



The Single Electricity Market:

Transmission Use of System Charging

Decision Paper

AIP-SEM-07-50

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Summary

In June 2005, the Commission for Energy Regulation (the “CER”) and the Northern Ireland Authority for Energy Regulation (the “NIAER”), collectively known as the Regulatory Authorities, published a decision document (the “SEM High-Level Design Decision document” or “HLD”). That document outlined the design for the Single Electricity Market (the “SEM”) for the island of Ireland, and included a decision that the SEM should include shallow connection charging together with locational use of system charges for generation.

Following the publication of the document, the Regulatory Authorities have had extensive discussions with EirGrid and SONI, as the system operators for the island of Ireland, on the implementation of this policy, culminating in the publication in July 2006, of a consultation paper (the “July paper”).

Eleven non-confidential responses to the consultation were received. Having reviewed these, the Regulatory Authorities have made the following decisions:

- (i) Generators should pay a locational transmission use of system charge calculated using a methodology based on that presently employed by EirGrid in the Republic of Ireland.
- (ii) That the Regulatory Authorities consider that further work is required on the generation scenarios to be used in the derivation the use of system tariff, and will take a view on the appropriateness of further consultation when the options and their impacts are better understood. The Regulatory Authorities will pursue with the system operators options for giving greater transparency, whether through: the publication of, and/or consultation on, input assumptions; enabling participants to reproduce results; or the auditing of the calculations.
- (iii) It is appropriate that the costing of network components for the purpose of calculating the TUoS tariffs should use a number of standardised categories of transmission assets. The exact number and definition of such categories will emerge with further work, but the Regulatory Authorities will consider it appropriate if these cost categories are jurisdictionally specific.
- (iv) Generator TUoS charges should be calculated on an all-island basis, irrespective of any financial transfers between transmission companies. Costs recovered through generation TUoS charges should be equivalent as between the two jurisdictions, although it remains to be decided whether it is EirGrid system operator costs that should be

omitted from generation TUoS charges or SONI costs that should be included.

- (v) In order to offset any increase in costs to NI consumers relative to consumers in ROI, the Regulatory Authorities consider it appropriate to make an adjustment, up until the first of the cancellation dates in the PPB contracts, calculated each year as part of derivation of the annual TUoS tariffs and taking into account the locational generation TUoS tariff.
- (vi) The Moyle interconnector will be included in the generation scenarios to be used for the derivation of generator TUoS tariffs.
- (vii) All embedded generators should be subject to generation TUoS charges, albeit, pragmatically, charges for embedded generators below 10 MW should remain at zero.
- (viii) The Autoproducer provisions in ROI should be retained but it is not necessary for the purposes of the SEM for these provisions to be extended to NI.
- (ix) All-island generation TUoS should be introduced as of 1st January 2008, coincident with the harmonisation of connection charges, albeit rights to use the all-island system take effect at SEM Go-Live.

The legislative and regulatory framework for the SEM is still under development. Specifically the means precisely by which a combined all-island use of system and connection charging framework will be enshrined has not yet been decided. Nevertheless, one possible approach is that each transmission company will continue to publish its own statement of charges, approved by the respective Regulatory Authority, and in accordance with the respective statutory or licence obligations. Nevertheless, the two sets of charges, when taken together, will form a combined set of charges calculated in accordance with the all-island methodology.

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I INTRODUCTION

In June 2005, the Commission for Energy Regulation (the “CER”) and the Northern Ireland Authority for Energy Regulation (the “NIAER”), collectively known as the Regulatory Authorities, published a decision document (the “SEM High-Level Design Decision document”)¹. This document outlined the design for the Single Electricity Market (the “SEM”) for the island of Ireland, and included a decision that the SEM should include shallow connection charging together with locational use of system charges for generation.

Following the publication of the document, the Regulatory Authorities had extensive discussions with EirGrid and SONI, as the system operators for the island of Ireland, on the implementation of this policy, culminating in the publication in July 2006, of a consultation paper² (the “July paper”).

Eleven non-confidential responses to the consultation were received, and this paper reviews these responses in relation to transmission use of system charging policy, and presents the Regulatory Authorities’ decisions in respect of the issues raised. The Regulatory Authorities’ decisions relating to generation connection policy were reported separately in September 2006³.

¹ “The Single Electricity Market (SEM) High Level Design Decision Paper”, AIP/SEM/42/05, 10 June 2005.

² “The Single Electricity Market: Connections and Transmission Use of System for Generation. A Consultation Paper”, AIP-SEM-72-06, 5 July 2006.

³ “The Single Electricity Market (SEM): Generation Connection Policy Decision Paper”, AIP/SEM/114/06, 1 September 2006.

II BACKGROUND

II.1 Present Policy

Currently connection and use of system charging policy differs between Northern Ireland (NI) and the Republic of Ireland (ROI).

II.1.1 Northern Ireland

As explained in the decision paper on generator connection policy, in NI, Northern Ireland Electricity (NIE) has a connection policy which is termed “deep”, whereby the cost of assets directly connecting a generator, and the cost of any reinforcements required at the voltage of connection and at the voltage above as a result of the connection, are charged specifically to the connectee through connection charges. The balance of the costs of “providing, operating and maintaining the system”, over and above the costs recovered through connection charges, are recovered through use of system charges. Of total transmission use of system charges, 25% is levied on generators and the Power Procurement Business (PPB) and 75% is levied on suppliers.

For 2006/7, generator transmission use of system charges are £287.30 per month for each MW of generator-connected capacity, which, on an annual basis, amounts to £3.4476 per kW. This figure is the same irrespective of location or the voltage of connection.

II.1.2 Republic of Ireland

In ROI, EirGrid operates a “shallow connection” policy, whereby only the assets required directly to connect a connectee to the system are charged to the particular connectee through connection charges. A greater proportion of the transmission system is recovered through transmission use of system charges, for which EirGrid employs a locational, “reverse MW-mile” methodology. The methodology consists of calculating the incremental MW flow on each transmission circuit resulting from the presence of each generator, and applying a cost for each transmission circuit allows a cost for each circuit used, and hence an aggregate cost across the entire network, to be ascribed to each generator. This cost, divided by the capacity of the generator, forms the basis of the transmission use of system (TUoS) tariff. Negative tariffs for wind generators are set to zero, on the grounds that such intermittent generation cannot be relied upon to defray transmission system investment and hence it is inappropriate that they should actually receive payment.

For 2006/7, EirGrid's Generation Network Location-Based Capacity Charge ranges from -€0.9328/kW/yr to €12.9532/kW/yr, with an average of over €6/kW/yr.

Present EirGrid transmission use of system charges for generation include also 'Generation System Services Direct Trip Charges' and 'Generation System Services Fast Wind-down Trip Charge'. A separate consultation paper⁴ covering these charges, in addition to the arrangements for ancillary services under the SEM, was published on 26 July 2006.

II.2 High Level Decisions for the SEM

In June 2005, the SEM High Level Design Decision Paper set out the high-level design features of the proposed Single Electricity Market (SEM), determined following the publication of proposals on 31 March 2005 and a period of consultation, including bilateral meetings with industry participants, a workshop and discussions with the system operators.

With regard to transmission use of system charges, the SEM High Level Design Decision Paper stated that:

- *“As a corollary of shallow connection charges, generators should pay a locational charge as part of their TUoS”*
- *“The Regulatory Authorities’ propose that the details of TUoS locational charges be considered in parallel with the development of the detailed rules”*

It was against this background that the Regulatory Authorities published the July paper.

⁴ “Single Electricity Market: Day 1 Proposal for System Support Services in NI and Ancillary Services, Short Notice Redeclaration Charges and Trip/Fast Wind-down Charges in the ROI”, AIP-SEM-96-06, 26 July 2006. A subsequent decision paper, “Single Electricity Market: Day 1 Decision for System Support Services in NI and Ancillary Services, Short Notice Redeclaration Charges and Trip/Fast Wind-down Charges in the ROI”, AIP-SEM-160-06, was published on 29 September 2006.

III THE JULY PAPER

In the July paper, the Regulatory Authorities considered that any treatment of transmission use of system that is currently implemented on the island of Ireland that meets the requirements of the High Level Design Document was likely to be a sensible approach for the SEM. In particular, adopting this approach would:

- (1) maximise the re-use of existing systems and procedures, minimising costs and risks to SEM implementation;
- (2) result in treatment that is familiar to users in one of the two jurisdictions.

The Regulatory Authorities noted that the present approach to transmission use of system charging in ROI fulfils the requirements of the High Level Design Document in applying a TUoS tariff that applies a locational charge on generators. Thus, unless there were particular characteristics of the transmission system in NI, or of the transmission systems in ROI and NI when combined as a single all-island system, that implied that it was no longer applicable, then the Regulatory Authorities proposed that the approach currently adopted in ROI should be adopted as the basis of connections and transmission use of system charging for the SEM.

Without the introduction of the SEM, EirGrid would have been considering how the derivation of TUoS tariffs might be improved. The Regulatory Authorities considered that, with the introduction of the SEM and should it be decided that the EirGrid methodology be adopted for the SEM, it was appropriate that any such improvements still be considered.

III.1 Changes to the EirGrid Methodology

With regard to the calculation of the transmission use of system tariff, the July paper noted that a property of the reverse MW-mile methodology is that the change in the sign of the overall flows over significant (in terms of cost) circuits can have a significant effect on the tariffs of locations that are modelled as using those circuits.

It was also noted that EirGrid based the tariff on a generation scenario, which is derived by scaling the MEC of each generator by a uniform factor. Analysis undertaken for the Regulatory Authorities by the system operators showed, however, that the greater penetration of wind generation in ROI, combined with a greater proportion of the lowest merit plant, resulted in the modelled flows on the interconnecting circuits between North-South being lower than

might reasonably be expected and even reversing in some instances. A number of options for deriving a more representative generation scenarios were discussed and it was noted that further work is required.

The July paper described a further element of the methodology as being the cost assigned to each of transmission circuit. Such data did not exist for the NI transmission system in a form suitable for use in the TUoS tariff calculation, and the data for EirGrid's system was due for review. A number of options were discussed.

III.2 Issues Arising

A number of issues arising from the proposal to apply on an all-island basis the methodology current applied in ROI were discussed in the July paper. These included:

- (i) *Cross-jurisdictional revenue flows*: It was noted that, although an all-island generation locational use of system tariff could be designed to recover the required combined revenue of the transmission companies in the two jurisdictions, this did not mean that the required revenue of the transmission companies in each jurisdiction would be recovered from the users connected in that jurisdiction. Whilst such a cross-jurisdictional revenue flow might not be an issue per se, it was observed that a number of factors could affect this flow, including: parity of costs recovered in each jurisdiction; exchange rate risk; and parity of price controls.
- (ii) *Moyle*: It was noted that Moyle Interconnectors Limited currently does not pay use of system charges. It was proposed that nevertheless, it was appropriate to include Moyle in the generation scenario from which the tariff is derived. It was also suggested that the fact that charging use of system to Moyle could increase the possibility of a shortfall in Moyle's revenues as against its costs, which would be recovered from NI customers through the Collection Agency Revenue Requirement, was not sufficient reason to limit cross-jurisdictional revenue flows.
- (iii) *Embedded generators and Autoproducers*: It was proposed that, under the SEM, all embedded generators over 10 MW should be subject to transmission use of system charges, as currently is the case in ROI. The July paper also sought views as to whether the current ROI provisions whereby Autoproducers pay either generation charges or demand charges, but not both, should be applied in NI, abolished in ROI, or whether the present disparity should remain.

- (iv) *Transitional issues*: It was proposed that no arrangements for gradual phasing-in of all-island use of system charges, or grandfathering of existing charges, were appropriate.

III.3 Future Refinements

The July paper acknowledged that tariffs generated using the reverse MW-mile methodology are potentially vulnerable to volatility. It was noted that the system operators had this issue under review, and that any developments would be relevant irrespective of the introduction of the SEM, and that any improvements would be welcomed at any stage, not just as a special issue that must be addressed prior to the SEM.

IV DECISIONS

IV.1 General

Generators should pay a locational transmission use of system charge calculated using a methodology based on that presently employed by EirGrid in the Republic of Ireland.

IV.2 Use of System

The Regulatory Authorities consider that further work is required on the generation scenarios to be in the derivation of transmission use of system tariffs, and will take a view on the appropriateness of further consultation when the options and their impacts are better understood. The Regulatory Authorities will pursue with the system operators options for giving greater transparency, whether through: the publication of, and/or consultation on, input assumptions; enabling participants to reproduce results; or the auditing of the calculations.

It is appropriate that the costing of network components for the purpose of calculating the TUoS tariffs should use a number of standardised categories of transmission assets. The exact number and definition of such categories will emerge with further work, but the Regulatory Authorities will consider it appropriate if these cost categories are jurisdictionally specific.

IV.3 Cross-jurisdictional issues

Generator TUoS charges should be calculated on an all-island basis, irrespective of any financial transfers between transmission companies. The categories of costs recovered through generation TUoS charges should be equivalent as between the two jurisdictions, although it remains to be decided whether it is EirGrid system operator costs that should be omitted from generation TUoS charges or SONI costs that should be included, and the system operators will continue to develop proposals in this regard as part of developing an all-island generator transmission use of system tariff.

In order to offset any increase in costs to NI consumers relative to consumers in ROI, the Regulatory Authorities consider it appropriate to make an adjustment, up until the first of the cancellation dates in the PPB contracts, calculated each year as part of derivation of the annual TUoS tariffs and taking into account the locational generation TUoS tariff.

IV.4 Moyle

The Moyle interconnector will be taken into account in deriving the generation scenario used for the derivation of generator TUoS tariffs.

IV.5 Embedded Generators / Autoproducers

All embedded generators should, in principle, be subject to generation TUoS charges, albeit, pragmatically, charges for embedded generators below 10 MW should remain at zero.

The Autoproducer provisions in ROI should be retained but it is not necessary for the purposes of the SEM for these provisions to be extended to NI.

IV.6 Date of Harmonisation

All-island generation TUoS should be introduced as of 1st January 2008, coincident with the harmonisation of connection charges, albeit rights to use the all-island system take effect at SEM Go-Live.

V NEXT STEPS AND TIMETABLE

As described in the July paper, The legislative and regulatory framework for the SEM is still under development. Specifically the means precisely by which a combined all-island use of system and connection charging framework will be enshrined has not yet been decided. It is anticipated that each transmission company will continue to publish its own statement of charges, approved by the respective Regulatory Authority, in accordance with the respective statutory or licence obligations. Nevertheless, the two sets of charges, when taken together, will form a combined set of charges calculated in accordance with the all-island methodology.

The date of introduction of the all-island generator TUoS will be 1st January 2008, to coincide with the introduction of harmonised connection charging, with a use of system tariff published in September 2007.

APPENDIX A

Responses to Consultation and Decisions

Eleven non-confidential responses to the July paper were received.

A.1 General

A.1.1 Comments received

Six respondents commented generally on the adoption on a shallow connection policy with locational charging. One respondent welcomed the utilisation of the current ROI treatment for generation transmission use of system as the basis of the SEM, whilst a second agreed that it was the best initial starting point to fulfil the HLD requirements. A third respondent supported the principle of locational charging in order to stimulate investment in areas of more benefit to the network, whilst another said the proposals were broadly acceptable. A fifth respondent accepted that the proposals represented an appropriate way of implementing TUoS charging for the SEM but said that, given the existing differences in the arrangements in the two jurisdictions, the methodology had the potential to create market distortions in some respects. The final respondent was unconvinced that locational signals in TUoS were necessary since locational signals were already present in Transmission Loss Adjustment Factors and was also concerned that, whilst a shallow connection policy could be an enabler for new entry, care was needed to ensure that there would not be inefficient location of generation having a low shallow cost but large deep cost.

A.1.2 Position of the Regulatory Authorities

The Regulatory Authorities welcome the expressions of support for the decision in the SEM HLD Decision paper. The RAs recognise that locational TUoS tariffs, inappropriately derived, would have the potential to cause distortions and inefficiencies but believe that under the proposals this will not be the case.

The Regulatory Authorities do not agree with the view that locational signals in TUoS are unnecessary just because locational signals are already present in the TLAFs. It might be appropriate that a transmission system, which was lossy but costless in terms of investment, operation and maintenance, would warrant locational signals through TLAFs but not additionally through TUoS. Conversely, a transmission system that was lossless would not deliver any locational signals through TLAFs, although it would still be appropriate to

reflect locationally the incremental costs of investment, operation and maintenance of the transmission system through TUoS. Thus the locational signals delivered through TUoS and TLAFs reflect different sets of costs, and the locational signals in respect of one set, in general, do not reflect the other.

A.1.3 Decision of the Regulatory Authorities

Generators should pay a locational transmission use of system charge calculated using a methodology based on that presently employed by EirGrid in the Republic of Ireland.

A.2 Use of System

A.2.1 Comments received

In respect of the calculation of transmission use of system tariffs, six respondents commented on the generation disposition or scenario used in the derivation of transmission use of system tariffs. Two respondents agreed that the generation scenarios used in the derivation of TUoS tariffs should reflect the generation scenarios used for transmission investment planning. One of these suggested that this might involve using many more scenarios and considering the state of the transmission system at times other than peak and taking account of the likely merit order of generating units. A third respondent suggested that generators should be classified into: baseload; mid-merit; low-merit; peaking; and wind, whilst another said that a simple pro-rata dispatch was no longer suitable with higher plant margins and greater wind penetration and favoured the use of a 'banded economic dispatch' whereby the dispatch would be based on the Plexos model adjusted to take account of peak conditions. Different scaling factors would then be assigned to each class. A fifth respondent said that a full study of the impact of generation disposition had to be undertaken and consulted upon before a method of scaling generation were adopted. The final respondent said that modelling data should be made available to allow replication and analysis by participants.

Four respondents commented on the costing of network components. One agreed with the continued use of replacement costs, as alternatives may not result in a sustainable network. A second favoured the development of a number of standard costs to cover a pragmatic number of asset categories, but felt that introducing jurisdictional variations seemed like a second or third order consideration. However, a third respondent was concerned that using standard costs for a number of categories might send perverse signals for plant location, hence it saw the benefit in using the single cost, derived by dividing total all-island system cost by total all-island MW-miles. The fourth respondent said it's preference was for a single cost €/MW.km coefficient for

the whole network, believing that this would reflect the value of the service provided to users and their use of system resources, as well as being easier to implement and update.

Four respondents commented on negative TUoS tariffs for wind generators. One respondent argued that the setting to zero of negative tariffs is unfair as it is inconsistent with treatment of other non-baseload generation, and that the methodology should be based on correlations of generation with peak demand in order to be consistent with transmission investment principles. The second respondent contended that wind generation was not intermittent but variable, and that conventional generators are more intermittent as they come on to, and trip off, the system, while wind generators will ramp up and down over time. It said that, while wind generation does have a low capacity factor, it would be wrong to say it cannot provide system support. The third respondent said that wind generators are not relied upon for system support purposes due to their intermittent nature and hence are not considered eligible for negative tariffs, although this policy may be reviewed in the light of any changes to the applicable system planning standards. The fourth said it supported setting TUoS tariffs for wind generation to zero.

A.2.2 Position of the Regulatory Authorities

The Regulatory Authorities acknowledge the support for the principle that the generation scenarios used in the calculation of transmission use of system tariffs should reflect those scenarios used in investment planning. The Regulatory Authorities consider that it is likely that plant will be classified into categories with different scaling factors applying. However, as stated in the consultation paper, further work is required in this regard. Further consultation over the detail of the methodology will be considered should this further work show the impact of such detail to be significant. Notwithstanding this, the Regulatory Authorities will pursue with the system operators options for giving greater transparency, whether through: the publication of, and/or consultation on, input assumptions; enabling participants to reproduce results; or the auditing of the calculations.

In regard to costing of network components, the Regulatory Authorities note the support for the use of replacement costs and the use of a number of standardised categories, although believe it is a matter of efficiency of the resulting locational prices rather than sustainability. Sustainability can be achieved by ensuring that the total revenue allowance of the transmission companies is sufficient to finance their activities, and this can be achieved irrespective of the strength of the locational differentials.

Rather than being an unnecessary second or third order consideration, the Regulatory Authorities consider that using jurisdictionally specific costs may be easier to implement, as well as being more truly reflective of actual costs. This is because there may be some asset categories that are common between the two jurisdictions and others that are specific to one jurisdiction or the other. Averaging across jurisdictions of some categories could thus distort the differentials within each jurisdiction relative to the jurisdictionally specific assets, unless some sort of compensation method is devised. The Regulatory Authorities do not agree with the comment that using a number of standard cost categories, as compared to a single system-wide cost factor, might give perverse signals, or that using a single coefficient would better reflect 'value of service'. Quite the reverse, if a single average cost is used which may be unrepresentative of actual costs then the locational differentials are likely to be far from efficient.

Finally, the Regulatory Authorities do not agree with the comment arguing that flooring TUoS charges at zero for wind generators is inconsistent with transmission investment principles. Where generators - wind-powered or otherwise - cause the need for transmission reinforcement then the unavailability of such generation is not an issue as such unavailability will, if anything, alleviate the problem that the reinforcement was required to solve. However, if generation is relied upon to defer reinforcement - leading to negative charges - then the unavailability of such generation will exacerbate the problem that otherwise would have required system reinforcement. For conventional generators their unavailability is unlikely to be correlated and hence unavailability can be adequately represented by scaling MEC by an appropriate factor. However, for wind generation the unavailability of many generators can be strongly correlated and thus the presence of wind generation to alleviate a transmission system may not be a robust assumption. Nevertheless, the Regulatory Authorities would welcome any review as a result of any changes to system planning standards.

A.2.3 Decision of the Regulatory Authorities

The Regulatory Authorities consider still that further work is required in the derivation of generation dispositions, and will take a view on the appropriateness of further consultation when the options and their impacts are better understood. In any event, the Regulatory Authorities will pursue with the system operators options for giving greater transparency.

The Regulatory Authorities consider it appropriate that the costing of network components should use a number of standardised categories. The exact number and definition of such categories will emerge with further work, but the

Regulatory Authorities will consider it appropriate if costs are jurisdictionally specific.

A.3 Cross-jurisdictional issues

A.3.1 Comments received

Four respondents commented on cross-jurisdictional revenue flows. One supported the idea that the revenues recovered in a jurisdiction should not be limited to the costs of that jurisdiction and that exchange rate risk should be treated on the same basis as the Trading & Settlement Code. A second said that it appeared to be a necessary consequence of the SEM that there must be financial transfers between the transmission companies, and that to adjust the tariffs to balance the revenue in each jurisdiction independently would distort the market. This respondent also agreed that, to ensure that such transfers were no more than necessary, the TUoS generation tariffs would have to recover equivalent costs in the two jurisdictions. A third respondent said that power flows between two interconnected systems leads to usage of either system by generators/suppliers from the interconnected jurisdiction. A locational methodology will seek to assign costs to generators based on actual usage, and that a divergence between incurred costs and those recovered from local users is both expected and appropriate. This respondent also commented that the costs in the two jurisdictions recovered from generators on an all-island basis should be harmonised as far as practicable, and that any relevant inter-jurisdictional payments, e.g. arising from the Inter-TSO Compensation (“ITC”) mechanism, should be considered.

The fourth respondent argued that the use of locational pricing and pooled revenues for generation but not for demand would create a large cross-subsidy between NI customers and ROI customers. This respondent also argued that the SEM HLD was silent on how generator TUoS revenues should be distributed and that it did not set out a method for charging suppliers. It speculated that postalised demand charges were being adopted within each jurisdiction as efficiency gains from localised charges would be small compared to the political, social and transactional costs, but argued that this did not apply to demand charges as between the two jurisdictions. It further argued that differing efficiencies between the jurisdictions would result in generators in the more efficient area paying for the inefficiencies in the other. It also stated that a “change of law” clause in the contracts between NIE Power Procurement Business (PPB) and NI PPB-contracted generators would mean that any increase in charges to NI PPB-contracted generators would be passed on to NI customers.

The fourth respondent proposed that, if there are not to be locational supplier charges, then there should not be the transfer of funds between transmission operators proposed in the consultation paper, and that any surplus or deficit from the generator TUoS charges should be used to adjust supplier charges. This, it argued, would be analogous to the arrangements for losses, where separate Error Supplier Units for each jurisdiction would result in any over or under recovery of losses from generators in a given jurisdiction, as compared to actual losses in that jurisdiction, would be redistributed to customer in that jurisdiction.

A.3.2 Position of the Regulatory Authorities

The Regulatory Authorities note support for the idea that revenues recovered in a jurisdiction should not be limited or related to the costs incurred in providing transmission purely within that jurisdiction, and that to modify the generation TUoS tariff such that this was the case would cause distortions. The Regulatory Authorities note the agreement that the costs recovered in each jurisdiction through generator TUoS should, however, be like for like.

The Regulatory Authorities do not agree that the locational generation tariff combined with the “pooled” revenues results in a large cross-subsidy between NI customers and ROI customers. It is clearly the case that, to the extent that there is any such cross-subsidy, this arises from the absence of locational pricing on the demand side which, as a policy decision, is completely separable from the policy decisions concerning locational generation charges.

It is true that the magnitude of any cross-border revenue flow could be reduced by adjusting the differential between demand charges between the two jurisdictions, in effect introducing a locational tariff for demand, albeit with only two nodes. However, it is far from clear that the appropriate differential would be one that would compensate exactly for financial transfer arising from the generator TUoS charges. Such a comparison would ignore any consideration of interconnector revenue charges that exist today and, in any case, were locational demand charges to be desired, would not necessarily produce the most efficient outcome.

The Regulatory Authorities do not agree with the implication that the inefficiencies of the transmission company in one jurisdiction will be paid for by generators connected in the other is inequitable. Under the all-island SEM, generators will be using the transmission system in the whole island of Ireland, and it is incorrect to imply that they use just the transmission system within their own jurisdiction. It would be no more correct to argue that generators connected to one part of the transmission system in a jurisdiction are paying for inefficiencies in different part of that same system. The

Regulatory Authorities acknowledge that different efficiencies will exist but the application of sound regulation in each jurisdiction will minimise such differences and, further, the Regulatory Authorities regard such differences as being no more significant than other causes of differences in costs between the jurisdictions, such as taxes, land prices, wage rates, etc..

Nor is the analysis of the locational loss factor proposals correct. Whilst it is true that, as specified in Version 1.0 of the TSC, losses over or under recovered within a given jurisdiction are redistributed to the Error Supplier Unit, this will not be the same as redistributing them to customers in that jurisdiction in general but only to the host PES. Where there is a positive redistribution to the Error Supplier Unit, this will merely give the PES a competitive advantage over other suppliers in that jurisdiction. Accordingly, as described in decision paper on transmission losses, it is intended to modify the Error Supplier Unit algebra.

The Regulatory Authorities understand that the TUoS charges in respect of PPB-contracted generators are paid directly by PPB, and hence believe that the "Change of Law" clauses are not relevant. Nevertheless, the Regulatory Authorities recognise that an increase in charges in respect of PPB-contracted generators in NI result will result in those costs being passed on through the NI PSO Levy, resulting in an increase in costs to NI consumers relative to consumers in ROI. The Regulatory Authorities consider that it is appropriate to make a compensatory adjustment to demand use of system charges, which involves also a reduction in the cross-border revenue flow.

The Regulatory Authorities believe that scale of the increase in costs to NI consumers relative to consumers in ROI will depend on a number of factors including the magnitude of the increase in charges in respect of the PPB-contracted generation and the adjustments such that the costs recovered in each jurisdiction through generator TUoS are like for like. Using the best estimates presently available, the Regulatory Authorities believe that the appropriate adjustment will be of the order of €4m per year, up until the first of the cancellation dates in the PPB contracts, which is 1 November 2010. Any decision to run on the PPB contracts could then be made, taking account of the overall benefit to NI consumers allowing for the effect of generation TUoS charges on the PSO Levy. Until that time, the Regulatory Authorities consider it appropriate to make an adjustment up until the first of the cancellation dates in the PPB contracts, calculated each year as part of derivation of the annual TUoS tariffs and taking into account the locational generation TUoS tariff.

As regards Inter-TSO Compensation, the Regulatory Authorities are of the view that, under all-island arrangements, each System Operator will have an allowable revenue that will be recovered from the combination of both users

connected to its system and a payment from (or to) the other System Operator. Whether one System Operator would consider making payment to the other in respect of actions taken in the discharge of its obligations is a separate matter, but not one which need affect the recovery of the allowable revenues.

A.3.3 Decision of the Regulatory Authorities

The Regulatory Authorities continue to be of the view that generator TUoS charges should be calculated on an all-island basis, irrespective of whether this gives rise to any financial transfers between transmission companies.

The Regulatory Authorities continue to consider that the costs recovered through generation TUoS charges should be equivalent as between the two jurisdictions, although it is not a foregone conclusion that it is EirGrid system operator costs that should be excluded or SONI/NIE costs that should be included.

In order to offset any increase in costs to NI consumers relative to consumers in ROI, the Regulatory Authorities consider it appropriate to make an adjustment, up until the first of the cancellation dates in the PPB contracts, calculated each year as part of derivation of the annual TUoS tariffs and taking into account the locational generation TUoS tariff.

A.4 Moyle

A.4.1 Comments received

Three respondents commented on Moyle. One agreed that TUoS charges should be set based on transmission investment considerations, irrespective of whether or not any category of user is exempted from such charges. However, with regard to whether or not TUoS charges are levied on interconnectors under the SEM, two respondents commented that any inadequacy of Moyle revenues would result in NIE having to increase TUoS charges, to the detriment of those paying charges and, ultimately, to the detriment of the customer, whilst the third said that it would not necessarily lead to a shortfall charge to NI customers but that the effect on any surpluses should be considered also. The first respondent argued that TUoS charges were not levied on Moyle or Moyle users, as to do so in addition to British TUoS charges, would constitute the 'pancaking' of charges and a distortion of trade. It also argued that the capacity payments mechanism would be a suitable method of recognising the benefits that it argued Moyle brings to the whole system and all consumers in Ireland as a whole. The third respondent argued that the treatment of Moyle vis-à-vis other participants should take

account of: the rights of access to the market; degree of firmness; use of and impact on the transmission system; and the treatment of its capacity in planning/reinforcement decisions

A.4.2 Position of the Regulatory Authorities

The Regulatory Authorities note the agreement that TUoS tariffs should be calculated using the best estimate of system conditions, irrespective of whether or not certain users are exempted from transmission use of the system charges.

As regards recognising the benefit of Moyle to the system, the capacity payment mechanism in the Trading & Settlement Code applies directly to users of the Moyle interconnector (and any other future interconnector) rather than to the Moyle interconnector itself. The Regulatory Authorities consider that the benefits of the Moyle interconnector described by the respondent are thus already recognised through capacity payments to the users of the interconnector.

A.4.3 Decision of the Regulatory Authorities

The Moyle interconnector will be taken into account in deriving the generation disposition used for the derivation of generator TUoS tariffs.

A.5 Embedded Generators / Autoproducers

A.5.1 Comments received

Six respondents commented on the treatment of embedded generators and Autoproducers.

One respondent argued that threshold of 10 MW for generation TUoS charges was arbitrary and that a threshold of 30 MW would be more realistic figure at which embedded generators could be deemed to use the transmission system. A second respondent said that all embedded generators, not just those below 10 MW, in NI were exempt from TUoS charges, but that excluding them had been a regulatory decision and that to the extent that such generators increase the flow on the transmission network, it would not disagree they should be subject to TUoS charges. This same respondent said that it would not welcome netting of demand and generation as this might enable gaming of use of system charges between import and export. A third respondent said that the current arrangements had underpinned investments in both markets and that, on this basis, existing embedded generators in NI should not be subjected to any additional charges under the new arrangements. This respondent also suggested the TUoS charges should

only apply where there is clear use of the transmission system, and that where use of the transmission system is lessened due to the existence of Autoproducers and embedded generators serving local demand on the distribution system, this value should be recognised with payments to the generators. A fourth respondent, however, said that the 10 MW limit was chosen to allow efficient billing and administration but that, with improved metering and IT systems, this should be reconsidered.

The fourth respondent also said that it believed that a material distortion would exist if the respective treatment of Autoproducers in NI and ROI were not harmonised. It argued that strong consideration should be given to phasing out the ROI Autoproducer provisions prior to SEM Go-Live. A fifth respondent, however, said that it was important that there was some form of consistency between the SEM and existing arrangements for Autoproducers, and that this would ensure correct economic signals were provided into the single market in dealing with system security issues and efficient operation. This respondent also said it believed that good quality CHP should not be exposed to dual capacity charges, i.e. both as a generator and as a demand consumer. The final respondent said that existing procedures were established primarily from a system operators' perspective and that neither of the existing arrangements in NI or ROI were sufficiently supportive of those that are both generators and consumers of electricity. It argued that where electricity is supplied by internal lines there should be no requirement to pay use of system charges for the power consumed on the generators site, and nor should there be any requirement to sell and buy back from either a supply company or the pool.

A.5.2 Position of the Regulatory Authorities

The Regulatory Authorities understand that, strictly, embedded generators under 10 MW in ROI are not exempt from use of charges but that these charges are currently specified to be zero. The Regulatory Authorities acknowledge that these charges are set to zero as a pragmatic measure because, historically, the systems did not exist for billing such users. As explained in the consultation paper, any embedded generation of whatever size will affect flows on the transmission system to the same extent as an equivalent generator connected to the transmission system at the Bulk Supply Point. Accordingly the Regulatory Authorities do not concur with the view that a threshold of 30 MW would be a more realistic figure at which embedded generators could be deemed to use the transmission system.

The Regulatory Authorities acknowledge that no embedded generator currently pays use of system charges in NI, but note that the transmission rebate of supplier use of system charges is paid only in respect of units

sourced from embedded generators of under 10 MW. Further, the Regulatory Authorities do not agree that existing embedded generators in NI cannot be subjected to any additional charges under the new arrangements. The Regulatory Authorities acknowledge the view that TUoS charges should only apply where there is clear use of the transmission system and that, where use of the transmission system is lessened by embedded generators, this value should be recognised with payments to the generators. The Regulatory Authorities believe that this is achieved by exposing embedded generators to TUoS charges such that generators that increase transmission flows will be exposed to positive charges and those that serve to decrease flows will be exposed to negative charges.

The Regulatory Authorities acknowledge the views that the Autoproducer arrangements in ROI should be retained but also the view that the existence of the provisions in one jurisdiction but not the other constitutes a material distortion. Nevertheless, view of the Regulatory Authorities is that the provisions, primarily as applied to CHP, constitute part of the CER's response to its statutory obligations to promote efficiency and the environment, whilst different obligations and policy instruments, which are independent of the transmission charging regime, exist in NI. As regards the provisions in respect of non-CHP plant, the Regulatory Authorities believe that any distortion is not material in the short-term such that harmonisation is necessary for SEM Go-Live.

A.5.3 Decision of the Regulatory Authorities

The Regulatory Authorities consider that all embedded generators should be subject to generation TUoS charges, albeit pragmatically charges for embedded generators below 10 MW should remain at zero.

The Regulatory Authorities consider that the Autoproducer provisions in ROI should be retained but that it is not necessary for the SEM to extend these provisions to NI.

A.6 Transitional Issues

A.6.1 Comments received

Five respondents commented on the phasing-in of all-island generator TUoS charges. Three respondents said that phasing-in was not necessary. One respondent said that it supported phasing-in of TUoS charges only if Transmission Loss Adjustment Factors were phased-in, and suggested a three year period. The fifth respondent said that a transitional arrangement had been dismissed on the grounds that NI generators presently pay an

additional charge on their exports to ROI for the use of the north-south interconnector, which would no longer be the case in the SEM. The respondent argued that these additional charges applied to only a small proportion of their output and that the proposals would significantly increase transmission charges and that the argument was misleading and unsustainable.

A.6.2 Position of the Regulatory Authorities

In respect of the potential phasing-in of all-island generator TUoS charges, the Regulatory Authorities note the support for no phasing-in. Although one respondent suggested a phasing-in period of three years, consistency with TLAFs, suggested also by this respondent, would also imply no phasing-in. Finally, the Regulatory Authorities note, too, that existing charges for the North-South interconnector apply to only a proportion of the output of NI generators. However, the Regulatory Authorities believe that the relevant consideration here is the competitive position of generators relative to each other across the whole island of Ireland and, taking current North-South interconnector charges into account, this is not impaired by the introduction of all-island generator TUoS charges. That the TUoS charges for supplying local demand may change can only be judged in the context of a large number of other factors including the price of energy.

A.6.3 Decision of the Regulatory Authorities

No measures will be implemented to phase-in all-island TUoS tariffs over a number of years, or to grandfather the TUoS tariffs applying before SEM Go-Live.

A.7 Date of Harmonisation

A.7.1 Comments received

Two respondents commented on the date of harmonisation. One said it did not agree that it is acceptable for the harmonisation of TUoS and connection charging to be later than the date of the SEM start. It argued that the SEM is introducing a common electricity price across both ROI and NI and, accordingly, TUoS and connection charging should be aligned on the same timescale. The second respondent said that it didn't understand the rationale had been put forward for the proposal to align connection and generator TUoS charging on 1st January 2008 rather than at the SEM go-live date, although it accepted that the decision would not have an impact on short-run marginal costs in the SEM

A.7.2 Position of the Regulatory Authorities

The All-Island Energy Market Development Framework contains a large number of developments which take place over an extended period of time. As explained in the consultation paper, and noted by one of the respondents, the alignment of connection and generator TUoS charging - unlike Transmission Loss Adjustment Factors, say - should not affect the short-run costs in the SEM and thus alignment at the SEM go-live is not of paramount importance. Alignment at the start of one or other of the transmission tariff years would thus seem to minimise the disruption and additional work required to introduce all-island generation TUoS and connection charges, and 1st January 2008 provides the earliest such opportunity. Nevertheless, rights to use the all-island system will exist from SEM go-live, albeit rights to use the all-island system take effect at SEM Go-Live.

A.7.3 Decision of the Regulatory Authorities

The Regulatory Authorities consider that all-island generation TUoS should be introduced as of 1st January 2008, consistent with the introduction of harmonised connection charging, albeit rights to use the all-island system take effect at SEM go-live.

A.8 Other comments

A.8.1 Comments received

One respondent commented the system operators should begin “strategic grid planning”, involving planning transmission investment to accommodate anticipated generation, based on granted planning permissions. It is not clear to the Regulatory Authorities that the granting of planning permission would necessarily improve transmission planning to a significant degree, as there is no impediment to a connection application being submitted soon after the planning permission is granted or, currently in ROI, even before. As to whether transmission companies should speculatively construct transmission capacity, the comment is noted, but is not of immediate relevance to the introduction of all-island generator TUoS and connection charging.

Two respondents commented on contestability and argued for its introduction as part of the proposed all-island connection process under the AIP. The Regulatory Authorities consider that there will continue to be a separate connection process in each of the jurisdictions under the SEM. Nevertheless, the Regulatory Authorities consider that the contestability in connections should be a feature of both connection processes as soon as reasonably practicable.

One respondent commented on distribution charging. It argued that embedded generators requiring distribution system reinforcements, which are subsequently required for general load growth, should be required to pay only the cost of capital for the period that the works are brought forward rather than having to pay the entire capital cost only for it to be subsequently reimbursed. This respondent also believed that the SEM should be used as an opportunity to merge all of the transmission and distribution policies across the island of Ireland into one unified policy. The Regulatory Authorities consider that charging only the cost of capital for distribution reinforcements would leave the other distribution system users exposed in the event of termination or in the event that the reinforcements were not subsequently used. Furthermore, reasonable distribution charging policies in the respective jurisdictions, whilst having the potential of affecting the position of users *within* each jurisdiction relative to each other, should not affect the relative position of users as *between* the jurisdictions.

One respondent commented on the harmonisation of price controls, saying that it would be prudent to harmonise price controls to give the same incentives on system operators to reduce costs and to give the same allowed rates of return. As discussed earlier, the Regulatory Authorities do not consider that lack of harmonisation is a problem that requires harmonisation. Furthermore there may be genuine reasons as to why the costs of capital for the transmission companies in the different jurisdictions may be different. A harmonised rate of return might thus deliver excessive rates of return to some companies, or fail to allow others to be able to finance their activities, or both.

APPENDIX B

List of Respondents

Airtricity

Aughinish Aluminium

EirGrid

ESB Power Generation

Irish Wind Energy Association

Moyle Interconnectors Limited

Quinn Group

Renewable Energy Systems

Northern Ireland Electricity

Synergen

Viridian Power and Energy