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Review of the ITC annual cross-border infrastructure compensation sum

Energy Norway is a non-profit industry organization representing about 270 companies involved in the production, distribution and trading of electricity in Norway. Energy Norway's members each year produce nearly 130 TWh, which is some 99 per cent of all power production in Norway. Our members have approximately 2.5 million grid customers, which is about 91 per cent of Norway's grid customers. The members of Energy Norway have some 15 000 employees, and had a gross turnover to end-users in 2009 of 75-80 billion Norwegian kroner.

We strongly welcome the opportunity to respond to ACER's consultation on the ITC mechanism. We are deeply concerned that the current ITC mechanism distorts incentives for efficient operation and investment in the European transmission network. Given the distortion, we suggest ACER recommends a wide-ranging review of the ITC mechanism in its entirety and in the context of wider developments in the European power market – this would require considering changes to existing legislation. Prior to such a review, to minimize distortions, ACER's immediate decision should be to opt for an approach that results in a small infrastructure fund.

Our response to the consultation is divided into two parts. The first part of the response describes why we believe the existing ITC mechanism is broken and what should be done about it. The second part of our response addresses ACER's specific consultation questions.

Part I: our views on the compensation fund

In the first part of this response, we set out:

- the relevant aspects of the legal framework for the ITC mechanism, the way in which the mechanism currently functions, and the decision facing ACER;
- the approach which we believe ACER needs to take to make this decision given the legal context;
- the issues with the current functioning of the ITC mechanism which we believe are relevant to ACER's considerations; and
- the decision which we believe ACER should take.

Legal framework, today's mechanism and the decision facing ACER

Legal framework

The ITC mechanism has a long and convoluted history. It was first implemented following removal of charges for power flows across national boundaries, and sought to recognize that building assets to accommodate international flows of power created costs for TSOs which should to some extent be mutualized rather than borne by the domestic customers of the country(ies) in which the assets are located (i.e. paid for through national tariffs).

The ITC mechanism was first incorporated into European legislation in regulation 1228/2003. Similar requirements to those originally included were carried over in regulation 714/2009 (part of the Third Package). This requires that, *inter alia*:

Transmission system operators shall receive compensation for costs incurred as a result of hosting cross-border flows of electricity on their networks. (13(1))

The costs incurred as a result of hosting cross-border flows shall be established on the basis of the forward-looking long-run average incremental costs, taking into account losses, investment in new infrastructure, and an appropriate proportion of the cost of existing infrastructure, in so far as such infrastructure is used for the transmission of cross-border flows, in particular taking into account the need to guarantee security of supply. When establishing the costs incurred, recognized standard-costing methodologies shall be used. Benefits that a network incurs as a result of hosting cross-border flows shall be taken into account to reduce the compensation received. (13(6)).

While 714/2009 provides for an ITC mechanism which relates to the cost of losses and the cost of infrastructure, it is the latter only which is covered by the current consultation and which we consider in this paper.

These provisions relating to ITC were then further clarified in Regulation 838/2010. The Annex to 838/2010 sets out detailed requirements on:

- the principles behind the determination of the compensation fund (specifically, the use of forward looking long run average incremental cost (LRAIC) and standard costing methodologies);
- the rules for establishing contributions to the compensation fund from TSOs; and
- the rules for apportionment of the compensation fund between TSOs.

Operation of the mechanism

Under the requirements of 838/2010, while discretion is left as to the precise approach for setting the value of the fund, the operation of the mechanism given a particular infrastructure fund size is relatively unambiguously prescribed.

For a given fund size, TSOs:

- contribute to the system in proportion to the absolute value of net flows onto and from their transmission system, relative to the total of this measure across the EU; and
- Receive payments from the fund in proportion to a “transit factor” for the transmission system relative to the transit factor for the EU. The transit factor measures the lower of the absolute value of imports and exports^{1,2}.

As a result of these rules, for a given fund size, the net payment position of a national transmission system with respect to the fund will depend on the actual flows with neighboring systems in any given year. This will in turn depend on a range of short and longer term factors, including:

- the way in which European transmission systems are operated in real time;
- the relative wholesale price levels in countries across Europe³, in turn driven by factors such as fuel mix, fuel prices, generation outage conditions, the output from renewable generation and demand levels;
- the way in which European TSOs allocate capacity to cross-border points;
- the development of generation capacity and demand over time; and
- the extent of development of new interconnection capacity.

The decision facing ACER

838/2010 requires that ACER makes a proposal on the annual compensation sum for the ITC scheme, based on the principles established in the legislation described above. Until such a proposal is made, the EC has determined that the compensation sum should be €100m. ACER is also required to provide its opinion to the EC on the suitability of using LRAIC as the basis for calculating the compensation sum.

In order to make this proposal, ACER has commissioned a study from Consentec⁴ which investigates a number of different methodologies for estimating the appropriate size of the fund.

¹ There are also detailed rules for reducing the measure of net flows for edge countries (i.e. those on the inside edge of the countries within the ITC mechanisms) and rules for levying a €/MWh charge on imports and exports to perimeter countries (i.e. those on the outside edge the ITC mechanism), neither of which we describe in detail here.

² Receipts from the fund are allocated in proportion to a transit factor (75% weight) and a load factor (25% weight). For the purposes of this response we focus on the transit factor although the points we discuss in relation to the transit factor would also apply to the load factor.

³ It will not solely relate to the countries within the ITC mechanism, as a result of the potential for loop flows across the European transmission system.

⁴ Assessment of the annual cross-border infrastructure compensation sum, October 2012.

The study takes the requirements of 838/2010 as a starting point, and hence it is reasonable to assume that the methodologies investigated in the study are all consistent with its requirements.

The results set out in the study indicate that different interpretations of even the narrow requirements in 838/2010 can result in radically different values for the compensation fund. For Consentec's base case, in 2011 the size of the infrastructure fund varies from 100 m€ per year (incremental approach) to 470 m€ per year (restricted absolute approach) and to 1,300 m€ per year (absolute approach). Depending on the interpretation of methodology Consentec has shown that the fund size could vary by a factor of *at least* thirteen. The report provides little by way of indication as to how ACER should choose between interpretations.

By considering the approach to determine the size of the fund in isolation, ACER risks not fulfilling its own objectives or the objectives for the ITC mechanism. It is therefore critical that ACER considers carefully the basis on which it makes any decision on the compensation mechanism, and how it positions this decision with the Commission.

Approach to making a decision on the fund

In choosing how to decide the compensation sum, ACER must:

- be guided by the current legislative framework, which in turn must be taken as a whole;
- consider the full range of its options, which are not limited to the methodologies described by Consentec; and
- consider not just the direct requirements on determining the fund's size, but also consider the outcome of the operation of the fund on the effectiveness of the internal market.

In terms of the current legislative framework, while 838/2010 is prescriptive in terms of specifying the contributions to and apportionment from the fund, it says next to nothing on the objectives or rationale for the size of the fund and for the choice of an LRAIC methodology. Its requirements alone cannot, therefore, help ACER to determine a compensation sum.

714/2009 is more helpful in terms of setting out objectives which can guide ACER. In particular, it makes reference to:

- TSOs receiving “compensation for costs”, indicating that the fund should in some way relate to costs incurred;
- “benefits that a network incurs” being taken into account to reduce compensation, indicating that it is net costs which are of relevance;
- it makes reference to both LRAIC and “an appropriate proportion of the cost of existing infrastructure”, indicating that the fund can be both forward and backward looking in terms of both costing methodology and scope of assets

We note that it can be argued that not all of these principles have been carried through to the requirements of 838/2010. However, they remain legally binding.

The recitals to 714/2009 also provide an insight into the fundamental objectives of the mechanism and of the spirit behind the text in Article 13. They state that:

(11) In an open, competitive market, transmission system operators should be compensated for costs incurred as a result of hosting cross-border flows of electricity on their networks by the operators of the transmission systems from which cross-border flows originate and the systems where those flows end.

(12) Payments and receipts resulting from compensation between transmission system operators should be taken into account when setting national network tariffs.

These recitals imply that the objective of the ITC scheme is to avoid national network tariffs being set at a higher level in order to compensate individual TSOs for the development of network capacity to facilitate cross border flows. In this sense, the recitals indicate that the objective of the ITC scheme is to avoid specific costs being passed through to national network tariffs.

These objectives for the ITC scheme can be fulfilled in ways which, when the outcomes of the scheme are considered, may have an impact on the efficiency and effectiveness of the broader internal market. ACER must therefore further be guided by the overall objectives of the Third Package and its associated legislation.

At its highest level, the objectives of the Third Package relate to the completion of the internal market in electricity and gas. In 713/2009, which sets out the requirements of ACER, this is translated into a requirement to ensure arrangements established by TSOs take account of objectives of:

- effective competition and the efficient functioning of the market (e.g. Article 6(3b), 6(4), 6(6));
- market integration (e.g. Article 6(6)); and
- a sufficient level of cross-border interconnection open to third-party access (Article 6(4)).

In making a decision on the compensation fund, ACER clearly cannot do anything which is inconsistent with legislation. Within that constraint, it is the overall objectives of the fund and the need to deliver on the broader objectives required of arrangements to complete the internal market by which ACER should be guided.

We believe that this implies ACER should not make a straightforward decision on an appropriate value of the fund based on Consentec's analysis. We take this view because we believe:

- the current specification of the ITC mechanism acts against the objectives of completing the internal market;
- the methodologies set out by Consentec are not consistent with the principles of the mechanism;

- application of the methodologies set out by Consentec, while consistent with 838/2010, will worsen these “unintended consequences” of the mechanism; and
- the design issues which create these unintended consequences are “hard coded” into the requirements of 838/2010.

We now turn to an analysis of these unintended consequences, before setting out how we believe ACER should proceed.

Issues with the functioning of the ITC mechanism

The functioning of the ITC mechanism must be considered in terms of the size of the fund (the subject of the current consultation) and the rules for contributions to and apportionments from the fund. It is only when these two issues are considered in parallel that the outcomes of the fund can be understood. And as we note above, ACER must be concerned with both consistency of:

- the approach to setting the size of the fund with specific legislative requirements relating to the fund; and
- the outcome of the fund’s operation with the legislative principles behind the establishment of the fund and its role in the internal market.

There is a range of detailed issues associated with the functioning of the mechanism which we could suggest. However, for the purposes of determining the appropriate way to proceed, we believe ACER needs to consider three higher level issues:

- the ITC mechanism delivers outcomes which are inconsistent with internal market objectives;
- the approaches considered by Consentec are inconsistent with the principles behind the mechanism; and
- the ITC mechanism as specified results in outcomes which are arbitrary.

Outcomes which are inconsistent with internal market objectives

Distortion of behavior resulting in inefficient outcomes

As we note above, the fundamental purpose behind the ITC mechanism is to ensure that costs which are related to infrastructure that facilitates cross-border trade are socialized, and are not solely borne by the end customers of the country in which the assets are located. This is a consideration based on equity: it would be unfair for customers in country A to pay for assets which are there to benefit customers and producers in countries B and C.

It is a widely accepted principle that meeting considerations based on equity (such as recovery of a defined set of costs) must be balanced with considerations relating to efficiency. Economic efficiency, in the absence of market failure, is achieved when prices are related to marginal costs. If network tariffs are related to marginal costs, participants in energy markets will act in a way which:

- maximizes use of existing network assets; and
- results in the development of production and consumption assets (and hence of the network) in a way which minimizes total cost.

In natural monopolies such as energy networks, this is unlikely to result in recovery of all costs.⁵ Therefore, prices need to be adjusted to recover costs incurred in a way which minimizes the impact on efficiency. ACER in its ‘Draft Framework Guidelines on rules regarding harmonized transmission tariff structures for gas’⁶ also mirrors these key objectives of cost recovery and efficiency. It says:

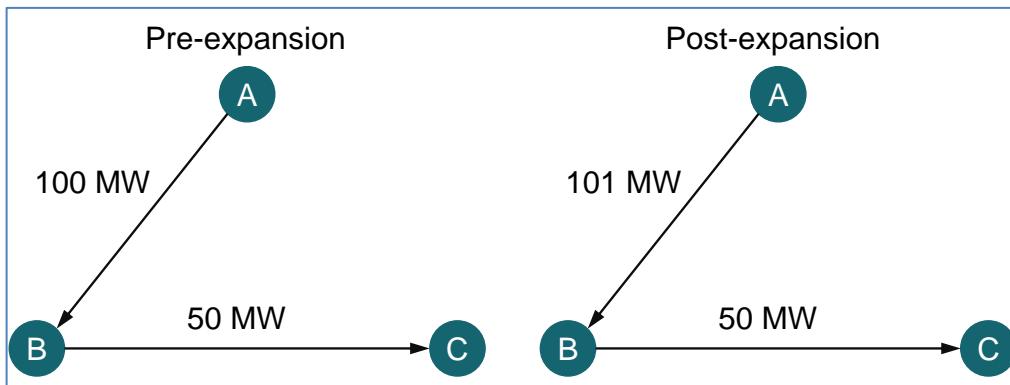
‘..the pricing of transmission capacity needs to strike a balance between facilitating short-term gas trading, on the one hand, and promoting cost recovery and providing long-term signals for efficient investment, on the other.’ (page 5)

Exactly the same considerations apply to the recovery of costs through the ITC mechanism. In other words, in the example below, the passing on of cost from country A to countries B and C should be done in such a way as to avoid distorting the behavior of either TSOs or market participants in A, B or C. Failure to do this will result in reduced efficiency of short and longer term outcomes. Put another way, failure to do this would not be consistent with the objectives of the internal market.

We believe it is clear that the existing ITC mechanism fails this test. It demonstrably distorts behavior in ways which are likely to create serious issues for the development of the internal market.

Consider a simple stylized network as illustrated in **Figure 1**. The network comprises three countries represented as nodes: A, B and C, with flows from A to B and from B to C as shown in the pre-expansion case. The same network is then shown, but with a reinforcement of the international line between A and B having been undertaken (post-expansion).

Figure 1 - Stylized network



⁵ Since marginal costs are typically below average costs for networks.

⁶ 4 September 2012. Available at:
http://www.acer.europa.eu/Official_documents/Public_consultations/PC_2012_G_14/PC_2012_G_14_FG_Tariff_Draft.pdf

Table 1 and **Table 2** show the payments into the infrastructure fund and receipts from the infrastructure fund in the pre and post-expansion, applying only the ITC mechanism's transit factor (i.e. we ignore the load factor for the purposes of this simple example). For the purposes of the calculation, we assume the value of the fund is 100 €m.

Table 1 - Infrastructure fund payments – pre-expansion

Country system	Net flow (MW)	Transit (MW)	Payment to fund (€m)	Receipt from fund (€m)	Receipt less payment (€m)
A	100	0	50.00	0.00	-50.00
B	50	50	25.00	100.00	75.00
C	50	0	25.00	0.00	-25.00
Total	200	50	100.00	100.00	0.00

Table 2 - Infrastructure fund payments – post-expansion

Country system	Net flow (MW)	Transit (MW)	Payment to fund (€m)	Receipt from fund (€m)	Receipt less payment (€m)	Post-exp. Less Pre-exp. (€m)
A	101	0	50.00	0.00	-50.00	0.00
B	51	50	25.25	100.00	74.75	-0.25
C	50	0	24.75	0.00	-24.75	0.25
Total	202	50	100.00	100.00	0.00	

Suppose the new investment in capacity on the link from A to B shown in the post-expansion case was socially beneficial although only marginally beneficial from a financial perspective, absent the ITC mechanism. The example shows that the ITC reduces B's financial incentives to invest (by 0.25 €m per annum), potentially deterring an efficient investment.

Although A is one of the parties deciding upon the capacity expansion, its net contribution to the fund is unchanged as a result of the expansion. Country C is not involved in the decision whether to expand the link from A to B and yet its net payment into the ITC mechanism falls by 0.25 €m.

Similar results would be obtained if the difference between the pre-expansion case and the post-expansion case did not relate to new infrastructure or reinforcement, but were related instead to reallocation of cross border capacity by TSOs to facilitate greater short term exchanges.

The conclusion from this very simple example is twofold. Firstly, the changes to net receipts or payments into the ITC mechanism bear little or no relationship to changes to costs or benefits associated with network capacity which facilitates international flows. Secondly, the ITC mechanism has the potential to distort operating and investment decisions away from efficient outcomes:

- In the short term, there can be incentives for TSOs (with or without the approval of their regulator) to change the way they release cross border capacity away from that which would be efficient in order to reduce exposure to ITC scheme payments; and
- in the longer term, there can be incentives for TSOs (again, with or without the approval of their regulator) to avoid undertaking efficient network investments (i.e. those with social welfare benefits above their costs across the EU) in order to reduce exposure to the ITC scheme payments.

Critically, as the size of the ITC fund increases, the scale of these potential distortions increases.

Failure to remove disincentives to efficient investment

As importantly, the ITC scheme cannot re-allocate the costs of building new infrastructure designed to achieve welfare enhancing cross border power flows in a way which removes disincentives on individual countries to build.

It is well recognized that, in order to ensure that individual countries have no disincentive to build infrastructure that is welfare enhancing overall, transfers will be required between Member States⁷. It is also recognized that these transfers need to be calculated based on the incidence of costs and benefits of infrastructure across systems. The EC is, in its proposed Regulation on Guidelines for trans-European energy infrastructure (COM(2011) 658), proposing just such an approach for major projects of common interest.

A mechanistic approach, based simply on the size of flows onto and from the system, or even more complex mechanistic approaches as have been considered previously, cannot have the same effects and therefore cannot remove disincentives for investments which support the completion of the internal market.

⁷ See the EC's proposal for an energy infrastructure regulation, COM(2011) 658, available here http://ec.europa.eu/energy/infrastructure/strategy/2020_en.htm and the report by Frontier Economics and Consentec "Improving incentives for investment in electricity transmission infrastructure", available here: http://ec.europa.eu/energy/gas_electricity/studies/doc/electricity/2008_rpt_eu_transmission_incentives.pdf

Summary on distortions

From this analysis, we believe ACER should conclude that the ITC scheme as currently defined operates *against* the objectives which will support completion of the internal market:

- effective competition and the efficient functioning of the market – it will provide incentives to distort flows and hence competition between countries;
- market integration – it will provide incentives to distort flows and network developments, both of which hinder market integration; and
- a sufficient level of cross-border interconnection open to third-party access – it will tend to distort network developments, leading to a sub-optimal level of interconnection.

Consentec's approach does not take account of the ITC principles

Here we describe why we consider the approaches considered by Consentec to take account of the benefits of cross border infrastructure are inconsistent with the principles behind the ITC mechanism.

Failure to take account of benefits

The objective of the fund is the recovery of costs related to cross border flows. However, 714/2009 (Art. 13(6)) requires that the “benefits a network incurs as a result of hosting cross-border flows shall be taken into account to reduce the compensation received.” This aligns with economics and common sense – any reasonable interpretation of cost recovery would also take account of the offsetting benefits of cross border flows of power facilitated by the horizontal network, which may include:

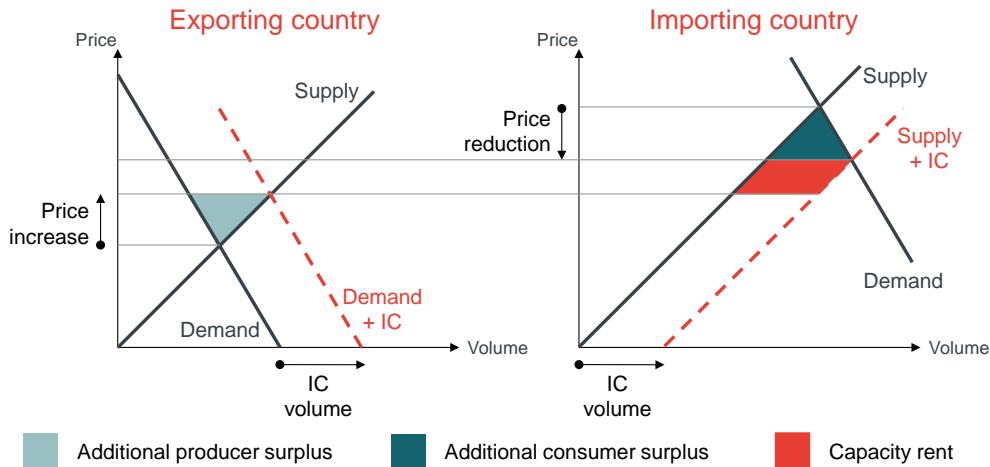
- improved security of supply;
- reduced costs of ancillary services;
- avoided network losses;
- avoided transmission capacity; and
- the reduced cost of generation.

714/2009 requires that the costs and benefits of cross-border flows be taken into account.

Normally, when contrasting costs and benefits, it is a welfare analysis (describe in the text box below) which would be referenced.

Social welfare analysis

A social welfare analysis considers the effect on consumer and producer surplus of some action. In the case of the ITC mechanism a social welfare analysis would consider the costs of network capacity against the benefits of cross border flows on producer and consumer surplus.



As shown, the cost of generation increases in the exporting country. As the price increases some of the consumer surplus in the exporting country is transferred to producer surplus (not shown). In addition, the greater generation quantity combined with the price increase creates additional producer surplus, depicted by the light blue triangle.

In the importing country, as the price falls some of the producer surplus is transferred to consumer surplus (not shown). In addition, the greater volume of electricity consumed combined with the price reduction creates additional consumer surplus, depicted by the dark green triangle.

In this example, the interconnector becomes congested before the prices in the two countries converge. The price difference multiplied by the flow volume is also a surplus, labeled capacity rent.

The total social welfare effect is the sum of the three areas described, i.e. the increase in producer surplus, the increase in consumer surplus and the capacity rent. In the case with perfectly inelastic demand, the size of the welfare would equal the cost saving of replacing expensive generation in the importing country by cheap generation in the exporting country.

This example demonstrates that congestion rent is only one component of the benefits of interconnector flows.

The ITC mechanism already takes account of the cost (or benefit) of network losses. While we recognize that it is difficult to quantify many of the other benefits, we can identify congestion rents. However, in estimating the benefits of congestion rent, it should be recognized that this is likely to significantly underestimate the true benefits of cross border interconnection as illustrated by the example in the text box above (and hence any determination of the fund size after congestion benefits have been fully included should be biased downwards).

Therefore, at the minimum, the fund should take account of the benefit of congestion rent. This view is consistent with what would appear to be at least part of the rationale the EC used to decide

upon the initial size of the fund as set out in 838/2010. In particular, ETSO's response to the EC's 2009 consultation on the design of the ITC mechanism says:⁸

18(a) "There is an overall understanding within ETSO that the previous ITC compensation fund, which is approximately €350M (net of losses) needs to be reduced. This reduction of the fund size is appropriate due to the development of market design; in particular the introduction of market based allocation mechanisms and the related congestion rents. ... A large majority of TSOs are of the opinion that a fund of maximum 100 M€ represents such an appropriate and reasonable fund."

It is also consistent with a reasonable view of equity. If international flows result in congestion rents which accrue to a TSO (in whatever proportion with other TSOs), these rents should benefit national network tariff payers. If the costs of international network capacity are socialized, the revenue which results directly from flows on this capacity should also be socialized in line with the requirements of 714/2009. Failure to do this would grant the network tariff payers of particular countries a windfall (from congestion rents) in the same way as the absence of a compensation arrangement would result in those same tariff payers facing a cost unrelated to the benefits they receive.

It is also consistent with the EC's latest thinking. The EC follows this logic of linking the benefits and costs of cross border infrastructure in its proposed Regulation on Guidelines for trans-European energy infrastructure (COM(2011) 658). The proposed regulation aims at implementing priority transport infrastructure "*by allocating costs depending on the benefits provided ...*"⁹ To do this the proposed regulation "*gives responsibility to national regulatory authorities and ACER to allocate costs across-border for PCIs ... according to the benefits in the Member States directly or indirectly concerned by these PCIs.*"¹⁰ The EC clearly links the costs of cross-border infrastructure to the benefits that accrue as a result of that infrastructure to countries on whose territory the infrastructure is built and on other affected countries within the EEA.

The proposed infrastructure regulation is also helpful in determining how congestion rent should be considered. The proposed regulation says that the costs of generation should be included in the cost benefit analysis.¹¹ As demonstrated in the text box above, congestion rent can be used to estimate a lower bound on the benefits of flows, and provides some indication of where the benefits of flows fall.

Clearly, the EC considers for the proposed infrastructure regulation that the benefits of cross border flows should be considered in their entirety. Transposing this logic to the ITC mechanism implies that at a minimum *all* congestion rent should be considered to reduce costs, not only the congestion rent that has been used to reduce network charges or that has been used for the maintenance of existing or investment in new cross-border infrastructure.¹²

⁸ ETSO Response to EC Consultation Paper on the Inter-TSO Compensation Mechanism, 17 March 2009.

⁹ COM(2011) 658, page 3.

¹⁰ Ibid. page 7.

¹¹ Ibid, Annex V (6)(b) and (c).

¹² In this response we say that *all* congestion rent should be taken into account in determining the size of the ITC infrastructure fund. However, we do not intend to express a view as to the appropriate treatment of congestion rent from interconnectors with third party access exemption.

Our view is therefore that the totality of congestion rent should be taken into account in assessing the size of the infrastructure fund.

While some may argue that Consentec's interpretations of the treatment of congestion rent is consistent with 838/2010, we do not believe they are consistent with 714/2009, with a common sense interpretation of the way the ITC scheme should work, or with the EC's latest thinking. Consentec's "narrow interpretation" is that only congestion rent that has been used to fund network investment in order to maintain or increase cross border capacity should be considered, and its "wide interpretation" is that also the congestion rent used to reduce network charges should be considered. Both interpretations significantly underestimate the benefit accruing to a country from rents on cross border flows.

In addition, in their calculations looking at congestion rents, Consentec subtract congestion rent from the annual cost of all transmission assets, i.e. before applying the "Global Transit Share" - GTS. This is equivalent to assuming rents compensate the whole network rather than the horizontal network which facilitates the flows which generate them (and whose costs the ITC scheme attempts to socialize). The result is that the benefit of congestion rent is multiplied by 6-7%, i.e. the benefit is reduced by a factor of 15 or 16. It makes no economic sense to take account of all costs but only a small proportion of the benefits of cross border flows. We would therefore argue that the benefit of the entire congestion rent should be netted off the annual cost of transmission after the GTS has been applied.

Conclusion on principles of the mechanism

We conclude that an approach to determining the size of the ITC infrastructure fund should fully take account of the benefits of cross border flows, in line with the principles for the ITC mechanism, economic thinking and the EC's thinking in developing the proposed infrastructure regulation. Such an approach would result in benefits that are greater than those implied by congestion rent alone even if the benefits were limited to the savings due to reduced generation costs (i.e. ignoring the benefits of increased security of supply, etc.).

As a second best option, if it were thought too difficult to estimate the reduction in generation costs due to cross border flows, the full value of congestion rent should be taken into account in determining the size of the ITC infrastructure fund.

None of the options considered by Consentec for determining the size of the infrastructure fund are in line with the principles the ITC mechanism or the EC's thinking in developing the proposed infrastructure regulation. All of the approaches considered by Consentec should therefore be rejected.

Again, the larger the size of the fund, the greater the impact of failing to take account of benefits appropriately will be, in terms of inequitable redistributions.

Arbitrary outcomes from the ITC mechanism

The ITC mechanism results in transfers between systems which are arbitrary. The current rules for deciding how much each country contributes to the fund and how much each country receives from the fund result in arbitrary payment flows that bear no relationship to the causes of costs.

This can be seen by going beyond the simple examples above and considering the real world of meshed networks and loop flows. Consider two possible cases of the effect of loop flows on the ITC mechanism:

- Case 1 – an increase of 100 MW of generation in northern Sweden combined with a decrease of 100 MW in southern Sweden; and
- Case 2 – an increase of 100 MW of generation in northern Germany combined with a decrease of 100 MW in southern Germany.

Suppose with Case 1, 80 MW flows through the Swedish transmission network from North to South and the remaining 20 MW flows from northern Sweden into northern Norway, through the Norwegian network to southern Norway and then across the border into southern Sweden. According to the ITC mechanism's rules, both the net flow and transit in Sweden and Norway are unaffected by the flow described above. Therefore, even though with Case 1 Sweden causes a loop flow of 20 MW to pass through Norway, Sweden's contribution to the ITC mechanism does not increase and nor does Norway's receipts from the mechanism.

With Case 2, 80 MW flows from the wind parks in northern Germany through the German grid from North to South and the remaining 20 MW flows from northern Germany through the Netherlands, Belgium and France and then into southern Germany. According to the ITC mechanism's rules, the net flow in each of the four countries is unchanged. However, the transit in each of the four countries increases by 20 MW. Therefore, even though with Case 2 Germany causes a loop flow of 20 MW to pass through the Netherlands, Belgium and France, Germany's contribution to the ITC mechanism does not increase. However, Germany's receipts from the mechanism increase (along with the receipts of the other three countries) since its transit flow has increased. In Case 2, Germany benefits from the loop flow that it causes in other countries. The two cases of loop flows clearly demonstrate that with the added real world complexities of transmission flows, the potential for arbitrary transfers is high. This is an issue with a small fund, but will clearly become unsustainable with a larger fund.

Consentec's analysis of the infrastructure fund size within the legal framework of 838/2010 arrives at three possible fund sizes with a thirteen fold difference in 2011. This demonstrates that the legal framework from 838/2010 in isolation of the principles of the ITC mechanism (as defined in 714/2009) and ACER's requirements (as defined in 713/2009) provides little guidance as to the appropriate size of the infrastructure fund and leads to an arbitrary fund size, which bears no relationship to the net costs of cross border flows and may therefore distort market outcomes.

The decision which ACER should take

Given these problems, in an ideal world where ACER (or the EC) has the freedom to design an economically efficient mechanism for compensating national transmission systems for hosting cross border flows, the existing ITC scheme should be scrapped and a completely redesigned mechanism put in its place. As we have shown, the current ITC mechanism serves to undermine the functioning of the proposed energy infrastructure regulation. Therefore, it makes sense for ACER and the EC to take a step back and to consider the ITC mechanism in the context of other legislation and the fundamental objectives of what it is that the EC is trying to achieve.

A possible solution for such a new approach to the treatment of new and existing cross border infrastructure is as follows.

For new cross border infrastructure, identify significant projects, undertake a European level cost benefit analysis, and reallocate costs or benefits to ensure that no country is made worse off as a result of the investment. The EC is already developing such an approach, as described in the proposed energy infrastructure regulation COM(2011) 658.

We would suggest either ignoring smaller new cross-border infrastructure projects or encouraging countries to develop bilateral arrangements for allocating the costs and benefits of smaller projects so that neither country is made worse off. The rationale here is that since the efficiency gains from undertaking a European level cost benefit analysis for smaller projects will be relatively lower, it would make sense to focus efforts on assessing the effects of larger projects.

For existing cross border infrastructure, either no compensation is made or the existing fund size of 100 €m is applied and is slowly reduced over time in line with depreciation.

This suggested approach is conceptually in line with Consetec's incremental approach. The key difference is that in place of using a mechanism that allocates the costs of new cross border projects in an arbitrary way we suggest allocating costs and benefits in a way consistent with ACER's requirements as set out in 713/2009.

- We note, however, that ACER does not have the remit within current legislation to redesign completely the scheme. However, it does have the right (indeed obligation) to ensure that its decisions in all areas promote the completion of the internal market. Given the analysis set out above, we believe the only course of action open to ACER within the existing legislative framework is to: recommend to the EC that the existing fund size be maintained at 100 €m (or lower), in order to minimize the distortion caused by the ITC scheme;
- point out to the EC the distortionary issues with the existing ITC scheme (within the opinion provided on the appropriateness of LRAIC); and
- recommend that until these issues are resolved the fund size is not increased.

Part II: responses to consultation questions

1. *Has Consentec's study considered a sufficient range of potentially suitable options for assessing the ITC infrastructure fund? What other options do you believe should be included in the assessment?*

No. First, the assessment of benefits is not correct. A version of analysis in which all (as opposed to 7%) of the benefits resulting from international flows rents on international transfers are taken into account, in line with 714/2009. Second, the analysis needs to be extended beyond a mechanistic application of different interpretations of the concept of LRAIC to actually consider the impact on outcomes for the internal market of the mechanism's operation with different sizes of fund.

2. *Are the criteria adopted to assess these options and their application to the identified options appropriate? What additional or alternative criteria do you think should be applied?*

838/2010 does not, in our view, provide any real guidance on the way to determine the size of the fund. ACER needs to go back to 714/2009 (where the legally binding principles behind the fund are set out) and 713/2009 (in terms of ACER's overall objectives). The effect of the fund in supporting the completion of the internal market should be the overriding consideration. In

interpreting this, ACER should have regard to the direction of the EC's latest thinking in the proposed infrastructure regulation.

3. *Of the options identified by Consentec, do you have any preferences? If so, please provide reasons for your preferences.*

All are inappropriate as they do not adhere to the principles of the ITC scheme and, more importantly, all will result in a fund which distorts internal market outcomes more than the current fund.

4. *Are the assumptions adopted for the illustrative numerical analysis appropriate? Considering the practical limitations of availability, what other data or assumption do you believe should be used in such analysis?*

No. The assumption that only 6-7% of the congestion rents are taken into account is not appropriate, nor is the assumption that only some of the total congestion rent amount should be considered as a benefit.

The analysis as a whole needs to be broadened to consider the distortionary effects of the mechanism on the internal market.

5. *How do you believe the different parts of the congestion revenues should be treated in calculating the ITC infrastructure fund, and why?*

All congestion rent should be treated as a benefit¹³. It results from the horizontal network (flows could not be accommodated without it) and should be treated as not just accruing to Member State's which happen to be on either side of bottlenecks. It should be recognized that it is a conservative estimate of the benefit of international flows.

As costs are socialized, so then should be the benefits (i.e. all congestion rents). Failure to do so would result in the same inequitable outcome as would be the case had costs not been socialized to start with, because national network tariff payers will benefit from reductions in network tariffs as a result of the rents, and will not have to bear all costs as a result of the ITC scheme. The only equitable approach is to socialize both the costs of the horizontal network and the benefits resulting from flows on the horizontal network, namely congestion rents (at a minimum).

6. *Do you agree with Consentec's assessment and the preliminary conclusions on the options for determining the ITC infrastructure fund?*

No. The options considered are too narrow and the conclusions are drawn from analysis which fails to take the full range of relevant considerations into account.

¹³ Here we do not intend to express a view as to the appropriate treatment of congestion rent related to cross border interconnectors that are exempt from third party access rules.

7. *What are your views regarding the suitability of using LRAIC to determine the ITC infrastructure fund? Do you consider the LRAIC proposed by Consentec appropriate?*

LRAIC is a forward looking cost concept. The principles of ITC, based on its history and as set out by 714/2009, relate to recover of costs incurred (net of benefits). It is not clear why LRAIC is relevant in relation to the calculation of costs incurred historically. It is analogous to a regulator setting the allowed revenue of a TSO in relation to the cost of its next investment. This is not to our knowledge a practice adopted by any national energy regulator in the EC.

LRAIC is a principle which is frequently used in the telecoms industry and in the energy industry for setting prices, because economic efficiency is improved if prices equate to a measure of marginal costs. However, as we explain in Part 1, in natural monopoly industries, this will not ensure cost recovery. Since cost recovery is the principle objective of the ITC mechanism, the role of LRAIC should be small.

8. *Are there any other issues that you believe should be taken into account in this review? In particular, how do you believe the ongoing wider developments in the European energy market and regulatory arrangements should impact the Agency's proposal on the infrastructure fund?*

Yes. The review should follow the direction of the EC's latest thinking embodied in its proposal for an infrastructure regulation, and it should consider the overall impact of ITC in relation to completion of the internal market.

If ITC risks acting as a barrier to the completion of the internal market, it is not clear why ACER or the EC would consider it appropriate to proceed with increasing the size of the scheme as opposed to reducing it to reduce or remove the distortion.

Best regards
Energy Norway

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