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DISCUSSION DOCUMENT

Harmonisation of Network Access Charges

1. Introduction

The rules on charges for access to the network contained in the new Regulation on conditions for access to the network for cross-border exchanges in electricity aim at achieving a certain degree of harmonisation for these charges, as far as this is necessary to limit trade distortions stemming from different approaches applied in Member States. It is in this sense that recital (11) of the Regulation says:

“The actual amount payable for cross-border access to the system can vary considerably, depending on the transmission system operators involved and as a result of differences in the structure of the tariffication systems applied in Member States. A certain degree of harmonisation is therefore necessary in order to avoid distortions of trade.”

Basic common principles of the establishment of network access charges are contained in the text of the Regulation itself, notably Article 4. As a result, important principles, most of them developed under the Florence process, are now enshrined in a legally binding text, such as cost-reflectiveness, the prohibition of distance related tariffs and the existence of locational signals.

As regards the – necessary – determination of further details of such harmonisation, the Regulation refers to guidelines, to be adopted by the Commission under a comitology procedure. Article 8 (3) reads:

The guidelines shall also determine appropriate rules leading to a progressive harmonisation of the underlying principles for the setting of charges applied to producers and consumers (load) under national tariff systems, including the reflection of the inter-TSO compensation mechanism in national network charges and the provision of appropriate and efficient locational signals, in accordance with the principles set out in Article 4.

The guidelines shall make provision for appropriate and efficient harmonised locational signals at European level.

Any harmonisation in this respect shall not prevent Member States from applying mechanisms to ensure that network access charges borne by consumers (load) are comparable throughout their territory.

The question is thus, how, in the first set of guidelines to be adopted immediately after the entry into force of the Regulation, this issue would best be addressed.

2. Principles of national tarification – current practice in Member States

2.1 General principles to establish G and L charges

Countries currently attribute more transmission costs to the consumer than to the producer, which leads to L being higher than G. In fact, seven states forming part of the internal market currently apply a significant network access charge on G (UK, IR, SE, NO, NL, AT, EL), whereas eight countries have a minimal or no charges at all for generators (FR, DE, ES, IT, BE, PT, FI, DK). However, there is generally no economic or technical basis for attribution of transmission costs to the producer (G) and to the consumer (L). In any case, the consumer will eventually pay all these costs, either directly or indirectly. This suggests that there is a certain arbitrariness in the respective share of G and L and that an homogeneous solution can be reached in the various countries without disrupting any basic principles.

The average total transmission tariff in Europe can be estimated to amount to 5.5 - 6 €/MWh¹. However, the highest tariffs are on average approximately 3.5 times more expensive than the lowest tariffs. Even excluding the extreme tariffs, the range between the higher and the lower tariffs is 2 to 1. The average charge on “G” for an annual load of 5000 hours connected to the transmission network has a value below 0,5€/Mwh. The value is about 1 € in the Netherlands and a little higher than 2€ in Norway and the average UK value.

It is clear that such divergences between overall tariff levels are likely to lead to distortions. On the other hand, these differences may be, at least to a certain extent, a reflection of different per unit costs of the national networks concerned. Therefore, it would be impossible to simultaneously harmonise at the European level, at least in the short term, the absolute value of both the G and L charges. However, producers are the most sensitive to differences of the G component of the tariff, which causes distortions of competition between Member States for the purchase and sale of electricity. It is therefore necessary to focus on the harmonisation of G. Charges for L can, to an extent, be treated as a residual and be left to subsidiarity.

2.2. Long-term locational signals

The purpose of long-term locational signals is, in principle, to provide a prospective price signal, in terms of current and future network infrastructure costs, to existing and potential generators and/or consumers connected to the network. Whilst, of course, other factors, such as availability of primary energy source, also play an important role, such a long-term signal would be designed to have an influence on future decisions regarding the siting of both generation capacity and consumption in this regard (though the latter to a significantly lesser extent given that consumption is generally less flexible in terms of siting). As a result, for instance, continuation of existing and additional new generation in regions of surplus generation would in principle be discouraged through higher network access charges to be paid by generators. In turn, generation in regions of surplus consumption would be encouraged through lower or even negative access charges, which would provide the appropriate long-term locational signal.

In current practice, within nearly all Member States, general access charges are not designed to provide such long-term locational signals, either nationally or at EC level. However, in the United Kingdom, Greece and Ireland certain general network access charges do provide long-term signals

¹ Estimated on the basis of two studies: “Benchmarking of Transmission Tariffs (Comillas University)” and “Benchmarking on transmission pricing in Europe (ETSO, February 2003)”

at national level but not relating to possible impacts of flows on the wider EC network.

This does, however, not mean that locational signals do not exist in the internal market. In fact, short-term locational signals have always existed. This is because in many instances, network users not only pay general network access charges but also congestion charges, for instance in case of a congested interconnector between two national transmission systems. Such congestion charges, by their very nature, always provide to a certain extent a short term locational signal, even if they are not expressly designed to do so. This is because the reason for congestion is generally a generation/consumption imbalance in a certain area, with the result that, in case of surplus generation, surplus electricity has to leave the area through a congested part of the network, e.g. an interconnector between systems. In such a case the congestion charge to be paid in this surplus area is likely to discourage additional generation in the area concerned¹.

It is against this background that the last Florence Forum of October 2002 concluded:

- *At present, strong short and medium term locational signals already exist. There are virtually no regions in the EC where significant new generation can be placed without creating or releasing internal congestion or congestion of interconnections between national systems. Also, the construction of new lines requires long planning and construction periods. Therefore, in the short term, the signals resulting from congestion will direct new generation and consumption in the internal market.*

However, the Forum also said:

- *... short terms signals may prove insufficient in the longer term, in particular if the congestion is removed after the construction of new lines, as addressed in the context of the 2001 Communication of the Commission on energy infrastructure. Therefore, network access charges should also provide long-term locational signals.*
- *A proper system of long term locational signals would therefore be necessary and would be based on the approach that the level of the network access charges on consumers and generators must, in principle, reflect the generation/consumption balance of the region concerned, provided by a differentiation of G levels. Such a system must contribute to the integration of the internal electricity market and increased price convergence, providing the correct economic signal in terms of the construction of new infrastructure and new interconnectors.*

3. The future guidelines - two basic issues to be addressed

In the light of the above, two basic issues need to be addressed in the first set of guidelines to be adopted immediately after the entry into force of the Regulation in mid-2004.

- Harmonisation of the existing network access charges on G (the “basic” G-charge, not intended to provide any kind of locational signal)
- Introduction or not of a specific G-charge to provide locational signals, which would be added to the harmonised “basic” G-charge

¹ It should also be noted in this context that in NORDEL generators are specifically charged for the individual losses they cause on the network, whereas in other Member States costs resulting from losses are usually socialised. Such specific charges for losses provide to a certain extent a short-term locational signal.

3.1. Harmonisation of the basic G-charge

Since the objective of such harmonisation is to reduce as far as possible distortions resulting from different levels of G-charges, any harmonisation would narrow as far as possible the absolute values of national G-charges.

In this light, limiting the necessary harmonisation to the *ratio* between the level of the G and the level of the L charge – an approach discussed several times in the context of the Florence Forum – may be insufficient. Given the large differences in total transmission costs between Member States, under a mere ratio harmonisation important differences in the absolute level of G-charges would persist and continue to distort competition between generators. Furthermore, in practice it might prove difficult to apply a percentage approach, for instance regarding the determination of the individual charges to be taken into account when applying the percentage (which components of the tariffs, which voltage level?).

Therefore, the objective may be to harmonise the absolute level of the basic G-charge. There are two issues to be considered in this:

- the level of the harmonised charge, which could be zero or some positive value
- the scope for possible deviations from the harmonised level (e.g. whether a harmonisation within a range would be permitted or whether the harmonised value is a minimum).

Three options could be envisaged depending on the view taken on these issues:

- Option 1: “G=0” in all Member States
- Option 2: a positive G-charge in all Member States (e.g. $G = 0,5$ or 1)
- Option 3: a determination of a range within which all national G-charges have to remain (e.g. “G = 0-0,5”).

The harmonised G-charges would be average charges, covering G-charges on capacity and/or energy. Hence, Member States would keep the possibility to apply differentiated charges, provided the average is respected, for instance in order to provide national locational signals.

It should be noted that the harmonised G-charge would - of course - not cover costs which are directly attributable to specific generators, such as ancillary services and losses. Those would be charges separately, on top of the basic G-charge.

Costs, which are not transmission costs but nevertheless often recovered through network access charges, such as costs for public service obligations, are not included in the basic G-charge. In order to avoid additional trade distortions stemming from such costs, those should normally not be recovered through charges on generators.

3.2. The introduction of a specific G-charge to provide for appropriate long-term locational signals.

As explained earlier in this paper, short-term locational signals are already now provided to a certain extent through additional network charges resulting from congestion, in particular at interconnectors between national systems. It could thus be argued that at the moment the introduction of long-term locational signals through a new specific G-charge is not necessary.

Even if one believes that the current short-term signals resulting from congestion are insufficient, one could consider to introduce an additional short-term signal - in the form, e.g., of a specific

charge for individual losses caused on the EC network – before applying long-term signals.

However, the situation in terms of congestion is likely to change over time, if and as congestion is removed through the construction of new interconnectors. Therefore, it could be argued that specific long-term locational G-charges, to be added to the harmonised basic G-charge, should be introduced as early as possible.

Such a specific long-term “locational” G-charge would be positive in areas of surplus production and negative in areas of surplus consumption. The level of the – negative or positive – locational charge would, in principle, depend on the relative degree of the production/consumption imbalance and the impact on current and future network costs of additional generation/consumption in the area concerned (“incremental costs”). A number of calculation methodologies seem conceivable in this respect. They would be based, among others, on typical load flow patterns and flow models. The development of such a detailed methodology would most likely require additional extensive research and expertise.

If locational signals were to be introduced at the time of the first set of guidelines, as a first initial step a simplified, rough approach might be adopted:

- the “area” to be looked at in terms of its generation/consumption balance might be defined as a “Member State”.
- only three different locational charges might exist: one single positive G-charge, for all surplus generation areas (=MS), one single negative G-charge for all deficit generation areas (=MS) and a zero charge for all balanced, or nearly balanced, areas. Regarding the value of this locational signal, it might during an initial period be set at a level comparable to the outgoing export charge applied in the context of the inter-TSO compensation system. The effect of this limited charge could then be monitored in terms of its effect and, if necessary, subsequently revised.
- only the *average* locational charges in a given Member State would be determined in the guidelines it would thus remain possible for Member States to apply different charges internally, as long as the average is respected.

The locational G-charge would be applied in principle to both existing and new generation. This seems appropriate since the price signal should not only influence decisions on where to locate new generation but also decisions on the discontinuation of existing generation, which might be made in case of excess capacity in the Community market as a whole.

In principle, the value of the charge would have to be adapted regularly, in order to accurately reflect developments of the typical load flow patterns. On the other hand, existing and new generators would need a certain degree of predictability of the level of the charges. Between those two objectives a reasonable balance would have to be drawn.

Participants of the Forum are invited to comment on all elements of this paper and to respond in particular to the following questions:

1. Harmonisation of the basic G-charge

Do participants agree that harmonisation must focus on the value of the G-charge, as opposed to the percentage split between G and L charges?

If yes, which of the following three basic option should be adopted under the first set of guidelines:

- Option 1: “G=0” in all Member States*
- Option 2: a positive G-charge in all Member States (e.g. $G = 0,5$ or 1)*
- Option 3: a determination of a range within which all national G-charges have to remain (e.g. “ $G = 0-0,5$ ”). ?*

2. Locational signals

Which of the following three basic option should be adopted under the first set of guidelines:

- Locational signals through congestion management only*
- Introduction of an additional short-term locational signal through a specific charge on generators to reflect individual losses caused.*
- Introduction of long-term locational signals through a specific charge on generators reflecting current and future infrastructure costs.*