Airtricity Response to

Consultation on Methodology Options for the Implementation of Location Signals on the Island of Ireland

SEM-09-060

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Scottish and Southern Energy

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Consultation on Consultation on Methodology Options for the Implementation of Location Signals on the Island of Ireland

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Introduction

Calculation of Losses

We note the Consultation's recognition that, "if the network pricing is not efficient, this could distort competitiveness amongst generators of different sizes and technologies and simultaneously reduce the short term efficiency of the generation system and increase the cost of network investment above efficient levels". While this statement is true, it does not go far enough; where is the recognition that network pricing must also be effective? It is perfectly possible to do the wrong thing very efficiently, but effective delivery may be much harder.

In previous submissions we have made the point that just because a sum can be done, it does not mean that it is the correct sum to do! We fundamentally distrust any methodologies that require background assumptions based on forecast prices, subjective load flow adjustments, simplifying assumptions, lack stochastic validity, are not reconciled on the basis of outturn prices , plant availability or weather and, since the system is not fully metered, aim for a target that cannot be proven. The current TLAF calculation is of this type. It is entirely ineffective in delivering any credible locational signal however many decimal places are used efficiently to cloak its fundamental uselessness with spurious accuracy.

TUoS Charging

As more and more dispersed generation is connected and as the grid itself is developed, the relevance of deep reinforcement for individual generators becomes of less and less value. The meshed network is shared by all users; demand as well as generation. Clearly if a Generator has a choice to connect at either of 2 nodes; cost difference to the Generator €100k but cost difference to Network provider of €100m, - an appropriate signal is needed to reflect the incremental cost of connecting it to point A rather than at point B. But this should be at a level that ensures the correct "economic cost" between the Transmission system and Generator is "sensible". However this signal need only be sufficient to incentivise the "correct decision". It does not have to be and should not attempt to be "fully cost replicating", since the TSO is a facilitator and not judge and jury.

Our comments on the proposed arrangements for charging and losses reflect the above perspectives, which are more fully discussed in Appendix 1, which is our position paper submitted in response to the previous consultation in this series.

Options for Losses

Among the failures of the current loss calculation methodology are the following;

- Fairness
    - Asymmetric treatment of generation and demand is discriminatory – especially when changing demand also changes losses, yet these costs are assigned to generators. It is a convenient error to assign causality for losses to the nearest Generator just because it is too difficult to track losses for each generator across the whole, complex, interconnected system. It is unfair just to adopt the easy answer to a complex joint cost allocation problem.
    - recently-connected generators in RoI are required to cross-subsidise those connected prior to 19 February 2000. This unduly discriminates between holders of licences and is illegal; similarly with the treatment of microgenerators in RoI for whom no TLAFs are calculated.
    - Marginal losses are higher than average losses, yet scaling to meet the calculated target uses a uniform factor; an unfair redistribution of wealth between Generators.
    - There is no reconciliation calculation – this is a material issue in light of the amount of Generators' money involved, yet only the TSO's opinions are reflected in the calculation.
    - Once generation investment has been made, TLAFs continue to change; it is pointless to incentivise it to move. We have learned from experience that any locational signals are meaningless and merely add to risk.
- Alignment with European policy on promotion of renewable generation;
    - To be consistent with 2003/54/EC, any methodology would not start with a background of conventional generation on the system. It would be first in the dispatch order and other plant would be incrementally dispatched to meet net demand.

<u>Option 1 – business as usual</u>

The current TLAF methodology is almost entirely driven by the background dispatch assumptions, so Table 3 is wrong in suggesting that it leads to efficient dispatch. It makes no

difference whatsoever to the dispatch of renewables. For all the reasons given by Airtricity and other market Participants over the years, the current, discredited methodology should be given no further consideration.

Option 2 – uniform losses

Uniform Loss Adjustment Factors is the fairest approach to charging for losses, as it involves no subjectivity in allocating ownership of losses and removes the unfairness of attributing changing demand losses to Generators. This option achieves the highest score in meeting the high level design objectives.

Option 3 – zonal losses

In a meshed system, all Parties (including demand) are jointly responsible for losses. Any methodology based on a calculated solution carries all the issues of credibility and unfairness of the current system. Zonal losses could only be seen as fair if every system node was metered yet, as we have previously said, energy charges comprise around half the cost of a delivered kWh and Distribution charges add roughly another third. A competitive energy market will drive development of a more efficient generation portfolio and deliver more value to customers than a perfectly configured Transmission network. This option has no merit in the current circumstances of network development and changing lad flows. In particular it would contribute nothing whatever to decisions on the dispatch of wind, so it has no incremental value for efficient dispatch compared with application of average losses.

Option 4 – purchase of losses

This would be an incredibly complex methodology and appears still to require estimation. It offers no additional benefit compared with average losses. Summary

In the absence of full system metering, only averaging of losses has any credibility or fairness. Clearly pseudo-accurate TLAFs have no impact on the dispatch of wind and a comparison of DQs with MSQs in the market suggests there is little evidence of an effect on conventional generation either. Perhaps this is due to the level of system congestion or maybe to issues of plant reliability, but to suggest that the current methodology leads to most efficient dispatch can only undermine the consultation's other conclusions. Airtricity believes Option 2 is the correct approach.TUOS Options

Of the six TUoS tariff options, only Option 5 represents a fair balance between Generators and Demand. We believe any other approach is unduly discriminatory between Parties. As one of the objectives of the Trading and Settlement Code is to promote transparency, any charging methodology that differentiates between Parties on the basis of opaque, scenario-based modelling that uses forecast fuel prices but without ex-post reconciliation, etc, etc is fundamentally out of line with the TSC in addition to being discriminatory and untrustworthy. For these reasons we reject options 1 to 4.

The addition of an incentive discount option is superficially attractive, however in the environment of Grid 25 and Gate 3, the concept of "a favourable location" will be much more

difficult to pin down than in a situation that has matured and is subject only to incremental connections.

We therefore believe Option 5 is the correct approach, as it is transparent, non-discriminatory between Generators and also matches the treatment of Demand.

Appendix 1

All island Transmission Use of System Charging and Loss Factor

Airtricity Position Paper – 27 March 2009

Purpose of Transmission

Transmission is of course essential for interconnecting generation and load, but it should not be seen as dictating the market shape, or of defining the nature and location of either Generation or Demand. Adoption of such a philosophy would be to have the tail wagging the dog. Transmission access for Generators is a "ticket to ride" - to get in the energy market. It is not an end in itself.

Charging philosophy

Transmission access should be cost based, not value based. In particular we believe that Transmission charging must move away from subjective, modelled scenarios based on assumed merit order dispatch but lacking in ex-post correction. As a natural monopoly, the Transmission provider receives a guaranteed, regulated return for efficient investment so should not seek to use complex, opaque and pseudo-economic signals to distort broader signals, such as resource availability, that are far more relevant to Generator or load location than network charging – and fairer.

When Transmission revenue is fixed, large locational incentives merely transfer wealth between participants. Transmission charging should reflect the underlying fact; that the system is a tradeoff between efficient investment in a secure network and Generators receiving low-risk access to transport their power to market (customers) over both the short and long term. For too long the underlying Transmission charging philosophy has been based on constraining Generator access for the purpose of avoiding additional network development.

Transmission is all about assets and capacity. Certainly there is a need for efficient investment, but once that has been made it is fairly pointless to argue about utilisation of an interconnected network of regulated assets with a 40-year life!

Adoption of Grid 25 means that this previous approach is now redundant and new charging arrangements can reflect revenue recovery rather than capacity rationing.

Commercial drivers

Network investment drivers

Decisions on whether or not to build new Generation should be governed by commercial signals in the energy and capacity markets. These signals should deliver the required level of demand security, which must be the starting point. The Regulatory Authorities decide (on behalf of customers) how much Demand security is "worth" both in terms of Generation (the capacity payment) and delivery (network). In turn this determines the security standard for the core Transmission network and hence the asset and investment levels.

Ultimately therefore, demand drives Transmission investment.

Source of customer value

Energy charges comprise around half the cost of a delivered kWh and Distribution charges add roughly another third. A competitive energy market will drive development of a more efficient generation portfolio and deliver more value to customers than a perfectly configured Transmission network.

Transmission needs to facilitate energy market competition and not interfere with it because an efficient energy portfolio will save more than imposing a cost allocation methodology designed to deter a Generator from connecting.

Transmission charging principles

Demand

Since Demand ultimately drives the level of Transmission assets required to meet its security requirements, charging must be based on the level of peak demand and efficiency of network usage at an aggregate level. Therefore Demand Transmission charges must differentiate between times of capacity surplus and capacity scarcity. We believe that a “triad”-type charging arrangement is an excellent signal for load to self-constrain within an envelope of efficient network investment. This is an excellent proxy for the value of network capacity; the alternative is to constrain investment and oblige load to remain within available capacity through disconnection.

At a localised level users may or may not choose to have a lower standard of connection security. Locational charges should only relate to this aspect of their connection, since all users benefit from the core network security standards and associated charges; there is only one network.

We do not believe that it is necessary for Transmission charges to target each individual user; if a Supplier’s aggregate load is the basis of charging, then each will allocate demand charges to its customers in a way that passes the signal through. This is certainly a simpler approach than any system of charging based on the assumption that customers have to be individually charged by the TSO.

Appendix 1

Demand charges should reflect aggregate demand at system peaks.

Generation

Generators should pay charges;

- for having the core network in place to transport their power to (potentially) all demand,
- that reflect the incremental cost of connecting them into the network at point A rather than at point B. But these should be at a level which ensures the correct "economic cost" between the Transmission system and Generator is "sensible". e.g. A Generator having a choice to connect at either of 2 nodes, cost difference to Gen €100k, but cost difference to Network provider of €100m - needs an appropriate signal. However this signal need only be sufficient to incentivise the "correct decision". It does not have to be and should not attempt to be "fully cost replicating", since the TSO is a facilitator; not judge and jury,
- that are local, but only to the extent these reflect the required level of security; ie single or double circuit for a more secure connection.

While some Transmission service providers sometimes adopt the most arcane of methods in seeking to recover non-locational charges (the "residual"), we believe Ireland should have a straightforward and sensible system of charging. Any system that purports to allocate every Euro cent to its “economically correct” 13 amp socket, based on intensive use of a Cray supercomputer and a collection of heroically opaque input assumptions, is pointless. As highlighted above, energy market efficiency delivers far more value to end-user customers.

The process used to derive Generator charges must be clear and based on the above high level principles and European tariffication guidelines (that limit the maximum charge on Generators).

Embedded Generation

Embedded Generation can be dealt with by requiring the interface between DNO and the Transmission service provider to have certain entry/exit requirements and be managed on a net basis. The TSO applies exit charges to the DNO, who allocates the cost to demand via Distribution charges. Transmission entry capacity charges should be allocated to embedded Generators on a net basis, also at the T/D boundary. This keeps the Transmission system consistent and the DNOs then manage their systems according to local needs and conditions whilst remaining "compliant" at the boundary. This arrangement will cater for the existence of a single Transmission system with two separate Distribution networks on the Island and allows for independent Distribution charging arrangements.

Charges to embedded Generators should be tariffed to reflect DNO payments for net Transmission capacity requirements at the T/D boundary.

Treatment of losses

Appendix 1

The current arrangement of charging TLAFs is inaccurate, unfair and subjective. In the questionnaire associated with this Transmission review process, we list some of the main objections. In a joint cost allocation process there is no right answer and just because marginal losses exist in the vicinity of Generator A, it requires a particular mindset to attribute these to Generator A rather than to Generators B and C, whose recent commissioning has changed these losses. Therefore, even if the methodology were perfect and calculated with impeccable simulation based on perfect foresight of Network conditions, attribution of cause would still be subjective.

As Demand ultimately drives Transmission investment, it is wrong to penalise Generation for changes in the pattern of Demand. Unless nodal Demand losses are applied, it is discriminatory to apply nodal Generation losses (even if these were properly calculated and everyone could agree on fair attribution).

All losses should be borne by Demand, particularly as the Transmission system is not fully metered and losses are calculated rather than properly measured.