper regulation of monopoly networks and in particular a regulatory regime that encourages efficient network operation and investment, and which provides no perverse incentives for transmission expansion.
- be consistent with the long term development of the IEM. This will include consideration of plans for congestion management, tariff harmonization and transmission investment. The method needs to be a step on the way to the European market functioning as a single market.
- be consistent with the general regulatory principles for transmission / TSOs in the EU and Member States. This will include openness and transparency, and the treatment of regulated revenue and methods for encouraging and rewarding investment.
- be based on sound economic principles and on objective, transparent and controllable criteria.
- use standardised costing methodology to define the cost of the whole network (including interconnectors) within a country.
- produce reasonably stable and predictable results that can be verified or replicated easily.

Criterion #6: Technical soundness. The method shall be based on sound engineering principles or have technical justification. It shall not have technical inconsistency in the algorithms that are needed for the application of the method. The results of application of the method must make engineering sense.

Criterion #7: Implementation. The method adopted needs to be reasonably straightforward and cost effective to implement. The manageability of data acquisition and handling must be made clear and data should be available or easy to collect. These issues will also need to be seen in the context of what the TSOs say they can deliver. Volume of required data must be feasible and easy to process. Information, procedures or commonly agreed definitions that are required to apply the method must be available. An example is: Definition of standard costs of network infrastructure.

Criterion #8: Ability to be easily understood and verified. Any method adopted shall be simple and easy to understand and to apply. The basic concept of the method shall be easy to explain and communicate.

Brussels, August 10, 2004